

Carrying the Past with you Across the Border: Long-term Effects of Conflict and Environmental Stress Exposure in Syria on the Social Well-being of Refugees in Jordan

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Abstract

When refugees flee abroad, they carry the legacy of their traumatic experiences across borders. While there are over 43 million refugees worldwide, the long-term effects of conflict exposure on their well-being remain poorly understood. This paper examines how pre-displacement exposure to violent conflict and environmental stressors shapes the long-term social well-being of Syrian refugees in Jordan, focusing on life satisfaction, social trust, and social safety nets. Using representative survey data from refugees living in Jordan and conflict events, as well as remote sensing environmental data from Syria, we distinguish between exposure to conflict events and conflict fatalities, revealing distinct effects. While exposure to conflict events has no systematic impact on social outcomes, exposure to conflict fatalities significantly reduces life satisfaction and weakens social safety nets. These effects are critically mediated by mental health, with depressive symptoms significantly explaining the negative impact of conflict fatalities on life satisfaction. Our findings also highlight gendered dimensions: individuals living in female-majority households experience particularly severe declines in life satisfaction, whereas those in male-majority households show greater deterioration in social safety nets. Having experienced droughts before leaving Syria further amplifies the negative effects of conflict, particularly on social safety nets. These results highlight the importance of considering intersecting vulnerabilities due to gender, environmental stress, and conflict exposure when designing support systems for forcibly displaced populations.

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1 Introduction

Forcibly displaced people represent an urgent global priority, with 117.3 million individuals displaced worldwide by the end of 2023, including 43.4 million refugees (UNHCR, 2024). While violent conflict is the primary driver of displacement globally, affecting all 17 countries currently classified as emergencies by the World Food Programme (World Food Programme, 2025), its impacts vary significantly depending on the nature and intensity of exposure (Singhal, 2019; Stojetz and Brück, 2023b; Vesco et al., 2025). These varied conflict experiences may create lasting effects that refugees carry across the border when they flee (Langlotz et al., 2025). Despite the large number of conflict-affected refugees around the world, we still lack a clear understanding of how different dimensions of conflict exposure shape refugees' long-term outcomes and how conflict exposure in their origin location compounds with environmental adversities.

In this paper, we examine how pre-displacement conflict exposure shapes the social lives of Syrian refugees in Jordan, one of today's largest and most protracted refugee situations. We take a 'polycrisis' approach (Lawrence et al., 2024; Morin and Kern, 1999) to unpack how conflict exposure, coupled with environmental stress in the origin location, affects long-term social well-being in a situation of forced displacement. We place particular emphasis on assessing whether environmental stress, specifically drought conditions, alters the impacts of past conflict on refugees' social well-being. We also draw conceptually on intersectionality theory (Bastia, 2014), recognizing that many social outcomes are shaped by multiple factors across different levels, which may be interconnected and interdependent (Kapilashrami and Hankivsky, 2018). Specifically, we examine how the impacts of individual-level conflict exposure on social well-being vary with (1) household gender composition, recognizing that male and female-majority households may face distinct vulnerabilities and develop different coping strategies (Brück et al., 2024) and with (2) the local environments refugees live in, which strongly shape refugee lives (Betts et al., 2024). We focus on three key components of social well-being: life satisfaction, social trust, and social safety nets (Fiedler, 2023; Langlotz et al., 2025). Understanding these dimensions of social well-being is crucial, as they influence refugees' ability to integrate, work, and overcome displacement trauma.

The relationship between conflict exposure and refugees' long-term social well-being remains theoretically ambiguous, with existing research suggesting that there may be both negative and positive linkages. One substantial body of research documents the lasting negative impacts of conflict exposure on social capital, behaviors, and trust (Cassar, Grosjean, and Whitt, 2013; Rohner, Thoenig, and Zilibotti, 2013; Stojetz and Brück, 2023b; Vesco et al., 2025). These studies showcase that pre-displacement conflict exposure may reduce refugees' social well-being through mechanisms such as trauma, disrupted social networks, and weakened community bonds. However, another line of research documents that there are also ways in which shared adversity during conflict can foster collective coping mechanisms and prosociality (Bauer et al., 2016; Fabbe, Hazlett, and Sınmazdemir, 2019; Gilligan, Pasquale, and Samii, 2014). This line of work shows how conflict exposure can strengthen social cohesion and enhance mutual support within communities, which suggests that conflict exposure may also strengthen social well-being even after displacement.

Mental health is a critical pathway connecting conflict exposure to social outcomes in post-conflict settings (Vesco et al., 2025). While psychological distress could mediate both the negative and positive social effects of conflict, empirical evidence on these specific mechanisms remains limited. However, understanding the role of mental health, particularly depressive symptoms, is crucial for explaining how conflict experiences affect long-term social outcomes. Therefore, our analysis specifically examines how mental health, measured through the prevalence of depressive symptoms, mediates the relationship between refugees' exposure to conflict events and fatalities and their social well-being. Additionally, research shows that conflict exposure, social well-being, and psychological trauma all exhibit distinct gender patterns (Goodkind et al., 2022; McKinzie and Clay-Warner, 2021; Ronzani et al., 2024). We therefore explore if and how the long-term impacts of conflict exposure on social well-being vary along gender lines at the individual and household levels.

Studying the causal impacts of pre-displacement conflict exposure among refugees faces significant data challenges, as these analyses require high-quality data on both current refugee outcomes and their conflict exposure before displacement. Furthermore, linking refugee outcomes to data on local conditions during conflict is particularly challenging, as information about refugees' place of origin and timing of displacement is often unavailable or unreliable (Couttenier et al., 2019). We overcome this challenge by using unique information on the governorates of origin and dates of displacement for Syrian refugees in Jordan, provided by UNHCR. We match this information with UCDP data by governorate of origin in Syria, constructing two different measures of exposure to conflict following existing literature (e.g., Brück et al., 2016): conflict events, measured by the cumulative number of violent incidents, and conflict fatalities, measured by the total number of deaths from these events. With these indicators we measure both the frequency of violent incidents (conflict events), capturing the regularity of conflict disruption, as well as the human toll (measured through fatalities) which represents conflict intensity.

This novel empirical strategy enables us to link representative refugee survey data with pre-displacement local conflict exposure in Syria as well as other local conditions before displacement. To capture environmental stress, we use the Palmer Drought Severity Index (PDSI) to measure drought conditions in each Syrian governorate where refugees lived before displacement. Combining the survey data with information about the origin location, we estimate ordered logistic regression models to assess the relationship between local conflict exposure and refugees' social well-being. To strengthen the causal interpretation of our findings, we estimate models that include fixed effects for the origin location in Syria and the current location in Jordan, thus accounting for systematic, time-invariant characteristics at the location level.

Using the three aforementioned measures of social well-being—life satisfaction, social trust, and social safety nets—we find that different aspects of conflict have distinct long-term effects on refugees. While exposure to conflict events shows no

4

systematic impact on any social outcome, conflict fatalities have significant negative effects on both life satisfaction and social safety nets. These effects vary by household composition: refugees in female-majority households experience particularly severe negative effects on life satisfaction while refugees in male-majority households show greater deterioration in social safety nets. Our analysis also reveals key mechanisms underlying these effects. Depressive symptoms emerge as a crucial pathway linking conflict exposure to social outcomes, mediating 76% of the total negative effect of conflict fatalities on life satisfaction. Moreover, environmental stress amplifies conflict's negative effects: the impact of conflict fatalities on social safety nets is significantly worse for refugees who also experienced extreme drought conditions in their origin location before displacement.

This paper advances understanding of conflict's social impacts through both methodological and substantive contributions. Most existing studies are based on measures of self-reported conflict exposure, which can lead to biased findings about social outcomes (Child and Nikolova, 2020). Studies using conflict event data have typically focused narrowly on contemporary exposure to violence (Mesa-Vieira et al., 2022), overlooking other dimensions of conflict-induced adversity. We overcome these limitations by leveraging objective conflict event data to capture distinct dimensions of past conflict exposure—separating out events and fatalities—while also examining how past environmental stressors compound these effects. By analyzing how conflict interacted with environmental stress pre-displacement, our approach reveals the poly-crisis nature of displacement, where multiple challenges may combine to create impacts that exceed the sum of their individual effects (Lawrence et al., 2024). This framework emphasizes that certain refugees may be particularly burdened after experiencing compound shocks that occur simultaneously rather than separately.

We make four key contributions to the literature on conflict and forced displacement (Ruiz and Vargas-Silva, 2013). First, we provide rare representative evidence on the long-term, cross-border effects of past conflict on refugees, moving

5

beyond the small, unrepresentative samples that characterize most studies.¹ Second, we advance understanding of the gender dimensions in forced displacement (Brück et al., 2024), examining how household gender composition shapes vulnerability and resilience (Brück et al., 2024; Stojetz and Brück, 2023a; 2024). Third, building on nascent research highlighting the role of psychological well-being in shaping socio-economic outcomes (Bossuroy et al., 2022; Mani et al., 2013), we investigate how depressive symptoms mediate long-term socio-economic impacts of armed conflict. Fourth, and most importantly, our study provides new evidence on how different types of adversity intersect and interact to shape refugee outcomes. By combining detailed conflict exposure data with drought indicators, we study how environmental stressors modify conflict impacts (Stojetz et al., 2024). This approach reveals that extreme drought significantly amplifies the negative effects of conflict fatalities on social safety nets - and that it does so over long periods of time. Our findings thus demonstrate the importance of considering compound stressors in displacement contexts, as refugees who faced both severe violence and environmental pressures in the past show particularly strong erosion of their contemporary social support networks. Our granular data on both conflict events and environmental conditions allows us to disentangle these effects and provide new insights into how multiple pre-displacement challenges shape refugees' long-term social well-being.

¹One recent exception is the study by Pozuelo et al. (2023) on mental health among refugees in Kenya, Uganda, and Ethiopia.

2 Theoretical framework

Violent conflict fundamentally reshapes societies by breaking down the social contract and transforming social norms through collective violence (Justino, Brück, and Verwimp, 2013). This breakdown often forces people to flee their homes, creating waves of displacement that separate families and communities. Adverse conditions can accumulate over time until a tipping point is reached, at which migrating becomes the most feasible option (Czaika and Reinprecht, 2022). When conflict creates conditions that threaten survival—through direct violence, economic collapse, or social upheaval—migration becomes a critical survival strategy.

The duration and intensity of conflict exposure shape refugee outcomes long after displacement. In the economic domain, research documents impacts on labor market participation, earnings, and wealth accumulation (Kondylis, 2010; Peitz et al., 2023). Social outcomes are similarly affected, with studies finding that greater conflict exposure is associated with reduced trust, weakened social networks, and changes in risk preferences (Bauer et al., 2016; Justino and Stojetz, 2025). Health consequences are also significant, spanning both physical and mental dimensions. For instance, in Bosnia and Herzegovina, Kovac, Efendic, and Shapiro (2022) found that greater conflict exposure predicted worse educational performance, with effects varying by migration type—those who moved internationally showed better outcomes than those internally displaced, suggesting that displacement patterns may moderate conflict exposure effects.

Several key mechanisms link $\operatorname{conflict}$ exposure inorigin locations to post-displacement well-being. We examine these mechanisms in four parts. First, in Section 2.1, we analyze the dual nature of conflict's impact: while it often creates lasting trauma that impairs social connections (Thomas, 2024), it can also strengthen community bonds and increase prosocial behavior (Bauer et al., 2016). Second, Section 2.1.1 examines how pre-displacement conditions, particularly environmental stressors, shape adaptation trajectories. Third, Section 2.2 investigates mental health as a crucial mediating factor, showing how conflict-induced trauma and stress create lasting psychological effects (Pozuelo et al., 2023) that influence subsequent social outcomes. Finally, Section 2.3 explores heterogeneous effects of conflict exposure, examining both gender differences—where women typically face greater vulnerabilities (Eseosa Ekhator-Mobayode et al., 2022) yet often develop stronger coping mechanisms (Stojetz and Brück, 2023a)—and variations between camp and non-camp refugee settings.

2.1 Conflict exposure and social well-being

Negative impacts. An extensive literature documents how conflict and violence create lasting negative effects on social outcomes (Vesco et al., 2025). These impacts manifest across multiple dimensions of social life. Conflict exposure erodes trust, with the strongest erosion occurring in areas that experience the most intense violence (Rohner, Thoenig, and Zilibotti, 2013; Cassar, Grosjean, and Whitt, 2013; Fiedler, 2023). Exposure to extreme conflict violence also leads to persistent decreases in life satisfaction (Pozuelo et al., 2023). Individuals who directly experienced violence show increased anti-social and risk-taking behaviors even decades after the conflict ends (Gangadharan et al., 2022; Stojetz and Brück, 2023b). Beyond individual-level effects, conflict can also damage community cohesion by disrupting social networks and weakening traditional support systems (Mitchneck, Mayorova, and Regulska, 2009). The widespread nature of these effects, from personal well-being to community ties, and their persistence long after violence ends, suggests that conflict exposure fundamentally alters both social attitudes and behavioral patterns in ways that can span generations (Justino, Brück, and Verwimp, 2013).

Positive impacts. A different strand of research identifies ways that conflict can strengthen social bonds. Studies show that conflict exposure increases social participation and cooperation within communities, particularly among in-group members, and enhances local public good provision, confirming that conflict experiences can bring people closer together, even in the long term (Bauer et al., 2016; Justino and Stojetz, 2025). Social cooperation at the local level is associated with

individual exposure to war violence, linking these experiences to enhancements of in-group norms and preferences (Bauer et al., 2016). Evidence indicates that conflict exposure can increase prosocial motivations, altruism, contributions to public goods, trust-based investments, and reciprocity in trust-related interactions (Gilligan, Pasquale, and Samii, 2014). Furthermore, conflict exposure can increase empathy, helping behaviors, and support to others in need (Hartman, Morse, and Weber, 2021). These studies indicate that experiences of conflict exposure can also have lasting positive social impacts.

This divergence in findings shows that the social impacts of conflict operate through multiple channels. While trauma may impair individuals' capacity to establish and maintain social relationships (Mels et al., 2010; Phillimore, 2011), shared adversity can also motivate collective coping strategies that strengthen community bonds. Based on this dual evidence, we hypothesize:

Hypothesis 1: Exposure to violent conflict in the origin country has long-term effects on social well-being among refugees.

2.1.1 The role of pre-displacement environmental stress

In conflict settings, people face multiple overlapping challenges beyond collective violence. These challenges often converge in what scholars term a 'polycrisis', where two or more significant crises occur simultaneously and may interact in ways that create impacts beyond the sum of their individual effects (Jervis, 1998; Lawrence et al., 2024). Many conflict regions are particularly vulnerable to polycrises, as they are increasingly prone to weather shocks and other environmental pressures created by climate change. Syria exemplifies this pattern: severe droughts coincided with conflict (Kelley et al., 2015), creating compound challenges stemming from environmental stress and violence that may reinforce each other. A growing literature documents how exposure to environmental stress can have lasting psychological, social, and economic impacts (Nico and Azzarri, 2024; Tam, Leung, and Clayton, 2021; Van Vugt, 2009), while emerging research shows how these environmental challenges interact with

conflict conditions to create complex compound effects (Kayaoglu, Baliki, and Brück, 2024; Stojetz et al., 2024).

When households face both conflict exposure and environmental stress, their capacity to cope with these shocks may be diminished, potentially creating multiplicative rather than merely additive effects on well-being (Lawrence et al., 2024). Resource constraints from environmental stress may limit households' ability to buffer conflict-related shocks, while conflict-induced disruptions to social and economic systems may reduce resilience to climate pressures. While the long-term impacts of such interactive effects remain largely unexplored, particularly in displacement contexts, we theorize that environmental conditions in origin locations may significantly modify how conflict exposure shapes subsequent outcomes. This leads to our second hypothesis:

Hypothesis 2: The long-term effects of conflict exposure on social well-being vary with local environmental stress in the origin location.

2.2 The mediating role of mental health

A growing body of research at the intersection of economics and psychology emphasizes the critical but often overlooked role of mental well-being in social and economic decision-making (Bossuroy et al., 2022; Mani et al., 2013). Exposure to violence creates lasting effects on mental health that persist long after the conflict ends (Singhal, 2019). The psychological impact of conflict can affect individuals' capacity to form relationships, engage in economic activities, and participate in community life. While not extensively studied, emerging evidence suggests that these mental health impacts significantly shape post-conflict social behavior and outcomes (Pozuelo et al., 2023; Ronzani et al., 2024). Understanding these psychological dimensions is particularly important in displacement contexts, where the mental health burden of conflict may be compounded by the challenges of forced migration and adaptation to new environments (Bogic, Njoku, and Priebe, 2015). **Negative impacts.** Exposure to armed conflict and traumatic experiences consistently worsens mental health outcomes (Bogic, Njoku, and Priebe, 2015; Pozuelo et al., 2023), including depression, anxiety, and post-traumatic stress disorder that persist long after refugees reach safety (Singhal, 2019). The persistence of these mental health effects is particularly striking. Hossain et al. (2021) document a high prevalence of severe mental health symptoms among Rohingya refugees even two years after displacement, while Bogic, Njoku, and Priebe (2015) find that greater exposure to pre-migration trauma predicts mental disorders five or more years after displacement.

Beyond their immediate psychological impact, these mental health consequences interact with displacement experiences and post-displacement conditions in multiple ways. Hazer and Gredebäck (2023) demonstrate how war-related traumatic events before displacement interact with and amplify subsequent challenges during Assaf, Nuwayhid, and Habib (2024) identify both direct pathways displacement. between war-related traumatic experiences and mental health, and indirect effects mediated through post-displacement stressors including financial, political, and social Refugees, who frequently experience trauma both before and during challenges. displacement, face distinct constraints on economic participation compared to host populations (Betts et al., 2016; Betts et al., 2024). Pozuelo et al. (2023) find that refugee populations in East Africa show significantly elevated levels of depressive symptoms and functional impairment compared to host populations. These findings indicate that pre-displacement trauma may sensitize individuals to subsequent stressors, creating compounding effects on mental well-being that limit their capacity to establish and maintain social relationships (Mels et al., 2010; Phillimore, 2011), even as they attempt to adapt to their circumstances.

Positive impacts. Recent evidence also reveals the possibility of positive adaptations through mental health pathways. Studies show that shared traumatic experiences can strengthen community bonds and enhance prosocial behaviors (Bauer et al., 2016). Post-traumatic growth theory suggests that conflict exposure may foster

resilience and stronger social connections. For instance, Hartman, Morse, and Weber (2021) documents how displaced individuals who experienced violence often develop more empathetic preferences and helping behaviors. These results demonstrate that conflict exposure may also strengthen certain dimensions of mental well-being. The shared experience of conflict can forge stronger within-group solidarity, activate prosocial tendencies, and create more robust mutual support networks. These positive social transformations do not negate the devastating psychological impacts of conflict but represent important adaptive responses that highlight human resilience.

Both impact pathways emphasize the critical role of the social environment. While social connections are vital for survival and adaptation during displacement, potentially supporting positive impacts, collective psychological trauma from conflict exposure may reinforce negative impacts and make these connections harder to establish and maintain (Mitchneck, Mayorova, and Regulska, 2009). This tension between the increased need for social support and the decreased capacity to build it represents a critical challenge for displaced populations. In that venue, we hypothesize the following:

Hypothesis 3: Mental health mediates the impacts of exposure to violent conflict in the origin country on long-term effects on social well-being.

2.3 Heterogeneous Effects

The impact of conflict exposure on refugees varies systematically, particularly across gender and displacement settings. Gender shapes both immediate coping strategies and longer-term adaptation patterns (Kelly et al., 2024), with women often facing distinct vulnerabilities yet also developing unique forms of resilience. Similarly, the institutional and social environment of camps versus non-camp settings can fundamentally alter how refugees process and adapt to their conflict experiences.

To understand these interacting sources of variation, we draw on intersectionality theory (Bastia, 2014). This framework emphasizes how gender and displacement circumstances combine to shape social and economic outcomes in ways that go beyond their individual effects. For instance, women's experiences of conflict may manifest differently in camp versus non-camp settings due to varying access to resources and social support networks (Kapilashrami and Hankivsky, 2018). Through this lens, we examine how gender and displacement settings intersect with conflict exposure to influence refugees' long-term social well-being, revealing how these factors can create distinct challenges and opportunities for different subgroups within the refugee population.

2.3.1 Gender

Conflict fundamentally disrupts traditional gender roles and family structures, with distinct implications for women during and after displacement. These vulnerabilities manifest across multiple domains. In the economic sphere, evidence from post-war Bosnia and Herzegovina shows that while displacement reduces employment overall, women are more likely to withdraw entirely from the labor force while men remain despite higher unemployment (Kondylis, 2010). This pattern reflects how pre-existing gender norms interact with displacement to shape economic participation. Stojetz and Brück (2023a) emphasize that during conflict, women face overlapping challenges from gender-based barriers, forced displacement, and violence, particularly in accessing productive work outside agriculture. Indeed, Stojetz and Brück (2024) document a "double burden of female protracted displacement" where internally displaced women engage in more work compared to non-displaced ones, yet remain poorer on average.

Mental health emerges as another critical domain of gender disparity. A large body of evidence documents gender gaps in mental health outcomes among displaced populations (Goodkind et al., 2022; Ronzani et al., 2024). In a survey investigating Syrian refugee women, Kheirallah et al. (2022) find that most women revealed a high risk for depression, anxiety, and PTSD symptoms. Looking at a broader scope of disasters resulting in displacement or relocation, McKinzie and Clay-Warner (2021) find that displaced women reveal higher levels of mental health problems than displaced men. While most studies focus on acute trauma such as assault, torture, or accidents, the experience of female refugees is, in addition, more likely to be shaped by the chronic and ongoing trauma of family separation and the loss of home (Goodkind et al., 2022).

Beyond economic and psychological impacts, conflict exposure creates distinct safety and health risks for women that can have long-lasting effects. Violent conflicts put women and girls' health and safety at particular risk (Eseosa Ekhator-Mobayode et al., 2022; Stojetz and Brück, 2023b), potentially limiting their ability and willingness to engage in certain economic activities even after reaching safety. These compounded vulnerabilities may be especially severe for women due to both the nature of conflict-related trauma and the social and economic marginalization often experienced during displacement (Kelly et al., 2024).

Despite these vulnerabilities, research also reveals important sources of resilience among displaced women. Women often develop stronger social support networks during displacement compared to men (Al Zoubi, 2022; Shishehgar et al., 2024), which can provide crucial emotional and material support. While men's total working hours typically decrease during conflict, women show adaptation through increased agricultural activity (Ronzani et al., 2025), uncovering flexible labor allocation strategies. Women's lower direct exposure to combat violence, compared to men who may be targeted for recruitment or direct combat violence, can also result in fewer trauma-related psychological barriers to social integration (Justino, 2018).

Based on this evidence, we theorize that gender moderates conflict's impacts through multiple channels. Pre-existing gender norms create distinct vulnerabilities, making women particularly susceptible to certain types of conflict-related trauma and economic marginalization. However, women also develop unique coping strategies, especially through social support networks, that may buffer some negative effects. These competing mechanisms suggest complex gender differences in how conflict exposure shapes social well-being.

Hypothesis 4: The relationship between origin-country conflict exposure and post-displacement outcomes is moderated by gender, such that...

H4a: ...women exposed to higher conflict intensity show different levels of mental health compared to men with similar exposure levels.

H4b: ...the effects of conflict exposure on social well-being differ between men and women.

2.3.2 Conditions at the displacement location

The long-term effects of conflict exposure likely depend on the environments refugees encounter after displacement. Recent evidence posits that individual and household-level legacies of shocks are shaped by local and group-level conditions in the aftermath, including socio-political conditions, kinship networks, and agro-ecological conditions (Buhaug et al., 2021; Ronzani et al., 2025).

Social networks emerge as particularly crucial in displacement settings. Households fleeing conflict and violence tend to form distinct social networks during displacement which differ based on their conflict exposure (Thomas, 2024). Strong social networks can provide a sense of security and protection (Adhikari, 2013), while also facilitating crucial post-displacement support such as financial assistance, employment connections, and information sharing. The importance of these informal support systems cannot be overstated: existing studies show that informal networks may be more important than formal assistance in shaping refugee outcomes and ensuring protection (Landau and Duponchel, 2011).

However, this creates a challenging paradox: while social connections become more vital for survival and adaptation during displacement, the psychological trauma from conflict exposure may make these connections harder to establish and maintain (Mitchneck, Mayorova, and Regulska, 2009). This tension between the increased need for social support and the decreased capacity to build it represents a critical challenge for displaced populations. Camp and non-camp environments differ structurally in terms of refugees' networks and their formation, among many other dimensions. These differences in social environments may moderate how pre-displacement conflict exposure shapes long-term outcomes. This leads to our final hypothesis:

Hypothesis 5: The long-term effects of conflict exposure on social well-being vary across camp and non-camp environments.

3 Study Context

The Syrian refugee crisis represents one of the largest forced displacement situations in recent history, fundamentally reshaping the demographic and social landscape of the Middle East. Within this context, Jordan is a crucial host country, receiving approximately 710,000 refugees of various nationalities, with Syrians constituting the largest group at over 619,000 individuals (UNHCR, 2024). This large refugee population has integrated into Jordanian society in different ways, with the majority living in urban and rural communities, while others live in refugee camps, creating distinct opportunities and challenges for both refugees and host communities.

The Syrian refugee experience in Jordan must be understood within the broader regional context of displacement. Across host countries, Syrian refugees face substantial challenges in establishing stable lives and livelihoods and employment rates are often low compared to the host population, especially for women (Demirci and Kırdar, 2023). This pattern showcases the persistent barriers that refugees face in rebuilding their lives after displacement.

Among Syrian refugees in Jordan, there is substantial variation in their places of origin in Syria and their arrival dates in Jordan, which means that there are also great differences in the experiences of refugees before fleeing Syria. These differences allow us to empirically investigate how different forms and degrees of conflict exposure to conflict shape Syrian refugees' social well-being in Jordan.

3.1 The Syrian Civil War

The Syrian Civil War broke out in the context of broader regional upheaval following the Arab Spring movements across the Middle East and North Africa in late 2010. What began as protests in March 2011 rapidly escalated into a devastating civil conflict, resulting in the death of over 200,000 people and forcing approximately 12 million Syrians to flee their homes (Alshoubaki and Harris, 2018).

The evolution of the conflict was marked by distinct phases of escalation and

geographical spread, significantly influencing displacement patterns. By 2015, as the conflict intensified and conditions deteriorated further, many Syrians began undertaking perilous journeys across the Mediterranean, seeking asylum in Europe (Beauchamp, 2015). This expansion of refugee movements beyond neighboring countries reflected both the protracted nature of the conflict and the deteriorating conditions in initial host countries.

The intensity and geographical distribution of conflict across Syrian governorates reveal significant temporal and spatial variation in violence throughout the civil war. As illustrated in Figure 1, conflict patterns varied substantially across regions and time. Major urban centers like Aleppo and Damascus experienced intense periods of violence. In many governorates, such as Rural Damascus and Dar'a, rapid increases in conflict events preceded or coincided with increased refugee flows to Jordan. This pattern demonstrates that escalating violence often triggers displacement, though the relationship varies by region. Some governorates, like Tartous, experienced relatively limited conflict, while others like Idlib and Deir-ez-Zor saw sustained periods of violence with multiple peaks over several years.



Figure 1: Distribution of Conflicts per Syrian Governorate

Note: Conflict events based on UCDP data. Arrivals in Jordan per origin location based on UNHCR data.

3.2 Syrian refugees in Jordan

Prior to 2011, Syrian migration to neighboring countries like Jordan and Lebanon was primarily driven by routine purposes such as family visits, marriages, and commercial activities (Doraï, 2018; Zuntz, 2021). However, the outbreak of conflict dramatically transformed these migration patterns, leading to large-scale refugee movements. While Syrians have generally experienced smoother integration in Jordanian host communities due to shared language, religion, and socio-cultural ties, their connectivity with host communities remains limited (Tobin et al., 2021). This dynamic between integration and isolation highlights the unique challenges faced by Syrian refugees in Jordan's urban and rural settings.

The protracted nature of the Syrian conflict has reshaped family structures and social networks across the region. Family networks have emerged as critical mechanisms for facilitating mobility and establishing residency in Jordan, serving as both social support systems and practical resources for navigation of host country institutions. These networks have become particularly important given the structural marginalization of Syrian refugees in Jordan, where various types of residence permits have been granted but permanent local integration and nationality remain largely inaccessible (Tobin, Momani, and Al Yakoub, 2022). The dispersal of Syrian families throughout Jordan and neighboring countries has created intricate webs of support, with family networks proving crucial in developing and organizing mobility and residency units into and through Jordan (Tobin, Momani, and Al Yakoub, 2022). These transnational family connections often serve as vital lifelines for information, resources, and emotional support.

The economic integration of Syrian refugees in Jordan presents a nuanced picture that challenges common assumptions about refugee impacts. Contrary to widespread concerns about negative economic effects, studies have shown no significant adverse impacts on labor market outcomes. Research indicates that Jordanians living in areas with high refugee concentration have experienced similar labor market conditions to those in areas with fewer refugees (Fakih and Ibrahim, 2015; Fallah, Krafft, and Wahba, 2019). However, the refugee experience varies significantly across different Syrian communities, revealing important intersections between economic integration and social identity. Syrian Christian and Druze refugees living in urban centers, for instance, often face greater challenges, reporting higher levels of isolation, insecurity, and discrimination related to their religious identity (Eghdamian, 2017). Therefore, it is important to consider the geographical dimension when examining refugee integration outcomes.

4 Empirical Strategy

Understanding the causal impacts of pre-displacement conflict exposure among refugees faces significant data limitations as this requires high-quality data on refugee outcomes today and on their conflict exposure before displacement. To overcome these challenges, we draw on information on Syrian refugees' governorates of origin and their date of displacement. This information allows us to link representative refugee survey data from UNHCR Jordan with pre-displacement local conflict exposure in Syria from the Uppsala Conflict Data Program Georeferenced Event Dataset (henceforth UCDP). To estimate the causal link between local conflict exposure and social well-being as a refugee, we estimate ordinal linear regression models that include fixed effects for both the origin location in Syria, accounting for systematic time-invariant characteristics at the origin level.

4.1 Data Sources

We draw on information on Syrian refugees' governorates of origin in Syria and their date of displacement to link representative refugee survey data from UNHCR Jordan with pre-displacement local conflict exposure in Syria from UCDP as well as on local environmental and climate stress.

Survey Data. Our primary data source is the 2023 Vulnerability Assessment Framework (VAF) survey conducted by UNHCR in Jordan between September 2023 and January 2024. The VAF is a comprehensive assessment tool designed to survey refugee behaviors and welfare. The study sample includes 5,775 households. A summary of the sociodemographic characteristics of both the camp and the host samples is available in Table A.1.

The survey included both refugees in host communities and camps, and used a stratified random sampling approach to ensure representativeness. For host communities, Syrian refugees were sampled across all twelve governorates of Jordan. For camps, the survey covered residents of both the Zaatari and Azraq refugee camps. We provide a more detailed description of the survey and its sampling strategy in Appendix A.

Conflict Data. We utilize geo-referenced conflict data from the Uppsala Conflict Data Program (Sundberg and Melander, 2013) to measure exposure to conflict in Syrian governorates. To match the conflict data to refugees' places of origin, we first conduct a spatial joint between UCDP event data and Syrian administrative boundaries at the governorate level. This allows us to identify all conflict events that occurred in each Syrian governorate.

4.2 Variables

4.2.1 Dependent Variables

We study three dimensions of social well-being: life satisfaction, social trust, and access to social safety nets. Each measure is collected and categorized into three ordinal levels to facilitate systematic analysis. We show the distribution of these variables in Appendix A.2.

Life Satisfaction. We assess overall life satisfaction using the question "How satisfied are you with your life at the moment, all things considered?", based on a scale from 1 to 10. We recode these responses into three ordinal categories: low, medium, and high satisfaction.²

Social Trust. To measure social trust, we rely on the survey question "How much do you trust others?" on a scale from 1 to 10. We transform these responses into three ordinal categories: low, medium, and high trust.

²The grouping of the three dependent variables into three-level categories was done based on their original distribution. As Figure A.2 shows the responses are concentrated into three response groups for life satisfaction and social trust. Concerning social safety nets, Figure A.4 shows the original distribution of the variable. As we can see, the lack of a wide variance in the response makes it appropriate to group this variable into three categories as well.

Social Safety Networks. To evaluate access to social safety nets, we study respondents' answers to the following question: "How many relatives and friends would be able and willing to lend you 50 JOD or material to do the repairs?" We categorize responses into three groups: no one, one person, and multiple people.

4.2.2 Explanatory Variables

Conflict Variables. Using UCDP data spanning 1989 to 2023, we construct two measures of conflict exposure in refugees' Syrian governorates of origin before they arrive in Jordan, representing our main variables of interest. These measures capture two key dimensions: conflict events, measured by the cumulative number of violent events in their governorate of origin, and conflict fatalities, measured through the total number of deaths produced by conflict.³ All conflict measures are standardized to facilitate interpretation and comparison across different measures.

Environmental Stress. To capture refugees' exposure to environmental conditions before displacement, we used the Palmer Drought Severity Index (PDSI) to measure drought conditions in Syria. We defined drought as periods when the PDSI fell below -2 standard deviations (SD), indicating severe drought stress. We calculated drought exposure up to each individual's arrival month in Jordan, creating person-specific measures of pre-displacement environmental stress. A precise location mapping between administrative regions at the governorate level for environmental conditions, and refugee origin locations, ensured accurate geographic matching.⁴

Mental Health. We assess mental health using validated measures from the Washington Group on Disability Statistics, focusing on depressive symptoms. Our primary measure captures the frequency of depressive episodes on an ordinal scale ranging from 'never' to 'daily'.

³We also include temporal exposure to conflict, measured as the number of months each individual experienced conflict before displacement, as a control variable in our models.

⁴For further details on the calculation of these drought measures, see Appendix A.2.2.

Gender and Household Structure. We examine gender both at the individual and household levels. At the individual level, we consider the respondent's sex, whereas at the household level, we analyze household composition through a dependency ratio⁵, and household gender composition (female majority, balanced, or male majority).⁶ When examining heterogeneous effects by gender, we also include marital status as a control variable.

4.3 Estimation

Our empirical strategy aims to estimate the impact of conflict exposure on social well-being among Syrian refugees in Jordan. In addition to our core models examining direct effects, we also conduct mediation and heterogeneity analyses. The complete specifications for each of these extensions are detailed in Appendix B.

Main Specification. To examine the relationship between conflict exposure and social well-being (Hypothesis 1), we estimate ordered logistic regression models to account for the ordinal nature of our dependent variables.⁷ For each outcome Y_{ihgt} for individual i in household h from origin governorate g at time t, our baseline specification is:

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_j + \beta' \mathbf{C}_{gt} + \gamma' \mathbf{X}_i + \theta' \mathbf{H}_h + \mu_g + \delta_d)$$
(1)

where j represents the cut-off points in the ordinal models. \mathbf{C}_{gt} is a vector of our conflict measures: conflict intensity (measured by number of violent events) and severity (measured by conflict fatalities) in origin governorate g at time t, while also

⁵Calculated as the number of dependents (including children aged 0-17, elderly aged 60 and above, and working-age adults with work-affecting disabilities) divided by the number of potential earners (non-disabled adults aged 18-59)

⁶We classify households based on their adult (age 18+) members: households, where adult women outnumber adult men by more than one person, are classified as 'female majority', those where adult men outnumber adult women by more than one person are classified as 'male majority', and households with a difference of one or fewer adults are classified as 'balanced'.

⁷The coefficients in our models can be interpreted as the change in the log-odds of being in a higher category of the dependent variable for a one standard deviation increase in the conflict measure, holding other variables constant.

controlling for exposure duration of conflict (in months) in the governorate of origin.⁸ \mathbf{X}_i is a vector of individual-level covariates including the respondent's gender, age, and education level. \mathbf{H}_h is a vector of household-level covariates including the dependency ratio and household size. Origin location fixed effects μ_g account for time-invariant characteristics of governorate g, while destination fixed effects δ_d control for characteristics of the Jordanian governorate where refugees currently reside. We cluster standard errors at the origin governorate level to account for potential correlation in outcomes among refugees from the same Syrian locations.

Building on this baseline model, we extend our analysis in several directions to test our key hypotheses. For subsequent models, to test the robustness of our main specification, we include quadratic terms for each conflict measure to capture potential non-linear effects as suggested by our theoretical framework. We also estimate interaction models to capture potential compound effects with environmental stress (Hypothesis 2), as well as mediation models to asses whether these effects occur via mental health (Hypothesis 3). To test heterogeneous effects of conflict, we examine differential effects by respondents' gender and household composition (Hypothesis 4), and by camp and non-camp environments (Hypothesis 5), in order to understand potential amplification effects through multiple sources of vulnerability.

⁸All these variables are specific to each respondent, taking into account their governorate of origin in Syria and their arrival in Jordan.

5 Results

5.1 Main results

Using three social well-being outcomes (life satisfaction, social trust, and social safety nets), we find that different aspects of conflict exposure have divergent impacts on social well-being. As shown in Figure 2, exposure to conflict events does not have discernible impacts on social well-being. Across outcomes, the estimated coefficients are small in magnitude and not statistically significant. In contrast, exposure to conflict fatalities shows significant negative effects on both life satisfaction and access to social safety nets. A one-standard-deviation (1 SD) increase in conflict fatality exposure reduces the odds of higher life satisfaction by 6% and the odds of stronger social safety nets by 9%.⁹ However, this same exposure is associated with higher social trust, with a 1 SD increase corresponding to a 7% increase in the odds of higher trust.¹⁰ As visible in Figure 2, this positive effect on trust is statistically significant at the 90% confidence level.

These findings reveal the severe costs of conflict exposure on refugees' well-being and support systems. The increase in reported trust, while statistically significant, should not be interpreted as a beneficial outcome of conflict. Rather, as documented by Bauer et al. (2016), increased social trust often emerges as a coping mechanism in response to shared trauma and hardship. This pattern reflects how communities may draw closer together when facing extreme adversity, even as individual well-being suffers. All in all, these initial results highlight the importance of examining different dimensions of conflict exposure when studying refugee outcomes. While general conflict events appear to have a limited impact on social well-being, exposure to fatal violence fundamentally disrupts refugees' social lives. This distinction supports findings from Rohner, Thoenig, and Zilibotti (2013) on how violent conflict shapes trust, by showing that different aspects of conflict—from general instability to direct experiences of loss—affect social behavior through distinct channels of trauma and adaptation.

⁹Percentage changes in odds are calculated as $(e^{\beta} - 1) \times 100$ where β is the estimated coefficient.

¹⁰Based on the coefficient of 0.066 from Table C.2, calculated as $(e^{0.066} - 1) \times 100 = 6.8\%$.





Note: Full ordinal logistic models available in Table C.1 (life satisfaction), C.2 (social trust) and C.3 (social safety nets). All models control for months of exposure to conflict at the origin location, gender, age, education, household dependency ratio, and household size, and include fixed-effects of the origin location and Jordan governorate. C.I. 95% (thin lines) and 90% (thick lines).

5.1.1 Robustness checks

We conduct several robustness checks to validate our main findings. Overall, these checks strengthen our confidence in the core results while revealing additional nuances in how conflict shapes social outcomes. First, we estimated linear models (Section C.2.1) which largely confirm our baseline results.¹¹ In the full baseline specifications, conflict fatalities show consistent and significant negative effects across both life satisfaction and social safety nets, while maintaining a positive effect on social trust. Conflict events show positive but non-significant coefficients across all outcomes, while the conflict exposure measure itself shows varying but statistically non-significant coefficients across outcomes. The consistency of these findings across different model specifications adds credibility to our main conclusions about the distinct roles of conflict events versus fatalities.

Second, we explore non-linear relationships through quadratic specifications and

¹¹For these models, instead of using three categories for life satisfaction and social trust, we used their original 1-10 point scale. For social safety nets, given that the original variable is the number of people declared by respondents, we kept the three-category specification. We used linear models instead of ordinal linear models.

interactions between conflict events and fatalities (Section C.2.2). The results reveal more complex patterns than our main models: conflict events show positive quadratic effects on social trust and social safety nets, while conflict fatalities display significant quadratic effects across all outcomes—positive for life satisfaction and social trust, but negative for social safety nets. Importantly, the interaction terms between conflict events and fatalities show significant negative effects on social trust and social safety nets, pointing out that the combination of both types of conflict exposure may be particularly detrimental to these outcomes. While these non-linear specifications show that both conflict events and fatalities have varying effects at different levels of exposure, they reinforce our main finding that different dimensions of conflict have distinct and sometimes opposing effects on social well-being.

Finally, we test the sensitivity of our results to different time specifications by restricting our sample to refugees who left Syria between January 2012 and December 2013 (Section C.2.3). In this early-displacement subsample, conflict events have a significant positive effect on life satisfaction, but their effects on social trust and social safety nets become non-significant. For conflict fatalities, the negative effect on life satisfaction strengthens in magnitude, while the previously significant effects on social trust and social safety nets lose statistical significance. These differences between the early displacement sample and our main results could potentially imply that the relationship between conflict exposure and social outcomes may have evolved as the Syrian conflict developed, with the timing of displacement playing a crucial role in shaping these relationships. This temporal analysis, while highlighting some variations across displacement cohorts, ultimately reinforces the robustness of our key finding regarding the negative impact of conflict fatalities on life satisfaction.

5.2 The role of environmental stress before displacement

Testing Hypothesis 2, we examine how environmental stress before displacement affects the lasting impacts of conflict exposure on social well-being. Figure 3 shows coefficient estimates for conflict fatalities under extreme and non-extreme drought conditions, where extreme drought is defined as two standard deviations below the mean of the Palmer Drought Severity Index (PDSI), as laid out in Section 4.

Environmental stress significantly amplifies conflict's negative effects on social safety nets. When refugees experienced both conflict fatalities and extreme drought conditions before displacement, their ability to maintain social safety nets was substantially more impaired compared to those who faced conflict under non-extreme drought conditions. This interaction demonstrates that the combination of environmental and conflict-related stress creates particularly challenging conditions for maintaining social connections in the long term.



Figure 3: Effect of Conflict and Environmental Stress on Social Well-being

Notes: Coefficient estimates (log-odds) from ordinal logistic regression models with interaction terms by drought exposure level. Points represent coefficient estimates under non-extreme (blue) and extreme (red) drought conditions, where extreme drought is defined as two standard deviations below the mean of the Palmer Drought Severity Index (PDSI). Full models are available in Table C.9. All models control for months of exposure to conflict at the origin location, age, education, marital status, household dependency ratio, and household size, and include fixed-effects of the origin location. C.I. 95% (thin lines) and 90% (thick lines).

Nevertheless, this amplifying effect of drought appears specific to social networks. For both life satisfaction and social trust, the effects of conflict fatalities remain stable regardless of drought conditions, as shown by the overlapping confidence intervals in Figure 3. Notably, extreme drought exposure itself shows no significant direct effects on any social outcomes (Table C.9). These findings support emerging research on conflict-climate polycrises (Lawrence et al., 2024), demonstrating how environmental stress can exacerbate conflict's social impacts even without having direct effects. The results particularly emphasize the vulnerability of social support systems when refugees face multiple concurrent stressors before displacement.

5.3 The mediating role of mental health

Following our estimation strategy in Section 4.3, we conduct a mediation analysis to examine how mental health mediates the relationship between conflict exposure and social outcomes (Hypothesis 3). Figure 4 presents a graphical representation of these pathways. We find that conflict fatalities significantly increase depressive symptoms, which in turn strongly affect all measures of social well-being.

Figure 4: Graphical representation of mental health's mediation effect



Note: Direct effects control for gender, age, education, dependency ratio, and household size. Indirect effects show how conflict fatalities influence social outcomes through depression. * p <0.1, ** p <0.05, *** p <0.01.

Table 1 decomposes these relationships into direct effects (impact of conflict controlling for depression) and indirect effects (impact operating through depression). For life satisfaction, we estimate that 76% of the total effect of fatality exposure is explained by the channel through changes (increases) in depressive symptoms.¹²

¹²The proportion mediated is calculated as the absolute value of the indirect effect divided by the total effect (direct + indirect), multiplied by 100. For conflict events on life satisfaction: $0.056/(0.056 + 0.009) \times 100 = 86\%$. For conflict fatalities: $-0.102/(-0.102 + -0.033) \times 100 = 76\%$.

	Direct Effect	Indirect Effect	Total Effect	% Mediated	P-value (Indirect)
Life Satisfaction					
Conflict Events	0.009	0.056	0.065	86.2%	0.106
	(0.037)	(0.035)			
Conflict Fatalities	-0.033	-0.102	-0.135	75.6%	0.000
	(0.019)	(0.027)			
Social Trust					
Conflict Events	0.045	0.026	0.071	36.6%	0.116
	(0.053)	(0.017)			
Conflict Fatalities	0.082	-0.048	0.034		0.001
	(0.034)	(0.014)			
Social Safety Nets					
Conflict Events	0.054	0.015	0.069	21.7%	0.194
	(0.043)	(0.012)			
Conflict Fatalities	-0.081	-0.027	-0.108	25.0%	0.058
	(0.029)	(0.014)			

Table 1: Direct and Indirect Effects of Conflict through Depression

Note: Standard errors in parentheses. Direct effects from Table C.10. Total effect is the sum of direct and indirect effects. Percent mediated is calculated as $|Indirect Total| \times 100$. For conflict fatalities and social trust, percent mediated is not reported since direct and indirect effects work in opposing directions (positive direct effect of 0.082 and negative indirect effect of -0.048), making the proportion mediated not meaningfully interpretable. All conflict variables are standardized.

Another interesting pattern emerges for social trust. While conflict fatalities have a positive direct effect (0.082), there is a negative indirect impact channel through depression (-0.048). These results align with existing literature documenting both positive and negative impacts of conflict exposure on social trust: the positive effects are consistent with research showing how shared adversity can strengthen community bonds and foster collective coping mechanisms (Bauer et al., 2016). However, the negative indirect effect through depression emphasizes that there are also negative impact pathways, such as psychological trauma, which can erode trust. For social safety nets, depression channels have a weaker role: they mediate about 22% of the effect of conflict events¹³ and 25% for conflict fatalities.

¹³For social safety nets: $|0.015/(0.015 + 0.054)| \times 100 = 22\%$.

These findings highlight how conflict exposure can affect social outcomes through distinct psychological pathways. While we focus specifically on depressive symptoms rather than broader mental health measures, our results demonstrate that psychological distress is a key mechanism through which conflict exposure shapes long-term social well-being, particularly for life satisfaction. The strong mediating effect of depressive symptoms aligns with research showing how trauma-related psychological impacts can persist long after displacement (Bogic, Njoku, and Priebe, 2015) and affect multiple domains of refugees' lives (Pozuelo et al., 2023).

5.4 Heterogeneity by gender

Testing Hypothesis 4, we examine if conflict exposure shapes social well-being differently for refugee men and women. Figure 5 shows coefficient estimates for conflict fatalities on our three social outcomes, separately for men and women. While our theoretical framework posited substantial gender differences due to distinct vulnerabilities and coping mechanisms, we find relatively limited evidence of differential impacts at the individual level.



Figure 5: Gender-Specific Effects of Conflict on Social Well-being

Full models are available in Table C.12. All models control for months of exposure to conflict at the origin location, age, education, marital status, household dependency ratio, and household size, and include fixed-effects of the origin location and Jordan governorate. C.I. 95% (thin lines) and 90% (thick lines).

The similarity in effects across genders is particularly striking given the extensive

literature documenting gender-specific conflict experiences. One interpretation is that while men and women experience conflict differently during displacement (Kondylis, 2010; Stojetz and Brück, 2023a), these differences may attenuate over time as refugees adapt to their new environment. This interpretation aligns with research showing that both men and women develop coping strategies, albeit different ones (Al Zoubi, 2022; Shishehgar et al., 2024).

However, our analysis of household adult gender composition reveals more substantial heterogeneity. As shown in Figure 6, we estimate how these household compositions moderate the effects of conflict exposure relative to balanced households. Individuals living in female-majority households experience significantly worse effects of conflict fatalities on life satisfaction compared to gender-balanced households. This finding supports research documenting women's particular vulnerability to conflict trauma (Goodkind et al., 2022; Kheirallah et al., 2022). When adult women constitute the majority of a household, their collective experience of conflict-related stress may amplify negative effects on well-being. Conversely, individuals from male-majority households show significantly worse effects of conflict fatalities on social safety nets, albeit only at 90% significance. This result aligns with evidence that women often develop stronger social support networks during displacement (Al Zoubi, 2022), indicating that female presence in households may help maintain social connections despite conflict exposure. The reduced access to social safety nets in male-majority households may reflect men's typically lower engagement in social support networks (Shishehgar et al., 2024).



Figure 6: Effects of conflict fatalities by household gender composition

Note: Reference category is balanced households (households where the difference between adult men and women is one or less). Full models are available in Table C.12. All models control for months of exposure to conflict at the origin location, age, education, marital status, household dependency ratio, and household size, and include fixed-effects of the origin location and Jordan governorate. C.I. 95% (thin lines) and 90% (thick lines).

For social trust, while we observe a positive baseline effect of conflict fatalities, there are no significant differences across household compositions. This indicates that changes in trust levels following conflict exposure operate similarly regardless of household gender structure, perhaps reflecting community-level rather than household-level processes.

These findings highlight how gender shapes conflict's lasting effects primarily through collective household dynamics rather than individual-level differences. This pattern emphasizes the importance of examining gender both at individual and household levels when studying refugee outcomes, as posited by intersectionality theory (Bastia, 2014). The results also demonstrate how adult gender composition interacts with household structure to influence both vulnerability to conflict trauma and capacity for post-conflict adaptation.

5.4.1 Gender and mental health

In Hypothesis 4a, we posited that women exposed to higher conflict intensity are expected to show different levels of mental health compared to men with similar exposure levels. To test this, we estimated additional models with separated samples by gender, to assess whether the mediating effect of depression is different for men and women. Tables C.14 and C.15 present these results.

Our findings reveal substantial gender differences in how conflict affects mental health and related outcomes. When examining conflict events, women living in areas with more conflict events show significantly increased depression, an effect that does not happen for men. This points to opposing psychological responses to conflict events between genders. For conflict fatalities, we again observe contrasting effects: men show increased depression with higher fatalities, while women do not.

These gender differences extend to social outcomes as well. For women, higher conflict events are associated with increased social trust but decreased life satisfaction and social safety nets. In contrast, all three indicators of social well-being for men appear unaffected by conflict events, while fatalities negatively impact their life satisfaction and sense of social safety nets. The mediating role of depression also appears stronger for women than men across all outcome variables, with depression having a particularly strong negative association with women's life satisfaction compared to men's. Age patterns are also notable, with older women showing more pronounced increases in depression than older men: women aged 50-59 show the highest increase in depression compared to the younger reference group, while for men, this increase is less pronounced.

These results provide strong support for Hypothesis 4a, demonstrating that conflict events and fatalities affect men and women differently across multiple mental health and social outcomes, with women showing more pronounced and often contrasting patterns of response to different measures of conflict intensity.

5.5 Camp versus non-camp environments

Testing Hypothesis 5, we examine whether conflict's effects on social well-being differ between refugees living in camps and those in host communities. Figure 7 shows the estimated effects of conflict fatalities on our three social outcomes, with separate estimates for camp residents and non-camp residents—i.e., those respondents living in host communities. The evidence points out that the impacts of conflict fatalities on social well-being differ across refugees who live in camps (in blue) and those who live in
host communities, that is, non-camp environments (in red). For life satisfaction, we find that non-camp environments are associated with less life satisfaction. Refugees' social well-being is negatively affected in both camps and host communities. The negative effect is weaker in non-camp environments but the group-difference is not statistically significant. We observe a similar pattern for the average strength of refugee households' social safety net: non-camp environments are again associated with worse outcomes and non-camp environments appear to mitigate the negative impacts of fatality exposure on social nets: the negative impacts these are particularly strong among refugees in camp environments and the difference between groups is statistically significant.

Thus, these results reveal an interesting insight: non-camp environments as such as associated with worse social well-being but they can better mitigate the negative legacies of exposure to conflict violence. A potential explanation for this pattern is that refugees in camps may interact more with other refugees, many of which were exposed to trauma, which in turn may reinforce negative psychological impacts. This pattern further motivates the potentially important mechanism of mental health, which we will examine further below. Social trust is higher in non-camp environments but the weakly positive impacts of fatality exposure do not differ significantly across the two groups.



Figure 7: Effect of Conflict on Camp and Non-Camp Refugees

Note: Coefficient estimates (log-odds) from ordinal logistic regression models with interaction terms by location type (camp vs. non-camp). Points represent coefficient estimates: for camp residents (blue), these are the base effects of conflict measures; for non-camp residents (red), these are the combined effects (base + interaction terms). Full models are available in Table C.16. All models control for months of exposure to conflict at the origin location, age, education, marital status, household dependency ratio, household size, and include fixed-effects of the origin location. C.I. 95% (thin lines) and 90% (thick lines).

Therefore, we find that living in camp settings is itself associated with lower life satisfaction and weaker social safety nets compared to non-camp residents. These findings indicate that the impact of conflict exposure manifests differently depending on the refugees' current living situation, with camp environments possibly intensifying the negative effects of trauma exposure. The institutional and social context of displacement thus appears to play an important role in how past conflict experiences shape current social outcomes.

Household gender balance in camp and non-camp locations. Building on our examination of camp versus non-camp environments, we further investigate whether the effects of conflict fatalities vary by household gender composition across these different settings. Our previous analyses showed that, overall, camp environments amplify the negative effects of conflict fatalities on social well-being. To better understand how this pattern interacts with household gender composition, we conducted a focused analysis of female-majority households, which may be particularly vulnerable to conflict-related trauma. Figure 8 presents the effects of conflict fatalities on female-majority households in both camp and non-camp environments. For life satisfaction, we observe negative point estimates in both settings, suggesting that female-majority households experience adverse effects from conflict fatalities regardless of their displacement environment. While these estimates do not reach statistical significance at conventional levels—likely due to the reduced sample size when focusing only on female-majority households—the consistency of the negative direction across environments is notable. This contrasts with our findings for the overall sample, where negative effects were concentrated primarily in camp settings. Across all three outcomes, we do not observe statistically significant differences between camp and non-camp environments for female-majority households.





Note: Coefficient estimates (log-odds) from ordinal logistic regression models with interaction terms by conflict fatalities and location type, only considering female majority households. Full models available in table C.17. All models control for months of exposure to conflict at the origin location, age, education, ma rital status, household dependency ratio, household size, and include fixed-effects of the origin location. C.I. 95% (thin lines) and 90% (thick lines).

These findings suggest that while camp environments generally amplify the negative effects of conflict exposure for the overall refugee population, female-majority households may experience vulnerability that transcends the institutional context of displacement.

6 Conclusion

This paper studies social well-being among refugees. Thanks to unique data on Syrian refugees in Jordan, tracing their places of origin and time of arrival in Jordan, we can examine how different dimensions of conflict exposure before displacement affect long-term outcomes during displacement. While the number of conflict events experienced in Syria has no systematic long-term impact on refugees' social well-being, exposure to conflict fatalities has pronounced negative effects on life satisfaction and social safety nets. These findings underline the importance of measuring and analyzing conflict exposure along multiple dimensions when studying refugee outcomes.

We also document a dangerous long-term shadow of past interaction between armed conflict and environmental stress: the highly adverse impacts of exposure to conflict fatalities on social support networks in the long term are strongest when refugees had also faced extreme drought before displacement. This finding aligns with emerging research on conflict-climate polycrises (Lawrence et al., 2024), demonstrating how environmental pressures can compound the challenges refugees face in displacement contexts (Czaika and Reinprecht, 2022). While extreme drought exposure alone has no significant direct effects on social outcomes, its interaction with conflict fatalities emphasizes how multiple sources of pre-displacement stress can create lasting vulnerabilities, even many years after reaching safety.

We show that mental health is an important impact pathway linking exposure to violence (fatalities) and long-term social well-being. For life satisfaction, in particular, the depression channel accounts for 76% of the total negative effect of fatality exposure. For social trust, we show that in addition to channels underpinning the overall positive long-term impact of fatality exposure, there is also a negative impact channel via depression. Taken together, these results make evident the psychological risks trauma exposure can create, showcasing its negative social implications.

We do not find evidence that the impacts of conflict exposure on long-term social well-being differ strongly between male and female refugees. While seemingly at odds with extensive literature documenting gendered conflict impacts at the individual level (Brück et al., 2024), our results may suggest that gender differences can attenuate over time as refugees adapt to their new environment. By contrast, we show that the impacts of conflict fatalities are significantly moderated by the gender composition of households. Refugees in female-majority households experience particularly severe negative effects on life satisfaction, while refugees in male-majority households show greater deterioration in social safety networks.

In terms of refugees' local environment, we demonstrate that non-camp environments are associated with worse social well-being but, at the same time, they can better mitigate the negative impacts of exposure to conflict. This pattern may be a result of refugees in camps having better access to services supporting their well-being but interacting more with other refugees, which may reinforce adverse legacies of trauma exposure.

Taken together, these findings have important implications for policy and programming at the intersection of humanitarian assistance and development. Recent evaluations show mixed results of refugee support interventions: while some programs successfully strengthen social connections, particularly for Syrian girls in Jordanian communities (Hamad et al., 2025), others have produced unintended negative effects on psychological well-being and social cohesion (Tamim et al., 2025). Our research helps to explain these mixed outcomes by showing how pre-displacement experiences shape different dimensions of social well-being.

Specifically, our findings suggest five key policy priorities. First, it is important to recognize long-term trauma among refugees. Our findings emphasize that the effects of war can last for many years, requiring sustained support rather than short-term aid. Second, given that depressive symptoms mediate a significant portion of conflict fatalities' negative effect on life satisfaction, mental health services should be central to refugee support programs. Third, support systems should be gender-sensitive and tailored to household composition. In our case, refugees in female-majority households have different needs as refugees in male-majority households. Fourth, improving social integration opportunities holds great potential. Specifically, enhancing such opportunities for camp residents may help to better mitigate the adverse impacts of traumatic experiences. Fifth, addressing polycrises is critically important. Climate change and other stressors can intensify the challenges created by forced displacement, necessitating a more holistic approach that responds to refugees' specific vulnerabilities and experiences.

Two key limitations warrant consideration when interpreting our results. First, our conflict exposure measures rely on governorate-level data, which may mask important variations in individual experiences of violence within governorates. While this approach provides an objective measure of local conflict conditions, it cannot capture personal trauma or specific household-level exposure. Second, the cross-sectional nature of our data limits our ability to track how social outcomes evolve over time during and after displacement, particularly given evidence that adaptation patterns may change substantially across different phases of displacement (Hazer and Gredebäck, 2023). Panel data would help to reveal further patterns.

Our study suggests several directions for future research. First, examining how social well-being influences economic integration could enhance our understanding of refugees' long-term outcomes. Given our findings on how conflict shapes social networks and trust, understanding how these social dimensions affect economic participation and success is crucial for refugee integration. Second, investigating how various support interventions might buffer the negative effects of conflict fatalities could provide valuable evidence for program design, something that is particularly important given our finding that depressive symptoms mediate a large portion of conflict's impacts. Finally, collecting data either on exact origin locations or on self-reported conflict experiences could help unpack the mechanisms through which exposure shapes social outcomes, addressing a key limitation of our governorate-level conflict measures and potentially revealing individual-level variation in trauma exposure and coping strategies.

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Supplementary Information

Carrying the Past with you Across the Border: Long-term Effects of Conflict and Environmental Stress Exposure in Syria on the Social Well-being of Refugees in Jordan

June, 2025

A	VAF Survey of Syrian Refugees in Jordan	2
	A.1 Descriptive Statistics	5
	A.2 Distribution of Dependent Variables	6
В	Estimation	10
С	Statistical Models	13
	C.1 Baseline Models	13
	C.2 Robustness Analyses	17
	C.3 Climate Shocks	22
	C.4 Mental Health Mediation	23
	C.5 Gender Heterogeneity	26
	C.6 Camp and Non-Camp	30

A VAF Survey of Syrian Refugees in Jordan

In 2023, the Vulnerability Assessment Framework (VAF) survey was conducted in both host communities (UNHCR, 2024b) and refugee camps (UNHCR, 2024a) in Jordan to assess vulnerabilities among refugee populations. Data collection in host communities occurred from September to November 2023, using a stratified random sampling approach. Refugee households across all governorates were randomly selected from UNHCR's ProGres database, focusing on Syrians, Iraqis, and other nationalities. Sampling accounted for geographic and nationality-based stratification to ensure representativeness while avoiding small sample sizes. Both surveys introduced a new module on climate change impacts to understand its effects on refugee livelihoods better.

Sampling. The methods used for sampling in host communities and camps differed in key ways to account for the unique contexts of each population. In the host community sample, a stratified random sampling approach was employed to ensure representativeness across diverse refugee groups. Stratification was based on two variables: nationality and geographic location. Syrian refugees were divided into subgroups according to the twelve governorates in which they resided, while non-Syrian refugees (Iraqi and other nationalities) were grouped by their location in either Amman or other regions (north, central, or south). This approach avoided small sample sizes in less populated areas by grouping governorates for non-Syrians. A random sampling and oversampling strategy was then applied to select cases from the UNHCR ProGres registration database, which includes refugees living in urban, peri-urban, and rural settings but excludes camp residents.

In contrast, the camp sample used a proportionate-to-size random sampling method to ensure that the selected households represented the population of each camp. The sampling included all villages in Azraq and districts in Zaatari camps, which are distinctly structured and administratively managed. The sample was drawn exclusively from the camp population recorded in the ProGres database, with no need for geographic stratification since the camps are self-contained units.



Figure A.1: Distribution of Survey Respondents

Note: Distribution of survey respondents based on their origin location in Syria (gray), and their destination location in Jordan (light blue). Zaatari and Azraq camps in Jordan are marked in red.

Unit of Analysis. In the host community sample, the survey design accounted for the complex living arrangements often observed outside camps. Units of analysis included

cases (registration groups), nuclear families, households, and sharing groups. Sharing groups, which consist of individuals sharing resources and expenses, were particularly relevant in host communities to reflect living arrangements such as multiple families cohabitating to reduce costs.

In the camp sample, sharing groups were rare due to the structured living conditions in camps, where families and households are more clearly defined. The primary units of analysis in the camps were cases, families, and households, with a simpler delineation compared to host communities.

Context-specific Survey Design. The host community survey captured vulnerabilities across a broader geographic and social context, with modules tailored to urban, peri-urban, and rural settings. These modules were designed to address issues such as health, education, livelihoods, income, and cash assistance at the appropriate unit level, reflecting the diversity of living conditions.

The camp survey, on the other hand, focused on vulnerabilities specific to the structured environment of the camps. The questionnaire was adapted to reflect the standardized living arrangements and services available, such as free healthcare and education, cash-based assistance, and access to formal and informal marketplaces. The structured nature of camps allowed for more straightforward data collection and analysis compared to the varied settings in host communities.

A.1 Descriptive Statistics

	Camp	Host
Sample Size		
Num.Obs.	1489	4266
Household Size		
Household Size (Mean)	6.05	5.21
Household Size (SD)	2.66	2.48
Household Size (Min)	1.00	1.00
Household Size (Max)	21.00	19.00
Age Distribution $(\%)$		
18-24	9.60	8.70
25-49	69.58	67.16
50-59 60 t	$13.10 \\ 7.66$	13.90
	7.00	9.00
Gender Distribution (%)	04.11	95 OF
Female	$ \begin{array}{c} 24.11 \\ 72.24 \end{array} $	25.95 70.27
	10.04	10.57
Marital Status (%)	1 75	4 40
Single	1.70	$\begin{array}{r} 4.48 \\ 77.02 \end{array}$
Other (Divorced Engaged Separated Widower)	10.22	14 60
Education (97)	10.21	14.00
Never Attended School	0.13	9.56
Attended School	88 25	$\frac{9.50}{82.21}$
Aminal Davied (97)	00.20	02.21
Pro-Crisis	0.07	2 48
Crisis Onset	58.90	79.68
Peak Displacement	39.62	14.09
Work Income		
Work Income (Mean)	45.22	117.86
Work Income (SD)	79.52	133.72
Work Income (Min)	0.00	0.00
Work Income (Max)	450.00	800.00
Total Income		
Total Income (Mean)	155.91	200.66
Total Income (SD)	112.42	148.87
Total Income (Min)	0.00	0.00
Total Income (Max)	660.00	960.00

 Table A.1: Demographics Summary

Note: Income in Jordanian dinar (JOD). As a reference, 100 JOD equates to 140 USD.

A.2 Distribution of Dependent Variables



Figure A.2: Distribution of Life Satisfaction and Social Trust

Note: Life satisfaction is based on the question How satisfied are you with your life at the moment, all things considered?" with 1 = completely dissatisfied and 10 = completely satisfied. Social trust is based on the question "How much do you trust others?" with 1 = cannot be trusted at all and 10 = all people can be trusted.



Figure A.3: Distribution of Social Safety Nets

Note: Social safety nets variable is captured through the question "How many relatives and friends would be willing to lend to you 50 JOD or material to do repairs?".





Note: Social safety nets variable is captured through the question "How many relatives and friends would be willing to lend to you 50 JOD or material to do repairs?".

A.2.1 Mental Health





Note: Frequency of depressive symptoms is captured through the question "How often do you feel depressed?"

A.2.2 Climate Data

To measure climate-related stress in Syria, we construct standardized measures of drought exposure using the Palmer Drought Severity Index (PDSI) obtained from the TerraClimate dataset (Abatzoglou et al., 2018). Figure A.6 shows the correlation between key climate and conflict variables. The PDSI and Enhanced Vegetation Index (EVI) show a moderate positive correlation (0.43), while both have minimal correlation with conflict measures. We focus on PDSI as our primary measure since it provides a more comprehensive assessment of drought conditions by integrating precipitation, temperature, and soil moisture dynamics.



Figure A.6: Correlation Conflict and Climate Variables

Our measurement approach consists of three key steps:

- 1. Geographic Matching: We create a precise location mapping between administrative regions in the climate dataset and refugee origin locations to ensure accurate attribution of climate conditions to individual displacement histories.
- 2. Extreme Drought Definition: We define extreme drought conditions as months where PDSI falls below -2, capturing periods of severe water stress. For each individual, we calculate the total number of extreme drought months experienced before their arrival in Jordan.
- 3. Standardization: The extreme drought measure is standardized to facilitate interpretation and comparison with conflict measures in our interaction models.

