

Exploring the Spillover Effects of Internally Displaced Settlements on the Wellbeing of Children of the Locales

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- Research Question
- Motivation and Context
- Data and Identification
- Difference-in-Difference Estimation
- Effects on the Likelihood of Being Underweight, Stunted, or Wasted
- Effects on the Likelihood of Being Underweight and Stunted
- Mechanisms
- Conclusion

Research question

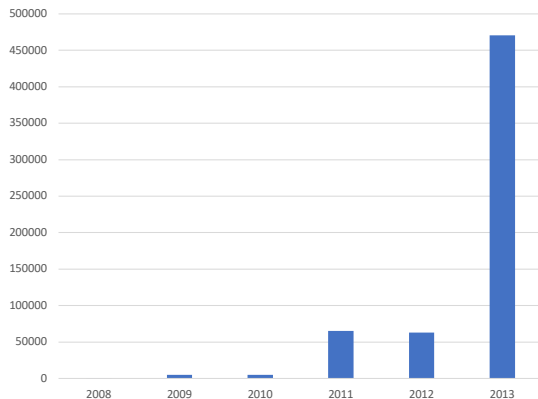
- 1 We investigate how the existence of IDP settlements impacts the well-being of host communities, with a particular emphasis on anthropometric indicators of host community children.
- 2 We explore mechanisms underlying the potential effect of IDP settlements.

Motivation and Context I

- Before 2008, IDP settlements in Nigeria were non-existent.
- In 2011, the number of IDPs displaced by conflict significantly increased since then.
- The migration pattern of IDPs searching for a new settlement consists of camps and camp-like settings in host communities.

Motivation and Context II

Figure 1: Trend of IDP Settlements in Nigeria

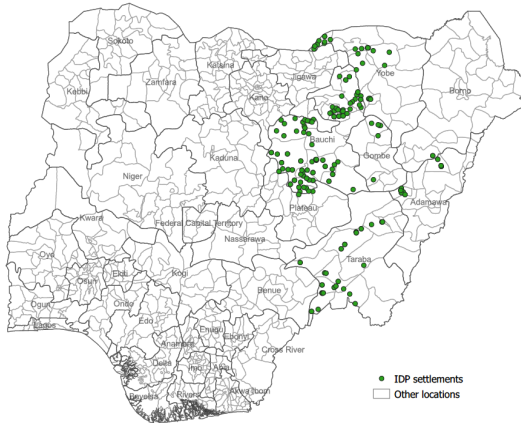


Source: Data from Internal Displacement Monitoring Centre, <https://www.internal-displacement.org/>

Motivation and Context III

- IDP settlements in Nigeria are primarily located in Northern Nigeria

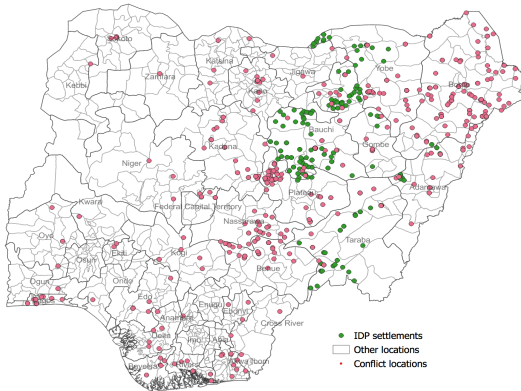
Figure 2: IDP Settlements in Nigeria 2011 to 2013



Motivation and Context IV

- IDP settlements are away from conflict hotspots to limit exposure to violence.

Figure 3: IDP Settlements and Conflict Locations in Nigeria 2011 to 2013



Motivation and Context V I

Effects on Host Community Market System

- Effects on food prices (Alix-Garcia and Saah, 2010; Verme, 2023)

Effects on Socio-relational and Inter-group relations

- Trigger backlash, increasing support for anti-immigrant parties and lowering preferences for redistribution and diversity among natives (Alix-Garcia and Saah, 2010; Verme, 2023)

Effects on Food Systems and Agricultural Production

- Decline in food consumption of host communities (George et al., 2021)
- Decline in agricultural production in host communities (George et al., 2021)

Effects of Refugee Inflow on the Wellbeing of Children of Host Communities - Baez, J.E., (2011)

- Decline in anthropometric outcome - <0.3 SD
- Increase in the incidence of infectious diseases - 15–20 percentage points
- Increase in under-5 mortality - 7 percentage points)

Study's Contribution

- Focus on IDP effects if IDP settlements in Nigeria
 - Public policy directive to support the integration of IDP within the host community.
 - E.g., National policy "NATIONAL POLICY ON INTERNALLY DISPLACED PERSONS (IDPs) IN NIGERIA"
 - Increased donor/aid activities in host communities
- Focus on Child well-being
 - Children under-5 make up a third of Nigeria's food-insecure population (UNICEF, 2023).
 - highest number of under-5 with chronic malnutrition (stunting or low height-for-age) in SSA
 - Second highest burden of stunted children globally, with a national prevalence rate of 32 percent

IDP Settlements - Formal Settlements

- International Organization for Migration Displacement Tracking Matrix - IOM-DTM
- This data offers the following:
 - Geolocation information about the presence of IDPs in a specific administrative area.
 - The year of displacement and settlement of the majority of IDPs in a certain Ward

Child Wellbeing - Anthropometric Measures

- Child (under-5) z-score for weight-for-age, height-for-age, or weight-for-height.
 - Demographic and Health Survey - 2008 and 2013.

Cohort Children

- Children with birth year 2011, 2012, and 2013

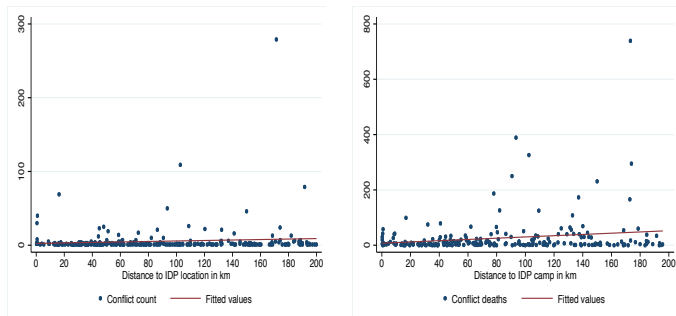
Locational Variation - 2 Measures

- Distance bands a.) Less than 10km (the primary measure), b.) 11 to 25 km, c.) 26 to 50 km, and d.) over 50km
- Relative proximity to IDP camp

Why Cap at 200km?

- To improve comparability
- Minimise the risk of capturing other confounding factors - see Figure 4.

Figure 4: Conflict Incidence by Distance to IDP Locations



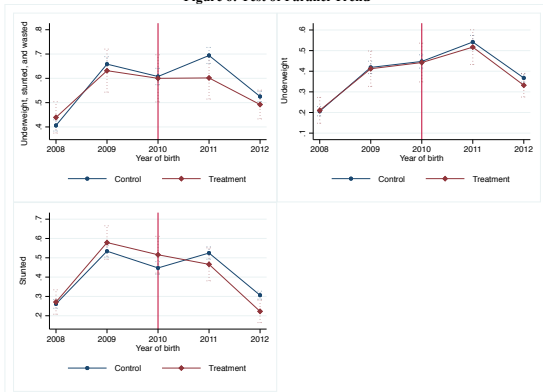
Source: Conflict count data comes from ACLED and conflict deaths data comes from Uppsala Conflict Data Program for periods 2011 and 2013.

Difference-in-Difference Estimation

- Assumption: Parallel trend assumption
- Figure 6 displays the average outcome over the years for T (< 10 km radius) and C (outside this radius)
- Figure 7 and 8 displays effects over time

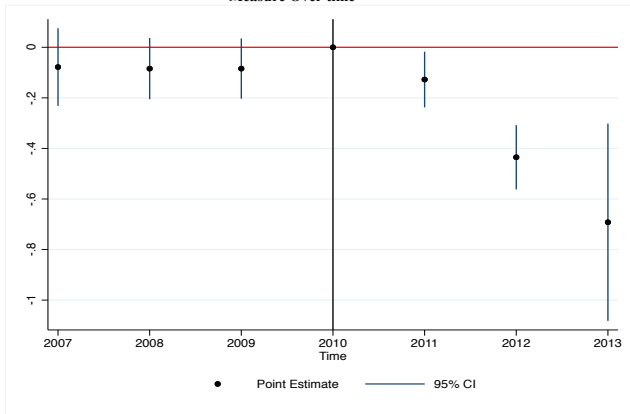
$$\begin{aligned} \text{Anthropometric}_{ibmrst} &= \beta_1 \text{IDP exposure}_{mrst} + \beta_2 \text{Cohort}_{ib} + \beta_3 \text{IDP exposure} \times \text{Cohort}_{ibmrst} \\ &+ \delta X_{mrst} + \zeta_r + \delta_t + \pi_t + \gamma_s + \varpi_m + \gamma_{sb} + \varepsilon_{mrst} \quad (1) \end{aligned}$$

Figure 6: Test of Parallel Trend



Note: The estimates in Figure 6 shows the averages of the outcomes for the treatment and control group over birth years of the children. We use the primary indicator of exposure (i.e., 10km cut off) to determine treatment, such that the *Treatment* are children in the cohort whose household resides within 10km proximity to the IDP settlement. The *Control* on the other hand are those children whose birth year coincide with other periods before the IDP inflow, those who reside in distances outside 10km proximity to the IDP settlement, or those cohort children who reside in distances outside close proximity to the IDP settlement. We only consider periods closer to the year of the first IDP settlement and the years immediately after the IDP settlement.

Figure 7: Effects on Child Anthropometric (i.e., being Underweight, Stunted, and Wasted) Measure Over time



Note: We grouped all observations within the five years before 2011 (i.e., 2007) and three years after the reform (i.e., 2013, the last survey year for this study). The estimates are based on equation 2 that shows effects for each birth year for those in the treatment group relative to the control.

Figure 8a: Effects on Likelihood of being Underweight Over time

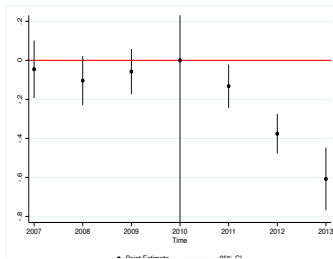
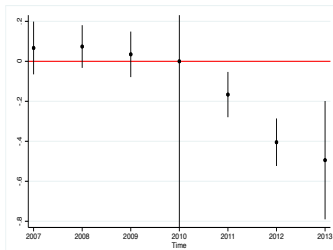


Figure 8b: Effects on Likelihood of being Stunted Over time

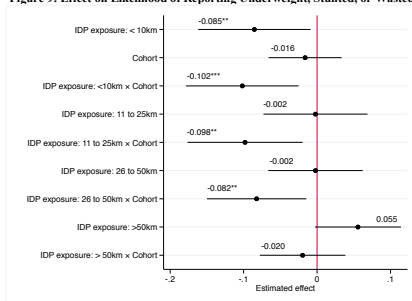


Note: We grouped all observations within the five years before 2011 (i.e., 2007) and three years after the reform (i.e., 2013, the last survey year for this study). The estimates are based on equation 2 that shows effects for each birth year for those in the treatment group relative to the control.

Effects on the Likelihood of Being Underweight, Stunted, or Wasted

- 10 km radius -10 p.p.
- 25 km radius -9.8 p.p.
- 50 km radius -8.2 p.p.

Figure 9: Effect on Likelihood of Reporting Underweight, Stunted, or Wasted

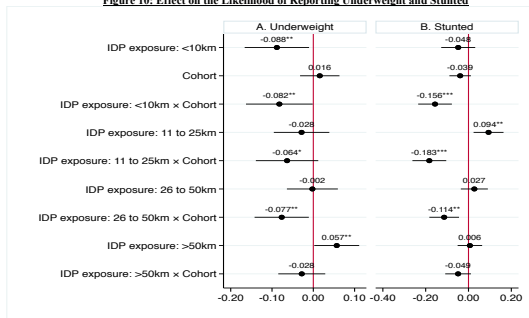


Notes: These estimates are based on equation (1). The outcome variables is the likelihood of the child reporting underweight, stunted, or wasted, such that the weight-for-age, height-for-age, and weight-for-height are below minus two standard deviations (and not above plus two standard deviations). The following control variables are included for all the estimates, household size, rural dummy, the education status and age of the woman/mother. ***p < 0.01, **p < 0.05, *p < 0.1.

Effects on the Likelihood of Being Underweight, Stunted

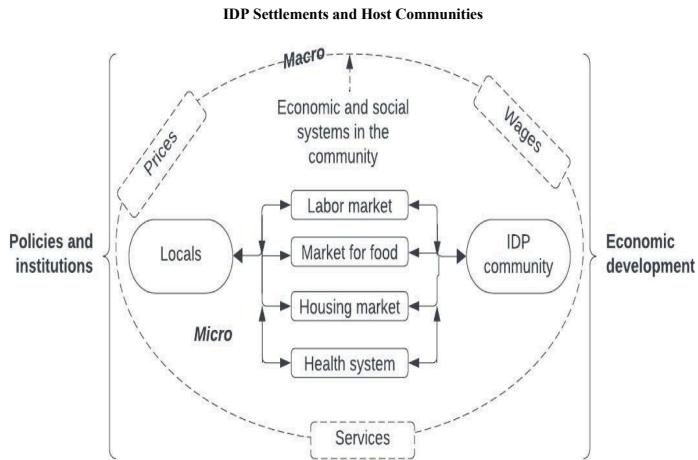
- 10 km radius
 - Underweight -8 p.p.
 - Stunted -16 p.p.
- Other coefficients decline or are not significant with distance.

Figure 10: Effect on the Likelihood of Reporting Underweight and Stunted



Notes: Estimates presented in Figure 10 are from equation (1), with the outcome variable being the individual indicators of underweight and stunted. The control variables are household size, rural dummy, the education status and age of the woman/mother. ***p < 0.01, **p < 0.05, *p < 0.1.

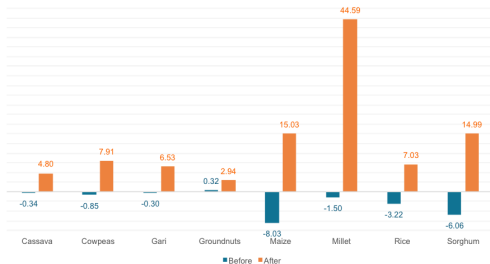
Mechanisms



Changes in the Economic System

- Increase food prices due to IDP influx
- Causing Increases in Agric. Labor
- Increase in HH disposable income

Figure 11: Changes in Locally Produced Food Prices Before and After IDP Inflow



Note: The estimates represent price inflations for various agricultural produce/foods in just LGAs with IDP settlements. Based on data availability and clear identification of local governments when matching data sources, we consider the two years before and after the 2011 IDP settlements to represent the periods immediately preceding and after the settlement. Aside from the clear increases in food prices observed after IDP settlement, the figure also shows that the highest price changes are recorded for crops primarily produced in these states, such as millet (Yobe and Borno states), maize (Gombe, Bauchi, Taraba, and Borno states), and sorghum (Adamawa, Plateau, and Borno states).

Source: Authors computation from Andree (2021) monthly food price estimates by product.

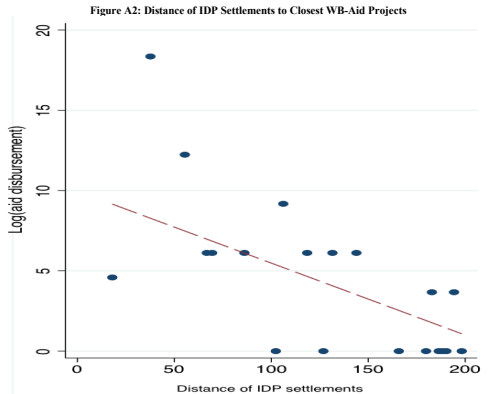
Table: Increased Donor-Funded Healthcare Initiatives in the IDP Communities

	Economic opportunities		
	Work	Agric jobs	Other professional Jobs
	(1)	(2)	(3)
IDP exposure: <10km × Cohort	-0.067* (0.039)	0.060** (0.025)	-0.061 (0.039)
IDP exposure: 11 to 25km × Cohort	-0.025 (0.038)	0.089*** (0.028)	-0.034 (0.037)
IDP exposure: 26 to 50km × Cohort	0.003 (0.030)	0.030 (0.024)	-0.003 (0.030)
IDP exposure: over 50km × Cohort	0.039 (0.027)	0.001 (0.021)	0.013 (0.027)
Observations	19,078	19,078	19,078
R-squared	0.286	0.541	0.310
Covariates	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes

Notes: Estimates presented in Table 2 are analysis from equation (1). The outcome variable are the indicators of economic opportunities and donor-led health initiatives, as earlier defined. The estimation includes the direct indicators for the cohort and the different distance threshold. We do not report these indicators for space. The control variables are household size, rural dummy, the education status and age of the woman/mother. The standard errors are displayed in parenthesis. ***p < 0.01, **p < 0.05, *p < 0.1.

Increase in Donor-led Health Initiatives in IDP Communities

- + Vaccinations; Increase in ITNs; Increase in health services; Increase in sanitations



Note: Aid data comes from Aid Data from the World-bank-geocoded-research-release-level-1-v1-4-2. We define two categories of projects as follows – health and infrastructure projects – if any of the listed projects correspond with the classification. Panel A shows that on the average, the IDP settlements closer to the health-related projects receive higher WB disbursements unlike locations that are farther from the IDP settlements.

Table: Increased Donor-Funded Healthcare Initiatives in the IDP Communities

	Donor-led Health Initiatives			Sanitation	
	Vaccination	HH has ITN	Antenatal visit	Access to water	Open defecation
	(4)	(5)	(6)	(7)	(8)
IDP exposure: <10km × Cohort	0.138** (0.066)	0.047 (0.035)	0.050 (0.052)	0.027 (0.037)	0.006 (0.038)
IDP exposure: 11 to 25km × Cohort	0.053 (0.075)	-0.026 (0.036)	0.053 (0.057)	0.022 (0.038)	0.036 (0.039)
IDP exposure: 26 to 50km × Cohort	0.028 (0.075)	-0.016 (0.030)	0.064 (0.046)	0.002 (0.029)	0.028 (0.029)
IDP exposure: over 50km × Cohort	-0.063 (0.061)	-0.032 (0.028)	-0.040 (0.042)	0.003 (0.028)	0.001 (0.025)
Observations	19,078	19,061	11,892	18,984	18,991
R-squared	0.431	0.432	0.369	0.524	0.564
Covariates	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes

Notes: Estimates presented in Table 2 are analysis from equation (1). The outcome variable are the indicators of economic opportunities and donor-led health initiatives, as earlier defined. The estimation includes the direct indicators for the cohort and the different distance threshold. We do not report these indicators for space. The control variables are household size, rural dummy, the education status and age of the woman/mother. The standard errors are displayed in parenthesis. ***p < 0.01, **p < 0.05, *p < 0.1.

- IDP settlements led to improvements in anthropometric outcomes of affected children.
 - Children whose birth years coincide with periods of the IDP settlements in their community
 - and who reside in communities that are close to the IDP settlement.
- Result is seen because of a likely shift in household labor activities towards intensifying agricultural production for improved household earnings and an increase in vaccination efforts because of the expansion of donor-led activities in the host communities.

Link to the paper here:

