To Move or Stay?: Migration Intentions Amid Conflict and Climate Change

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Extended abstract

Background

It is estimated that in 2023, 14% of the world population were residing within five kilometres of conflict or civil protest (Raleigh et al. 2024). Conflict can lead to migration both directly and indirectly. Political oppression and violence associated with conflict can be life-threatening, often resulting in affected individuals forcibly displaced both internally and across international borders. Conflict also disrupts life and livelihoods including access to markets, health and social services, access to schooling, property damage and many more. There is evidence that civil wars negatively impacts the economy both the conflict afflicted country and spillover effects on neighbouring countries (Murdoch and Sandler 2002, 2004). Perceived physical threat from conflict, personal experiences and impact of conflict on other determinants of migration can therefore drive individuals to consider outmigration as a coping mechanism.

Climate change has also been documented as one factor driving migration both internally and across border (Hoffmann et al. 2020; Rigaud et al. 2018). Climate change-induced natural hazards can be disruptive, threatening human lives and property and consequently forces people to leave their home. Likewise, slow-onset events such as droughts, aridification and sea-level rise can disrupt livelihoods through affecting, for instance, agricultural production, food security and income and, as a consequence, prompt some affected individuals to choose migration as an adaptation strategy (Hoffmann et al. 2022).

Many fragile states under conflict, especially those in Africa and the Middle East are also experiencing severe consequences of climate change (Busby et al. 2014; Waha et al. 2017). With high poverty, instability, socio-political unrest and armed conflict, these countries have limited financial and institutional ability to adapt making them the most vulnerable to climate change. The intersection of climate, conflict and other risks call for the consideration of interdependencies and interactions among multiple risks on mobility patterns and outcomes (Czaika and Reinprecht 2022; Van Hear et al. 2018). In fact, the relationships between exposure to climate change and conflict on migration are not linear and in some cases, climatic risks and conflict can suppress migration due to reduced capabilities to migrate (Black et al. 2013). There is however limited evidence regarding immobile populations and the particular challenges and vulnerabilities they face in situations of distress (Cundill et al. 2021; Nawrotzki and

DeWaard 2018). Understanding how different types of climatic and non-climatic risks interact and how they shape (im)mobility can advance evidence regarding future climate change impacts and support policy efforts to better protect the most vulnerable populations.

To date, there is limited number of empirical studies which simultaneously examine the interactions between climate and conflict as a potential driver of migration. In their meta-analysis of the climate-migration link based on 30 studies, Hoffmann et al. (2020) present the evidence of conflict acting as a moderator and mediator of the relationship between climate and migration. Meanwhile, Abel et al. (2019), provide the first evidence demonstrating how droughts can trigger conflicts, which in turn lead to an increase in asylum-seeking flows. However, these relationships are specific to certain times and contexts. Focusing on aggregated country-level analyses, the two studies are not able to capture climatic and conflict events that occur at a local context. The relationships observed between aggregated variables can also suffer ecological fallacy since they may not represent the true association at an individual level.

To this end, exploiting individual-level data on migration intention, our study aims to investigate *whether* and If so *how* exposure to climatic shocks and conflict events independently and jointly influence intention to migrate in the Middle East and North Africa (MENA) region. Studying migration intentions helps to understand the factors that motivate migration, which might not be fully captured when examining actual migration alone as the latter relies exclusively on individuals who have already migrated (Mjelva and Carling 2023). In addition, exploiting the survey question in the Gallup World Poll which explicitly askes those who express they wish to move to another country in the next 12 months whether they have done any preparation for this move (Migali and Scipioni 2019), it is possible to analyse the mismatch between migration aspirations and capabilities. This allows us to capture demographic, socio-economic and geographical heterogeneities in climate and conflict driven mobility and immobility, which remains understudied in the literature.

Data

Migration intention data

1. Arab Barometer surveys

The Arab Barometer is nationally representative publicly available surveys capturing the opinions and attitudes of citizens in the Middle East and North Africa (MENA) region. We use the Arab Barometers surveyed between 2010 to 2022 covering 13 countries (n=80,058) which contain the question on migration intention. The surveys asks: *"Some people decide to leave their countries to live somewhere else. Have you ever thought about emigrating from your country?"*. This allows us to measure the intention to migrate abroad. The survey also contains information of the sub-national regions where the respondents live allowing us to measure exposure to conflict and climatic events in the local context.

Table 1 presents the distribution of the dependent and independent variables used in this study including the countries coverage in the data.

2. Gallup World Poll

We also supplement the analysis based on the Arab Barometer surveys with the Gallup World Poll which is a comprehensive public opinion survey that spans over 150 countries. Gallup conducts interviews with a nationally representative sample of the population aged 15 and older accounting for approximately 1,000 individuals in each country. We will use 15 countries from the MENA region covering the period from 2008 to 2022. (The analysis is currently being conducted and the results will be available by the IPC 2025 conference).