Figure A.7 presents the distribution of drought months experienced by refugees before their displacement. The distribution reveals substantial variation in pre-displacement climate stress, with most refugees experiencing between 30-60 months of drought conditions, and notable peaks around 40 and 60 months.



Figure A.7: Months of Drought Exposure in Syria

This standardized extreme drought measure allows us to examine how severe climate stress modifies the relationship between conflict exposure and social outcomes. To estimate these interaction effects, shown in Figure 3, we calculate combined coefficients for conflict impacts under both non-extreme and extreme drought conditions (defined as 2 standard deviations above the mean drought exposure).

B Estimation

This section presents the complete specifications used to test our hypotheses regarding the relationship between conflict exposure and refugee social well-being. Building on the baseline model presented in Section 4.3, we detail here the full set of empirical approaches used to examine: (1) the distinct roles of conflict events and fatalities, (2) the interaction between conflict exposure and economic shocks, (3) the mediating role of mental health, and (4) gender-specific effects. Each specification maintains our core controls and fixed effects structure while incorporating additional terms to capture these specific dimensions of interest.

Conflict Duration and Intensity. To examine how different dimensions of conflict exposure affect outcomes (Hypothesis 1), we incorporate both cumulative exposure to conflict events until arrival in Jordan and the intensity of violence as measured by fatalities:

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_j + \beta_1 Conflict_{gt} + \beta_2 Fatalities_{gt} + \beta_3 (Conflict_{gt} \times Fatalities_{gt}) + \gamma' \mathbf{X}_i + \theta' \mathbf{H}_h + \mu_a)$$

$$(2)$$

where $Conflict_{gt}$ measures the cumulative number of conflict events experienced before arrival in Jordan, and $Fatalities_{gt}$ captures the number of conflict-related deaths in the origin governorate. The interaction term allows us to test whether the impact of greater conflict exposure varies with conflict intensity. To capture potential non-linear effects introduced by our theoretical framework, we also estimate specifications including quadratic terms:

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_j + \beta_1 Conflict_{gt} + \beta_2 Conflict_{gt}^2 + \beta_3 Fatalities_{gt} + \beta_4 Fatalities_{gt}^2 + \beta_5 (Conflict_{gt} \times Fatalities_{gt}) +$$
(3)
$$\gamma' \mathbf{X}_i + \theta' \mathbf{H}_h + \mu_g)$$

Multiple Shock Interactions. To understand how conflict exposure interacts with other challenges that refugees face (Hypothesis 2), we examine the interaction between our conflict measures and extreme drought exposure. We measure extreme drought exposure as the total number of months before arrival in Jordan where PDSI fell below -2 in the refugee's origin location, standardized for interpretation:

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_j + \beta_1 Conflict_{gt} + \beta_2 Fatalities_{gt} + \beta_3 ExtrDrought_{gt} + \beta_4 (Conflict_{gt} \times ExtrDrought_{gt}) + \beta_5 (Fatalities_{gt} \times ExtrDrought_{gt}) + (4)$$
$$\gamma' \mathbf{X}_i + \theta' \mathbf{H}h + \mu_g)$$

where $ExtrDrought_{gt}$ represents the standardized count of extreme drought months experienced in governorate g up to time t of arrival in Jordan. The interaction terms β_4 and β_5 capture whether the impact of conflict exposure (both cumulative events and fatalities) differs based on the duration of extreme drought exposure before displacement. This specification allows us to test whether prolonged exposure to severe drought conditions amplifies or buffers the effects of conflict exposure on social well-being. The standardization of the drought measure enables direct comparison of interaction magnitudes across our conflict measures.

Mental Health Mediation. To investigate the mediating role of mental health (Hypothesis 3), we examine depression as a key psychological mechanism, using the measure of frequency of depressive episodes. Given the ordinal nature of both our mediator and outcome variables, we employ an ordered logistic mediation framework, following Imai, Keele, and Tingley (2010) and Winship and Mare (1984) in calculating mediation effects for ordered logistic models.

$$P(Depression_{ihgt} > k) = logit^{-1}(\alpha_1 + \beta_1 \mathbf{C}_{gt} + \gamma_1 \mathbf{X}_i + \theta_1 \mathbf{H}_h + \mu_g + \tau_t)$$
(5)

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_2 + \beta_2 \mathbf{C}gt + \beta_3 Depression_{ihgt} + \gamma_2 \mathbf{X}_i + \theta_2 \mathbf{H}_h + \mu_g)$$
(6)

where $Depression_{ihgt}$ represents the frequency of depressive symptoms, and k represents

the cutpoints in the ordinal depression measures. The total effect of conflict exposure can be decomposed into its direct effect on social well-being (β_2) and its indirect effect operating through depression ($\beta_1 \times \beta_3$).

Gender Heterogeneity. To examine whether conflict exposure affects men and women differently (Hypothesis 4a), we modify our baseline specification to include interactions between gender and conflict measures:

$$P(Y_{ihgt} > j) = logit^{-1}(\alpha_j + \beta_1 \mathbf{C}gt + \beta_2 Female_i + \beta_3 (\mathbf{C}gt \times Female_i) + \gamma' \mathbf{X}_i + \theta' \mathbf{H}_h + \mu_q)$$
(7)

where $Female_i$ is a binary indicator for gender, and β_3 captures how the effect of conflict exposure differs for women relative to men. The vector \mathbf{X}_i now excludes the gender dummy since it enters separately in the interaction term.

To fully understand the gender-specific pathways (Hypothesis 4b), we also estimate our depression mediation model separately for men and women:

$$P(Depression_{ihgt} > k | Gender_i = g) =$$

$$logit^{-1}(\alpha_{1g} + \beta_{1g}\mathbf{C}gt + \gamma 1g\mathbf{X}i + \theta 1g\mathbf{H}_h + \mu_g)$$
(8)

$$P(Y_{ihgt} > j | Gender_i = g) =$$

$$logit^{-1}(\alpha_{2g} + \beta_{2g} \mathbf{C}gt + \beta_{3g} Depression_{ihgt} + \gamma_{2g} \mathbf{X}i + \theta_{2g} \mathbf{H}_h + \mu_g)$$
(9)

where $g \in female, male$ indicates the gender-specific subsamples. This split-sample approach allows all coefficients to vary by gender, providing a more flexible specification than interaction terms alone. We can then compare the direct effects of conflict (β_{2g}) and the indirect effects through depression $(\beta_{1g} \times \beta_{3g})$ across gender.

C Statistical Models

C.1 Baseline Models

Our empirical analysis begins with a series of progressively complex specifications to establish a robust baseline model for examining the relationship between conflict exposure and refugee outcomes. In Tables C.1, C.2, C.3, the null model (Model 1) includes only our key conflict exposure measures: duration of exposure in months, total number of conflict events, and total conflict-related deaths, all standardized. Model 2 adds location fixed effects at the Syrian governorate level to account for time-invariant characteristics of origin locations that might influence both conflict exposure and outcomes. Model 3 introduces individual-level controls including gender, age, and education attendance to account for demographic characteristics that may affect post-displacement outcomes independently of conflict exposure. Our full baseline specification (Model 4) adds household-level controls including dependency ratio and household size, capturing family structure characteristics that might influence both displacement decisions and subsequent outcomes. Throughout all specifications, standard errors are clustered at the Syrian governorate level to account for potential correlation in outcomes among individuals from the same origin location. This progressive build-up allows us to assess the stability of our conflict exposure coefficients across specifications while controlling for potentially confounding factors at different levels.

	Null Model	Governorate FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	0.014	0.392	0.403	0.468
	(0.012)	(0.318)	(0.325)	(0.307)
Conflict Events (std.)	0.035	0.000	0.028	0.018
	(0.034)	(0.042)	(0.044)	(0.041)
Conflict Fatalities (std.)	-0.027	-0.035	-0.056^{***}	-0.061^{***}
	(0.032)	(0.025)	(0.021)	(0.021)
Gender: Female			-0.031	0.008
			(0.070)	(0.061)
Age (Reference: $18 - 24$)				
25-49			0.020	0.023
			(0.113)	(0.099)
50-59			0.217	0.161
			(0.141)	(0.120)
60+			0.320*	0.396**
			(0.165)	(0.171)
Education: Attended School			-0.066	-0.069
			(0.070)	(0.072)
Household Variables				
Dependency Ratio				-0.094^{***}
				(0.013)
Household Size				0.069^{***}
				(0.015)
Dependent Variable Cutpoints				
Low—Medium	-0.558^{***}	-0.897^{***}	-1.051^{***}	-0.897^{***}
	(0.030)	(0.128)	(0.173)	(0.163)
Medium—High	0.818***	0.489***	0.345**	0.510^{***}
	(0.023)	(0.131)	(0.162)	(0.145)
Syria Governorate FE		\checkmark	\checkmark	\checkmark
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5562	5562	5183	5183
AIC	12201.4	12196.5	11358.2	11311.1
BIC	12234.5	12395.2	11587.6	11553.5
RMSE	1.80	1.80	1.80	1.80

Table C.1: Ordinal Logistic Regression Models for Life Satisfaction

	Null Model	Governorate FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	-0.003	-0.193	-0.230	-0.223
	(0.020)	(0.424)	(0.424)	(0.428)
Conflict Events (std.)	0.020	0.031	0.055	0.053
	(0.031)	(0.063)	(0.056)	(0.056)
Conflict Fatalities (std.)	0.018	0.076^{**}	0.067^{*}	0.066^{*}
	(0.023)	(0.034)	(0.036)	(0.037)
Gender: Female			-0.197^{***}	-0.187^{***}
			(0.048)	(0.050)
Age (Reference: $18 - 24$)				
25 - 49			0.072	0.066
			(0.147)	(0.144)
50 - 59			0.339**	0.329**
			(0.160)	(0.162)
60+			0.224	0.232
			(0.151)	(0.144)
Education: Attended School			-0.063	-0.063
			(0.079)	(0.079)
Household Variables				
Dependency Ratio				-0.010
				(0.016)
Household Size				0.012
				(0.016)
Dependent Variable Cutpoints				
Low—Medium	-0.050	-0.742^{***}	-0.743^{**}	-0.699^{**}
	(0.034)	(0.210)	(0.289)	(0.302)
Medium—High	1.308^{***}	0.629***	0.642^{**}	0.687^{**}
	(0.018)	(0.224)	(0.303)	(0.319)
Syria Governorate FE		\checkmark	\checkmark	\checkmark
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5562	5562	5183	5183
AIC	11584.2	11568.2	10746.6	10749.4
BIC	11617.3	11766.9	10976.0	10991.9
RMSE	1.60	1.61	1.60	1.60

Table C.2: Ordinal Logistic Regression Models for Social Trust

	Null Model	Location FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	-0.012	0.196	0.213	0.235
	(0.044)	(0.280)	(0.245)	(0.247)
Conflict Events (std.)	-0.008	0.045	0.059	0.058
	(0.037)	(0.038)	(0.042)	(0.042)
Conflict Fatalities (std.)	0.062	-0.075^{***}	-0.088^{***}	-0.092^{***}
	(0.049)	(0.028)	(0.028)	(0.029)
Gender: Female			-0.264^{***}	-0.248^{***}
			(0.062)	(0.065)
Age (Reference: $18 - 24$)				
25-49			0.039	0.039
			(0.093)	(0.112)
50 - 59			-0.200^{**}	-0.221^{**}
			(0.101)	(0.108)
60+			-0.327^{**}	-0.303^{**}
			(0.142)	(0.148)
Education: Attended School			0.022	0.024
			(0.092)	(0.090)
Household Variables				
Dependency Ratio				-0.034^{**}
				(0.014)
Household Size				0.026***
				(0.008)
Dependent Variable Cutpoints				
No one—One person	-0.318^{***}	-1.084^{***}	-1.201^{***}	-1.138^{***}
	(0.046)	(0.128)	(0.163)	(0.136)
One person—Multiple people	0.564***	-0.179	-0.299	-0.235
	(0.068)	(0.141)	(0.192)	(0.161)
Syria Governorate FE		\checkmark	\checkmark	\checkmark
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5565	5565	5186	5186
AIC	11836.8	11707.6	10862.6	10859.8
BIC	11870.0	11906.3	11092.0	11102.2
RMSE	1.84	1.84	1.84	1.84

Table C.3: Ordinal Logistic Regression Models for Social Safety Nets

Robustness Analyses C.2

C.2.1 Linear Models

Table C.4:	Linear	Regression	Models fo	or Life	Satisfaction	with	Conflict	Measures

	Null Model	Governorate FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	0.022	0.487	0.589	0.699
	(0.026)	(0.520)	(0.551)	(0.523)
Conflict Events (std.)	0.054	0.048	0.092	0.081
	(0.054)	(0.077)	(0.075)	(0.071)
Conflict Fatalities (std.)	-0.040	-0.080^{*}	-0.116^{***}	-0.129^{***}
	(0.039)	(0.042)	(0.040)	(0.040)
Gender: Female			-0.058	0.011
			(0.131)	(0.113)
Age (Reference: $18 - 24$)				
25-49			0.020	0.039
			(0.179)	(0.159)
50 - 59			0.412*	0.328*
			(0.222)	(0.194)
60+			0.695^{**}	0.821***
			(0.304)	(0.306)
Education: Attended School			-0.164	-0.158
			(0.105)	(0.102)
Household Variables				
Dependency Ratio				-0.162^{***}
				(0.021)
Household Size				0.110***
				(0.023)
Syria Governorate FE		\checkmark	\checkmark	\checkmark
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5562	5562	5183	5183
AIC	28649.9	28649.5	26688.4	26644.2
BIC	28683.0	28848.2	26917.8	26886.7
RMSE	3.18	3.16	3.15	3.14

	Null Model	Governorate FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	0.007	-0.480	-0.565	-0.561
	(0.031)	(0.535)	(0.551)	(0.556)
Conflict Events (std.)	0.015	0.070	0.116	0.116
	(0.051)	(0.075)	(0.072)	(0.073)
Conflict Fatalities (std.)	0.046	0.111***	0.093**	0.091^{*}
	(0.031)	(0.038)	(0.047)	(0.049)
Gender: Female			-0.257^{***}	-0.243^{***}
			(0.072)	(0.077)
Age (Reference: $18 - 24$)				
25-49			0.023	0.010
			(0.220)	(0.212)
50-59			0.418*	0.406^{*}
			(0.216)	(0.218)
60+			0.352	0.361
			(0.234)	(0.221)
Education: Attended School			-0.237^{**}	-0.236^{**}
			(0.109)	(0.110)
Household Variables				
Dependency Ratio				-0.005
				(0.028)
Household Size				0.016
				(0.026)
Syria Governorate FE		\checkmark	\checkmark	\checkmark
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5562	5562	5183	5183
AIC	28033.2	28012.5	26072.6	26075.8
BIC	28066.3	28211.2	26302.0	26318.3
RMSE	3.00	2.99	2.97	2.97

Table C.5: Linear Regression Models for Social Trust with Conflict Measures

	Null Model	Governorate FE	Individual Controls	Full Baseline
Conflict Variables				
Conflict Exposure (std.)	-0.006	0.089	0.100	0.110
	(0.021)	(0.122)	(0.104)	(0.104)
Conflict Events (std.)	-0.005	0.022	0.030	0.029
	(0.018)	(0.018)	(0.020)	(0.020)
Conflict Fatalities (std.)	0.031	-0.037^{***}	-0.044^{***}	-0.045^{***}
	(0.024)	(0.013)	(0.013)	(0.013)
Gender: Female			-0.118^{***}	-0.111^{***}
			(0.027)	(0.028)
Age (Reference: $18 - 24$)				
25-49			0.019	0.019
			(0.043)	(0.052)
50-59			-0.089^{*}	-0.097^{*}
			(0.047)	(0.050)
60+			-0.140^{**}	-0.128^{*}
			(0.063)	(0.066)
Education: Attended School			0.009	0.010
			(0.038)	(0.037)
Household Variables				
Dependency Ratio				-0.014^{**}
				(0.007)
Household Size				0.011^{***}
				(0.004)
Syria Governorate FE		\checkmark	\checkmark	√
Jordan Governorate FE		\checkmark	\checkmark	\checkmark
Num.Obs.	5565	5565	5186	5186
AIC	14419.4	14294.3	13306.2	13304.1
BIC	14452.5	14493.0	13535.6	13546.6
RMSE	0.88	0.87	0.87	0.87

Table C.6: Linear Regression Models for Social Safety Networks with Conflict Measures

C.2.2 Quadratic Models

	Life Satisfaction	Social Trust	SSNs
Conflict Variables			
Conflict Exposure (std.)	0.317	-0.406	0.233
	(0.328)	(0.487)	(0.294)
Conflict Events (std.)	0.112^{*}	0.177^{**}	-0.148
	(0.064)	(0.090)	(0.128)
Conflict Events $(std.)^2$	-0.010	0.035^{**}	0.042^{*}
	(0.015)	(0.016)	(0.023)
Conflict Fatalities (std.)	-0.107^{***}	-0.006	0.169^{*}
	(0.028)	(0.043)	(0.095)
Conflict Fatalities $(std.)^2$	0.010**	0.028^{***}	-0.037^{***}
	(0.005)	(0.007)	(0.012)
Conflict Events \times Conflict Fatalities	-0.020	-0.095^{***}	-0.023^{**}
	(0.015)	(0.026)	(0.010)
Gender: Female	0.010	-0.183^{***}	-0.250^{***}
	(0.061)	(0.051)	(0.065)
Age (Reference: $18 - 24$)			
25-49	0.020	0.065	0.041
	(0.101)	(0.146)	(0.115)
50-59	0.158	0.329**	-0.221^{**}
	(0.120)	(0.163)	(0.111)
60+	0.393**	0.233	-0.296^{**}
	(0.173)	(0.145)	(0.150)
Education: Attended School	-0.067	-0.060	0.021
	(0.072)	(0.079)	(0.089)
Household Variables			
Dependency Ratio	-0.094^{***}	-0.010	-0.035^{**}
	(0.013)	(0.016)	(0.014)
Household Size	0.069^{***}	0.013	0.026^{***}
	(0.016)	(0.016)	(0.008)
Syria Governorate FE	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark
Num.Obs.	5183	5183	5186
AIC	11316.0	10752.3	10861.4
BIC	11578.1	11014.5	11123.5
RMSE	1.80	1.60	1.84

Table C.7: Models with Quadratic Conflict Exposure

C.2.3 Restricted Sample

	Life Satisfaction	Social Trust	SSNs
Conflict Exposure (std.)	-0.055	-1.332^{*}	0.289
	(0.661)	(0.684)	(1.139)
Conflict Events (std.)	0.228^{**}	0.138	0.062
	(0.104)	(0.132)	(0.120)
Conflict Fatalities (std.)	-0.250^{***}	0.178	-0.091
	(0.052)	(0.174)	(0.232)
Gender: Female	0.008	-0.219^{***}	-0.310^{***}
	(0.082)	(0.052)	(0.092)
Age (Reference: $18 - 24$)			
25-49	0.053	-0.016	-0.003
	(0.101)	(0.138)	(0.129)
50-59	0.260^{*}	0.155	-0.198
	(0.145)	(0.116)	(0.125)
60+	0.447^{***}	0.089	-0.380^{**}
	(0.169)	(0.156)	(0.175)
Education: Attended School	-0.055	-0.064	-0.088
	(0.065)	(0.081)	(0.091)
Household Variables			
Dependency Ratio	-0.082^{***}	-0.014	-0.021^{**}
	(0.010)	(0.014)	(0.010)
Household Size	0.057^{***}	0.010	0.030^{**}
	(0.015)	(0.012)	(0.014)
Syria Governorate FE	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark
Num.Obs.	3716	3716	3718
AIC	8119.1	7703.0	7793.0
BIC	8349.2	7933.2	8023.1
RMSE	1.80	1.59	1.82

Table C.8: Comparison of Full Models Restricted Sample 2012-2013

C.3 Climate Shocks

	Life Satisfaction	Social Trust	SSNs
Conflict Variables			
Conflict Exposure (std.)	0.352	-0.345	-0.118
	(0.303)	(0.426)	(0.262)
Conflict Events (std.)	0.065	0.065	0.067
	(0.050)	(0.079)	(0.065)
Conflict Fatalities (std.)	-0.106^{***}	0.065	-0.065^{*}
	(0.039)	(0.051)	(0.035)
Extreme Drought Exposure (std.)	0.087	0.020	0.011
	(0.089)	(0.109)	(0.069)
Age: $25 - 49$	0.030	0.091	0.057
	(0.090)	(0.152)	(0.115)
Age: $50 - 59$	0.189^{*}	0.350**	-0.217^{**}
	(0.110)	(0.175)	(0.110)
Age: 60+	0.429***	0.279^{*}	-0.244
	(0.165)	(0.151)	(0.169)
Education: Attended School	-0.138^{**}	-0.065	0.041
	(0.055)	(0.071)	(0.079)
Marital Status: Other	-0.288^{***}	-0.298^{***}	-0.348^{**}
	(0.083)	(0.064)	(0.143)
Marital Status: Single	-0.456^{**}	-0.199^{**}	-0.044
	(0.217)	(0.093)	(0.175)
Dependency Ratio	-0.101^{***}	-0.014	-0.041^{**}
	(0.013)	(0.017)	(0.017)
Household Size	0.054^{***}	0.006	0.025**
	(0.013)	(0.017)	(0.011)
Conflict Events \times Extreme Drought	-0.032	0.009	0.061
	(0.031)	(0.025)	(0.048)
Conflict Fatalities \times Extreme Drought	0.025	-0.023	-0.127^{**}
	(0.031)	(0.016)	(0.050)
Syria Governorate FE	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark
Num.Obs.	5163	5163	5166
AIC	11257.3	10708.0	10825.1
BIC	11525.8	10976.5	11093.7
RMSE	1.80	1.60	1.84

Table C.9: Effect of Drought and Conflict Events on Social Well-being

Note: Models plotted in Figure 3. * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate).

C.4 Mental Health Mediation

Our mental health mediation analysis examines whether the psychological impacts of conflict exposure, specifically depression, serve as a mechanism linking conflict experiences to social well-being. We implement a two-stage mediation approach. In the first stage, we estimate the effect of conflict exposure on depression frequency (an ordered categorical variable going from never, a few times a year, monthly, weekly, and daily) using an ordered logistic regression that includes our three standardized conflict measures (exposure duration, number of events, and deaths), along with individual and household controls. The first column in Table C.10 presents these results, showing that only fatalities significantly predict higher levels of depression.

In the second stage, we estimate the effect of both conflict exposure and depression on each social outcome (life satisfaction, social trust, and social safety networks). These results appear in columns 2-4 of Table C.10. The coefficient on depression represents the mediator's effect on each outcome while controlling for direct conflict effects. We find strong negative associations between depression and all three outcomes, with the largest effect on life satisfaction (-0.768), followed by social trust (-0.342), and social safety networks (-0.197).

	Depression	Life Satisfaction	Social Trust	SSNs
Conflict Variables				
Conflict Exposure (std.)	-0.548^{**}	0.303	-0.274	0.177
	(0.270)	(0.256)	(0.412)	(0.241)
Conflict Events (std.)	-0.072	0.009	0.045	0.054
	(0.044)	(0.037)	(0.053)	(0.043)
Conflict Fatalities (std.)	0.131^{***}	-0.033^{*}	0.082**	-0.081^{***}
	(0.032)	(0.019)	(0.034)	(0.029)
Gender: Female	0.374^{***}	0.109^{*}	-0.140^{***}	-0.227^{***}
	(0.099)	(0.064)	(0.043)	(0.054)
Age (Reference: $18 - 24$)				
25-49	0.180**	0.065	0.080	0.057
	(0.073)	(0.082)	(0.153)	(0.118)
50-59	0.541^{***}	0.289**	0.345^{*}	-0.161
	(0.108)	(0.119)	(0.176)	(0.120)
60+	0.193	0.476^{***}	0.244	-0.261^{*}
	(0.162)	(0.148)	(0.149)	(0.152)
Education: Attended School	-0.290^{**}	-0.117	-0.095	-0.014
	(0.127)	(0.087)	(0.074)	(0.091)
Household Variables				
Dependency Ratio	0.146^{***}	-0.066^{***}	0.003	-0.024^{*}
	(0.010)	(0.017)	(0.018)	(0.013)
Household Size	-0.047^{***}	0.061^{***}	0.010	0.027^{***}
	(0.010)	(0.014)	(0.018)	(0.010)
Depression		-0.781^{***}	-0.363^{***}	-0.210^{**}
		(0.070)	(0.063)	(0.098)
Syria Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Num.Obs.	5093	5069	5069	5072
AIC	13592.7	10819.3	10486.2	10592.5
BIC	13847.6	11087.1	10754.0	10860.3
RMSE	3.80	1.80	1.60	1.84

Table C.10: Mental Health Mediation Analysis for Social Well-being

Note: * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian Governorate). First column shows effect of conflict on depression. Other columns show combined effects of conflict and depression on each outcome.

To quantify the indirect effects of conflict operating through depression, we multiply the first-stage coefficients (effect of conflict on depression) by the second-stage coefficients (effect of depression on each outcome). Table C.11 presents these indirect effects along with their standard errors. Since the indirect effect is a product of two coefficients,
we calculate its standard error using the delta method (Sobel, 1982). For an indirect effect calculated as the product of coefficients a and b, the standard error is computed as $\sqrt{a^2\sigma_b^2 + b^2\sigma_a^2}$, where σ_a^2 and σ_b^2 are the variances of the respective coefficients.

	Indirect Effect	SE	Z-stat	P-value
Life Satisfaction Conflict Events Conflict Fatalities	$0.056 \\ -0.102$	$0.035 \\ 0.027$	$1.617 \\ -3.838$	$\begin{array}{c} 0.106 \\ 0.000 \end{array}$
Social Trust Conflict Events Conflict Fatalities	0.026 -0.048	$\begin{array}{c} 0.017\\ 0.014\end{array}$	$1.572 \\ -3.334$	$\begin{array}{c} 0.116 \\ 0.001 \end{array}$
Social Safety Nets Conflict Events Conflict Fatalities	$0.015 \\ -0.027$	$\begin{array}{c} 0.012\\ 0.014\end{array}$	$1.300 \\ -1.898$	$\begin{array}{c} 0.194 \\ 0.058 \end{array}$

Table C.11: Mediation Effects through Depression

Note: First order mediation results are available in Table C.10. Conflict variables are standardized.

C.5 Gender Heterogeneity

	Life Satisfaction	Social Trust	SSns
Conflict Variables			
Conflict Exposure (std.)	0.460^{*}	-0.216	0.225
	(0.274)	(0.420)	(0.244)
Conflict Events (std.)	-0.007	0.037	0.059
	(0.043)	(0.062)	(0.055)
Conflict Fatalities (std.)	-0.039^{*}	0.055^{*}	-0.105^{***}
	(0.022)	(0.029)	(0.039)
Gender: Female	0.173**	-0.097^{*}	-0.150^{***}
	(0.071)	(0.052)	(0.047)
Age (Reference: $18 - 24$)		, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , ,
25 - 49	0.031	0.087	0.049
	(0.085)	(0.152)	(0.114)
50 - 59	0.186^{*}	0.353**	-0.214^{**}
	(0.105)	(0.172)	(0.109)
60+	0.446^{***}	0.279^{*}	-0.261
	(0.158)	(0.157)	(0.167)
Education: Attended School	-0.107^{*}	-0.069	0.020
	(0.057)	(0.070)	(0.088)
Marital Status (Reference: Married)			
Other	-0.415^{***}	-0.224^{***}	-0.230
	(0.095)	(0.067)	(0.143)
Single	-0.476^{**}	-0.172^{*}	-0.006
	(0.190)	(0.101)	(0.172)
Household Variables			
Dependency Ratio	-0.104^{***}	-0.013	-0.037^{**}
	(0.013)	(0.016)	(0.017)
Household Size	0.057^{***}	0.007	0.024^{**}
	(0.013)	(0.016)	(0.011)
Interactions			
Conflict Events \times Female	0.099	-0.009	-0.073
	(0.072)	(0.089)	(0.058)
Conflict Fatalities \times Female	-0.082^{*}	0.113	0.121^{**}
	(0.043)	(0.080)	(0.059)
Syria Governorate FE	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark
Num.Obs.	5170	5170	5173
AIC	11266.3	10719.5	10837.1
BIC	11534.9	10988.1	11105.7
RMSE	1.80	1.60	1.84

Table C.12: Models with Gender Interactions

Note: Models plotted in Figure 5. * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate). 'Marital Status: Other' includes divorced, engaged, separated, and widower.

C.5.1 Household gender balance

	Life Satisfaction	Social Trust	SSNs
Conflict Variables			
Conflict Exposure (std.)	0.496^{*}	-0.242	0.194
	(0.290)	(0.403)	(0.232)
Conflict Events (std.)	0.012	0.017	0.042
	(0.050)	(0.056)	(0.046)
Conflict Fatalities (std.)	-0.031	0.080**	-0.073^{**}
	(0.019)	(0.035)	(0.033)
Household Composition (Reference: Balanced)	(0.010)	(0.000)	(0.000)
Female majority	-0.082	-0.154*	0.081
i chiale hiajority	(0.079)	(0.083)	(0.132)
Malo majority	0.110	0.319**	0.144
Male majority	(0.102)	(0.136)	(0.144)
A_{aa} (Poference: 18, 24)	(0.102)	(0.150)	(0.142)
25 = 40	0.032	0.088	0.055
20 49	(0.032)	(0.148)	(0.117)
50 50	(0.003)	0.320**	(0.117)
30 - 39	(0.203)	(0.157)	(0.120)
60	(0.110)	(0.137)	(0.120)
00+	(0.165)	(0.211)	(0.181)
Education, Attended School	(0.103)	(0.132)	(0.181)
Education: Attended School	-0.140	-0.072	0.038
Marital Chata (Defense Marial)	(0.049)	(0.003)	(0.084)
Marital Status (Reference: Married)	0.007***	0.969***	0.951***
Other	-0.287	-0.203	-0.551
	(0.080)	(0.067)	(0.135)
Single	-0.431^{++}	-0.199°	-0.057
II	(0.197)	(0.106)	(0.168)
Housenola variables	0 105***	0.010	0.020**
Dependency Ratio	-0.105	-0.010	-0.038°
	(0.015)	(0.019)	(0.016)
Household Size	(0.057^{++++})	0.007	0.023^{*}
T / /·	(0.015)	(0.019)	(0.012)
Interactions	0.870	0.007***	0.000
Connict Events × Female majority	0.370	0.337	-0.002
Conflict Fronte Male and inite	(0.259)	(0.078)	(0.098)
Connict Events × Male majority	-0.027	0.024	0.088
Conflict Fatalities of French and insite	(0.130)	(0.062)	(0.063)
Connict Fatalities × Female majority	-0.582	-0.098	0.105
	(0.224)	(0.080)	(0.066)
Conflict Fatalities \times Male majority	-0.218^{*}	0.059	-0.292^{***}
	(0.128)	(0.048)	(0.035)
Syria Governorate FE	√	V	√
Jordan Governorate FE			√
Num.Obs.	5170	5170	5173
	11 267.8	10713.6	10842.8
	11 556.1	11 001.8	11 131.1
RMSE	1.80	1.60	1.84

Table C.13: Gender Balance Interaction Models Across Outcomes

Note: Models plotted in Figure 6. * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate). 'Marital Status: Other' includes divorced, engaged, separated, and widower.

C.5.2 Gender and Mental Health

	Depression	Life Satisfaction	Social Trust	Social Safety
Conflict Variables				
Conflict Exposure (std.)	-0.441	0.385***	0.083	0.005
	(0.270)	(0.117)	(0.377)	(0.212)
Conflict Events (std.)	-0.099^{***}	0.045	-0.007	0.083
	(0.036)	(0.038)	(0.047)	(0.066)
Conflict Fatalities (std.)	0.136***	-0.098^{***}	0.036	-0.093^{*}
	(0.029)	(0.031)	(0.028)	(0.049)
Age (Reference: $18 - 24$)				
25 - 49	0.102	0.047	0.032	0.017
	(0.084)	(0.089)	(0.128)	(0.134)
50 - 59	0.449***	0.304***	0.278	-0.246
	(0.099)	(0.115)	(0.182)	(0.175)
60+	0.037	0.470^{**}	0.068	-0.310
	(0.160)	(0.226)	(0.126)	(0.213)
Education: Attended School	-0.262^{*}	-0.168*	0.111	0.238
	(0.146)	(0.100)	(0.155)	(0.145)
Marital Status (Reference: Married)				
Marital Status: Other	0.407^{*}	-0.371	-0.100	0.099
	(0.228)	(0.256)	(0.229)	(0.573)
Marital Status: Single	0.355^{*}	-0.520^{***}	-0.025	0.037
	(0.187)	(0.180)	(0.130)	(0.229)
Household Variables				
Dependency Ratio	0.173***	-0.081^{***}	-0.015	-0.025
	(0.011)	(0.023)	(0.021)	(0.017)
Household Size	-0.038^{***}	0.057***	0.010	0.020
	(0.013)	(0.012)	(0.015)	(0.018)
Depression		-0.686^{***}	-0.324^{***}	-0.210^{**}
		(0.072)	(0.077)	(0.106)
Syria Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Num.Obs.	3711	3690	3690	3693
AIC	10091.0	7875.2	7721.6	7791.4
BIC	10339.8	8136.2	7982.5	8052.4
RMSE	3.72	1.80	1.61	1.87

Table C.14: Models for Men's Outcomes

Note: * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate). 'Marital Status: Other' includes divorced, engaged, separated, and widower.

	Depression	Life Satisfaction	Social Trust	Social Safety
Conflict Variables				
Conflict Exposure (std.)	-0.829^{***}	0.055	-1.590^{***}	0.871^{***}
	(0.270)	(0.117)	(0.377)	(0.212)
Conflict Events (std.)	0.127^{***}	-0.171^{***}	0.139^{***}	-0.128^{*}
	(0.036)	(0.038)	(0.047)	(0.066)
Conflict Fatalities (std.)	-0.065^{**}	0.279^{***}	0.341^{***}	0.015
	(0.029)	(0.031)	(0.028)	(0.049)
Age (Reference: $18 - 24$)				
25-49	0.271^{***}	0.174^{**}	0.380***	0.272**
	(0.084)	(0.089)	(0.128)	(0.134)
50-59	0.663^{***}	0.393^{***}	0.703^{***}	0.149
	(0.099)	(0.115)	(0.182)	(0.175)
60+	0.405^{**}	0.646^{***}	0.741^{***}	-0.044
	(0.160)	(0.226)	(0.126)	(0.213)
Education: Attended School	-0.141	-0.178^{*}	-0.286^{*}	-0.299^{**}
	(0.146)	(0.100)	(0.155)	(0.145)
Marital Status (Reference: Married)				
Marital Status: Other	0.246	-0.379	-0.304	-0.292
	(0.228)	(0.256)	(0.229)	(0.573)
Marital Status: Single	-0.263	-0.221	-0.278^{**}	-0.078
	(0.187)	(0.180)	(0.130)	(0.229)
Household Variables				
Dependency Ratio	0.072^{***}	-0.044^{*}	0.073^{***}	-0.028
	(0.011)	(0.023)	(0.021)	(0.017)
Household Size	-0.032^{**}	0.025^{**}	-0.012	0.043**
	(0.013)	(0.012)	(0.015)	(0.018)
Depression		-1.060^{***}	-0.447^{***}	-0.183^{*}
		(0.072)	(0.077)	(0.106)
Syria Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark	\checkmark
Num.Obs.	1370	1367	1367	1367
AIC	3480.6	2945.7	2767.0	2827.0
BIC	3689.5	3165.0	2986.2	3046.3
RMSE	4.00	1.80	1.57	1.74

Table C.15: Models for Women's Outcomes

Note: * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate). 'Marital Status: Other' includes divorced, engaged, separated, and widower.

C.6 Camp and Non-Camp

	TIC CLIC .	0.15	a . 1 a
	Life Satisfaction	Social Trust	Social Safety Net
Conflict Variables			
Conflict Exposure (std.)	0.415	-0.320	0.233
	(0.298)	(0.398)	(0.256)
Conflict Events (std.)	0.014	0.049	0.115^{**}
	(0.046)	(0.079)	(0.051)
Conflict Fatalities (std.)	-0.087^{***}	0.073	-0.137^{***}
	(0.032)	(0.068)	(0.041)
Location: Non-Camp	-0.105^{***}	0.091^{**}	-0.119^{**}
	(0.040)	(0.037)	(0.052)
Age (Reference: $18 - 24$)			
25-49	0.026	0.065	0.028
	(0.103)	(0.144)	(0.113)
50-59	0.161	0.285^{*}	-0.259^{***}
	(0.112)	(0.156)	(0.100)
60+	0.404**	0.208	-0.313^{**}
	(0.173)	(0.130)	(0.148)
Education: Attended School	-0.055	-0.020	0.113
	(0.055)	(0.069)	(0.072)
Household Variables			
Dependency Ratio	-0.096^{***}	-0.007	-0.037^{***}
	(0.014)	(0.015)	(0.014)
Household Size	0.068***	0.017	0.035***
	(0.016)	(0.016)	(0.007)
Interactions			
Conflict Events \times Non-Camp	-0.011	0.020	-0.095^{**}
	(0.060)	(0.073)	(0.047)
Conflict Fatalities \times Non-Camp	0.032	-0.017	0.082^{*}
	(0.025)	(0.070)	(0.042)
Syria Governorate FE	\checkmark	\checkmark	\checkmark
Jordan Governorate FE	\checkmark	\checkmark	\checkmark
Num.Obs.	5183	5183	5186
AIC	11319.2	10787.9	10957.9
BIC	11489.5	10958.2	11 128.3
RMSE	1.80	1.60	1.84

Table C.16: Location Type Interaction Models Across Outcomes

Note: Models plotted in Figure 7. * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate).

Table C.17: Female-Majority Households: Effects of Conflict Fatalities by Location Life Satisfaction Social Trust Social Safety Net Conflict Exposure (std.) 1.833 0.118 1.454^{*} (0.969)(1.404)(0.794)Conflict Fatalities (std.) -0.380*0.013 0.348(0.221)(0.255)(0.252)Non-Camp Setting 0.1890.174-0.346*(0.131)(0.202)(0.203)Age (Reference: 18 - 24) 1.030** Age: 25-49 -0.2240.125(0.354)(0.373)(0.425)-0.2020.265Age: 50-59 0.388(0.313)(0.412)(0.274)Age: 60+ -0.117-0.1380.480(0.330)(0.570)(0.493) -0.402^{*} Education: Attended School -0.412-0.278(0.316)(0.209)(0.180)Marital Status (Reference: Married) Marital Status: Other -0.362^{**} -0.2520.124(0.173)(0.195)(0.217) -1.054^{***} -0.488^{*} Marital Status: Single 0.106(0.331)(0.273)(0.268)Household Variables 0.073** **Dependency** Ratio -0.0040.004(0.035)(0.032)(0.045)Household Size 0.031-0.0370.063(0.022)(0.045)(0.042)-0.174-0.122-0.193Fatalities \times Non-Camp (0.252)(0.220)(0.286)Syrian Governorate FE \checkmark \checkmark \checkmark Jordan Governorate FE \checkmark \checkmark \checkmark Num.Obs. 391391391AIC 883.8 808.2 841.8 BIC 983.0 907.4941.0 RMSE 1.811.521.78

C.6.1 Household gender balance in camp and non-camp environments

Note: Models plotted in Figure 8. * p <0.1, ** p <0.05, *** p <0.01. Standard errors are clustered by origin location (Syrian governorate).

Custom

Custom

Custom

Std.Errors

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