To measure migration intention, the Gallup asks: *"If given the opportunity, would you prefer to move permanently to another country, or would you rather stay in your current country?"*

Conflict data

Conflict data are obtained from the Uppsala Conflict Data Program (UCDP), containing georeferenced and sourced data for occurrence of conflict available from 1989 to 2023 (UCDP Georeferenced Event Dataset (GED) Global version 24.1) (Davies et al. 2024; Sundberg and Melander 2013). Both state-based and non-state conflict is included. Uppsala defines a conflict as being active if there are at least 25 battle-related deaths per calendar year in one of the conflict's dyads. There are 14,009 conflicts recorded in the Arab region and 23,946 conflicts in Africa. We assigned georeferenced IPUMS and GADM codes (e.g., Tripoli – LBY.20_1) to districts in both the UCDP and for each wave in the Arab Barometer datasets. Using the IPUMS and GADM codes, we are able to merge the conflicts to the location of interview of the respondents in the Arab barometers.

Climate data

A gridded time-series data (0.5° latitude by 0.5° longitude grid) for precipitation and average temperature are obtained from the Climate Research Unit, University of East Anglia (CRU TS v. 4.08) covering the period 1901-2023 (Harris et al. 2020). Following the previous finding that droughts affect conflict in Western Asia (Abel et al. 2019), we use the Standardised Precipitation-Evapotranspiration Index (SPEI) – a multiscalar drought index – obtained from the CRU-TS to capture drought exposure.

Methods

We analyse how exposure to conflict events in the last 30 days and SPEI-3 which monitor precipitation-evapotranspiration anomalies over 3-month accumulation periods is related to individuals' migration intention. The model specification is written as follows:

$$y_{it} = \alpha_{r(i)} + \beta X_{r(i)t} + \gamma Z_{it} + \eta_{c(i)t} + \epsilon_{it}$$

Y is intention to move abroad, coded 1 if intending to migrate; 0 otherwise

X is the measure of exposure to drought or conflict

Z is a set of individual controls (education, sex, age, employment and marital status)

A is district fixed effects.

η is country-year fixed effects.

Preliminary results

See Tables 2 and 3.

Discussions

We find evidence that migration intention increases with exposure to conflict in the last 30 days. The higher the SPEI-03 which indicates the positive anomalies of precipitation-evapotranspiration is also positively associated with intention to migrate. In other words, drought events would suppress migration intention while positive rainfall shocks would increase migration intention. The interaction term between conflict x SPEI-03 is positive indicating that if the respondents are exposed to both conflict and positive SPEI, they would be more likely to express intention to migrate abroad. The heterogeneity analyses indicate that these effects vary by gender, education and financial status of the household.

The next steps are to explore if the results hold in the Gallup World Poll data. We will also investigate if the migration intention results in planning to migrate (based on Gallup data) and in particular demographic and socioeconomic heterogeneities in migration aspiration-realisation.

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Table 1: Descriptive distribution of variables used from the Arab Barometer surveys

Variables	Mean	Std. dev.
Intention to emigrate abroad	0.31	0.46
Female	0.50	0.50
Age	38.32	14.30
Employment status		
Employed	0.32	0.46
Self employed	0.10	0.30
Student	0.13	0.34
Not working	0.45	0.50
Education level		
Elementary/No education	0.28	0.45
Secondary	0.47	0.50
Tertiary	0.26	0.44
Marital status		
Single	0.30	0.46
With a partner/married	0.64	0.48
Divorced/Widowed	0.07	0.25
Country		
Algeria	0.11	0.32
Egypt	0.08	0.28
Iraq	0.10	0.30
Jordan	0.13	0.33
Kuwait	0.04	0.21
Lebanon	0.12	0.33
Lybia	0.07	0.26
Mauritania	0.02	0.15
Marocco	0.09	0.29
Saudi Arabia	0.02	0.13
Sudan	0.08	0.27
Tunisia	0.08	0.27
Yemen	0.04	0.20
Number of observations	80,058	

Table 2: Baseline results: Linear probability estimation of intention to migrate abroad

Main variables	Model 1	Model 2	Model 3
SPEI-03	0.0520***		0.0562***
	[0.016]		[0.022]
Conflict		0.0345***	0.0417***
		[0.014]	[[0.017]
Precipitations*Conflict			0.0339*
			[0.020]
Observations	80,058	80,058	80,058
R-squared	16.76	16.25	16.78
Individual controls	Yes	Yes	Yes
Country*Year FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes

Table 3: Heterogeneity analysis: Linear probability estimation of intention to migrate abroad

	Male	Female	Low Edu	Middle Edu	High Edu	Financially unstable	Financially stable
SPEI-03	0.015	0.063***	0.092***	0.01	0.060**	0.055***	0.03
	-0.021	-0.021	-0.025	-0.022	-0.028	-0.021	-0.021
Conflict	0.060**	0.051*	0.035	0.050*	0.060*	0.053**	0.051
	-0.028	-0.026	-0.033	-0.027	-0.033	-0.022	-0.031
SPEI-03*Conflict	0.052**	0.021	0.029	0.038	0.009	0.045**	0.021
	-0.026	-0.022	-0.032	-0.025	-0.033	-0.022	-0.029
Observations	40,101	39,957	22,145	37,465	20,444	45,034	33,149
r2	0.19	0.15	0.18	0.16	0.18	0.18	0.17
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country*Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes