Measuring Vulnerability of Refugees in High Income Countries: Evidence from Germany

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Introduction and literature review

The UNHCR -United Nations High Commissioner for refugees- (2019) data assessed 25.9 million of refugee worldwide in 2018. Most of them fled in neighbourhood countries. Refugees living in camps, such as those in Jordan, experience hard living conditions (Krafft et al., 2018). Similar conditions are experienced in Lebanon where the Government decided not to have official refugee camps in order to make not visible the huge amount of hosted refugees (16.7% of its population according to the UNHCR registration).

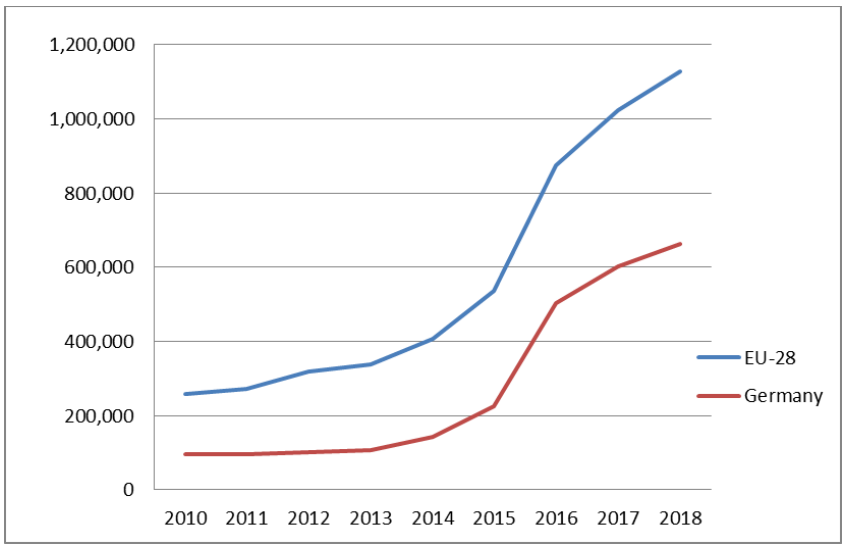
In recent years, a growing number of refugees arrived also to Europe and several countries are struggling in processing the high number of applications for international protection. The 2018 was a peak year in Europe, following the preceding 5 years of steep increase. Eurostat database counts for 1,127,690 new refugees in EU-28 at 31st December 2018 (up to 1,635,289 considering also holders of subsidiary protection), of these 662,954 were hosted in Germany (up to 888,016 including subsidiary protection).[1] See Figure 1 for the recent trends. Recently emerging conflicts in West Asia and in several African countries make reasonable to think that these flows and stocks will increase rapidly in the next future.

While there are several academic and institutional studies on the quality of life and the vulnerability of refugees in medium-low income countries, mostly on Lebanon and Jordan

[1] Eurostat database "Asylum and Managed magrition database", <<All valid permits by reason, length of validity and citizenship on 31 December of each year [migr_resvalid]>>. Last update: 10-10-2019. Accessed 01-11-2019.

(Verme et al., 2015; El-Khatib et al. 2013) very few studies are available on the vulnerability of refugees and asylum seekers in Europe (see e.g., Brucker et al., 2019; Busetta et al., 2019; Kohlenberger et al. 2016), most of them focus on health conditions (Mendola and Busetta, 2018, Pavli and Maltezou, 2017).

Figure 1 - Refugee permits at 31st December of each year



Source: Eurostat: "All valid permits by reason, length of validity and citizenship on 31 December of each year [migr_resvalid]. Accessed 1st November 2019

The most known tool for assessing the vulnerability of refugees was developed in 2017 by UNHCR: the Vulnerability Assessment Framework (VAF) (UNHCR 2017 and 2018). It is a scoreboard for targeting individuals for intervention. The VAF encompasses 10 thematic areas, through 65 indicators, covering a wide spectrum of needs of refugees in camps (health, shelter, food security, documentation, education, economic deprivation, etc.). Noteworthy the UN's Vulnerability Assessment Framework hardly fits in high income countries where the notion of vulnerability goes beyond that of basic needs.

Very few proposals for alternative measurement strategies are available on the vulnerability of refugees and asylum seekers in high-income countries. Among these Black(1994) in his qualitative study on Iraqi and Iranian refugees in Greece discuss about adequacy of several indicators for measuring vulnerability at household and individual level; Busetta et al. (2019)

propose a latent class approach and compare it to a pragmatic (i.e. counting) approach to measure vulnerability among refugees and asylum seekers living in informal settlements in Italy; Dhesi et al. (2018) focus on the assessment of the environmental health conditions and associated vulnerability of migrant residents in the Calais (France) refugee camp, analysing a set of indicators but not providing a synthetic measure of multidimentional vulnerability; in and Mendola and Busetta (2018) focus is on two health outcomes of forced migrants living in informal settlements in Italy and find that they are associated with both personal and settlement characteristics.

In this paper we focus on Germany, that is the 5th in the worldwide ranking of hosting countries for refugees (UNHCR, 2018) and is the first in Europe. About two years ago German Migration office and Employment Office realised a rich household survey on refugees and asylum seekers hosted by the official reception system. The report of Brucker et al. (2019), based on this survey, is of considerable interest for the perspective from a developed country it takes on. The protection status of refugees as well as their language skills favour an easier integration; access to the health system and resettlement in more economically favourable geographical areas show a positive effect too.

Data and sample

The IAB-BAMF-SOEP Survey of Refugees in Germany is a survey of people who entered Germany between 2013 and 2016 and applied for asylum, whatever the results of the application. It is carried on by the national employment office and Migration office of Germany (IAB and BAMF[2]) and follows the German Socio Economic Panel questionnaire (GSOEP). It includes information on individual socio-demographic characteristics (such as education, labour market participation, migration background, legal status) and household level information (housing, deprivation, use of welfare services, benefits, household roster). The survey is longitudinal and provide for yearly interviews of household members aged 18 and over.

In this study we rely on the first wave of the survey, referring to survey year 2016. Our sample is made of 3,072 adults, with a prevalence of men (62%), a mean age of 33.6 years, with

[2] Bundesamt für Migration und Flüchtlinge (Federal Bureau for migration and refugees).

four nationality (Afghan, Eritrean, Iraqi, and Syrian) accounting for about 82% of the sample.[3] Among them only 59% was granted by some form of international protection, e.g. refugee status (73,66%), international protection, status of tolerance, while the remaining 41% is lacking of this status (among these 85.67% are asylum applicants with a pending request).

As highlighted by Black (1994, p. 362) "*it could be argued that in terms of their personal circumstances and experiences, all refugees could be considered as politically 'vulnerable', in the sense that they require protection, normally from the host state, against forcible repatriation to their country of origin*" and hence one could conclude that measuring vulnerability on refugees is a tautological exercise. Indeed considering all refugees as vulnerable *per se*, especially in high income countries, with extensive welfare regimes and a high level of human rights guaranteed could reinforce the point raised by Harrell-Bond (1986) that "refugee assistance regimes themselves promote dependency, by usurping the decision-making and organizational capacity of refugee individuals and communities" (see Black, 1994).

Our idea is that a "fine tuning" of vulnerability measures can help in better targeting welfare policies and local authorities' interventions in favour of refugees, allowing to identify people prospectively more exposed to consequences of unexpected bad events.

Methods

There are several definition of vulnerability, that still remains a vague term. Most of them come from the literature on disaster management and environmental risks assessment. In this paper we operationalized the vulnerability as the joint probability of experiencing interdependent risks, namely those of social isolation, economic deprivation and bad health.

Figure 2 shows our theoretical model.; it assumes that vulnerability is a potential property of our target population, measured by the joint effect of these three risks.

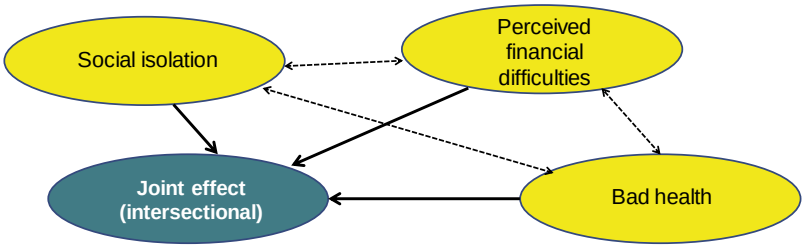
In order to accomplish for the interdependence of risks, we estimated a trivariate generalized logit model[4] to evaluate how individual and household characteristics are associated

[3] Note that these four nationalities were purposively over-represented in the survey design in order to assure a proper presence in the following waves of the survey. Afghans, Eritreans, Iraqis, and Syrians are expected to stay permanently in German since is likely they could not come back to their origin countries.

[4] We wish to thank our colleague Paolo Li Donni, from the University of Palermo, for providing the STATA code to estimate this model and for helping us in understanding its features.

to the probability of experiencing each risk and make inference also on the association between pairs of risks, conditionally to a set of selected covariates.

Figure 2 - Theoretical model of interdependent risks



We model the univariate marginal distribution by assuming a linear model for the global logit, that is, for each *k = 1, 2, 3,*

$$\log\frac{\Pr(Y_k = 1)}{\Pr(Y_k = 0)} = -\gamma_k + z_k^{'}\tau_k \qquad (1)$$

where Y_1 is the outcome variable "social isolation", Y_2 refers to "perceived economic difficulties" and Y_3 to "bad health".

The marginal association between each pair of responses is modeled by the global odds ratios:

$$\lambda_{\mathrm{hk}} = \log\frac{\Pr(Y_h = 1, Y_k = 1 \mid z)\Pr(Y_h = 0, Y_k = 0 \mid z)}{\Pr(Y_h = 0, Y_k = 1 \mid z)\Pr(Y_h = 1, Y_k = 0 \mid z)} \quad \forall\, h, k \in \{1,2,3\} \qquad (2)$$

Our model includes a core set of variables explaining all the observed outcomes (household composition, education, employment, years since migration, legal status and nationality groups) and specific sets pertaining to each single risk Y_k. The whole set (matrix) of covariates is here referred as *Z*. The model for the risk of social isolation particularly includes language skills, social network and health measures; the risk of perceived financial difficulties is modelled including

also benefits dependence, health and quality of housing measures, the one for the risk of bad health includes quality of housing and benefit dependence.

First results

Preliminary results show how people from most unsafe countries (Syria, Afghanistan, Iraq, Eritrea), who are more likely not coming back home in the future, have a reduced risk to experience vulnerability , other things being equal (including their legal status). This could be due to a more active behaviour in grounding in the German society and in reaching a greater economic and social integration.

As expected, being entitled of any form of international protection (mostly refugee status), being employed, living in a private accommodation and having social interactions with Germans or compatriots are effective in reducing the exposure to risks. Health covariates are always significant and increase the risk of both social isolation and perceived economic difficulties.

The significant conditional association between the three risks provide a criterion for the eligibility of an approach of simultaneous estimation. Particularly given Y_1 the risk of social isolation, Y_2 of economic deprivation, and Y_3 of reporting bad health, conditionally on all the covariates used in the estimation of the model (1), we estimated the following odds ratios[5]: $OR_{y1y2|z} = 2.11***$, $OR_{y1y3|z} = 1.31***$ $OR_{y2y3|z} = 1.46***$.

One of the main outputs of our model is the predicted probability of experiencing one, two or three risks jointly. It is important to say that the model in equation (1) and (2) estimates eight different probabilities for each individual, corresponding to the 2^3 combination of three dichotomous risks. Table 1 provides a useful synthetic tools for grading risks, assumed as measures of different level of vulnerability. It shows mean estimated probabilities over the selected sample and their standard deviations for each vulnerability profile, defined, in the second column, in terms of presence (1) or absence (0) of each of the three risks. Mean

[5] These odds ratios are the exponential form of lambdas estimated by equation (2).

probabilities in Table 1 can be assumed also as a measure of the (model) predicted incidence of each of eight vulnerability profiles.

Table 1 - Vulnerability assessment scale

VULNERABILITY	*isolated-econ. deprived-in bad health*	*mean estimated probability*	*dev. st*	*min*	*max*
SEVERE	1-1-1	0.018	0.035	0.000	0.470
HIGH	1-0-1	0.017	0.030	0.001	0.336
	1-1-0	0.068	0.044	0.001	0.395
	0-1-1	0.073	0.111	0.002	0.633
MODERATE	1-0-0	0.098	0.049	0.003	0.420
	0-1-0	0.535	0.172	0.010	0.925
	0-0-1	0.030	0.049	0.000	0.339
LOW	0-0-0	0.153	0.06	0.004	0.434

The condition of severe vulnerability refers to a very small amount of individuals who may be the target for the first intervention. On the opposite side of our scale, the level of low vulnerability may concern about 15% of individual and, in this case, less or no aid is presumably needed. Comparing the other different levels of our vulnerability assessment scale, the highest probability is associated with economic deprivation that, controlling for the other two risks, has a mean value of 0.53. Other conditions has probabilities relatively low, not exceeding 9% .

Indeed looking at confidence interval (CI) at 95% for the estimated mean probabilities in column 3 of Table 1 -not reported here for the sake of brevity- we note that the first two vulnerability profiles (111 and 101) have overlapping CIs, while the remaining profiles are neatly different.

The upper tail (last decile) of the distribution of p_{111} (the joint probability of experiencing all three risks, i.e. the condition of severe vulnerability) may be assumed as the target population for more urgent policy intervention. Socio-demographic characteristics of this subgroup will be the focus of our further analyses.

Concluding remarks

Our target population is made by individuals with a peculiar legal status that made them the target for specific welfare interventions and identified them according to international laws regulating their safeguards. These people have a background of vulnerability that obliged them to fled from origin countries. In this paper we wonder if in their new country of residence the vulnerability of asylum seekers and refugees has been replaced by new forms of vulnerability and what factors are eventually associated to these new status of vulnerability.

Our analyses showed that:

a. It is possible to identify among refugees some selected subgroups particularly vulnerable according to their vulnerability profiles (i.e. severity of vulnerability). They should be the targeted for early interventions;

b. It is possible to detect what risk/s is/are more likely to make them more exposed, hence more vulnerable, allowing to address interventions toward specific hampering conditions.

Indeed, factors predicting vulnerability often change depending upon the way in which vulnerability is measured. Scoreboard approaches , ignoring the double counting effect implied by adding highly interdependent factors of risks (such as it is the case for the VAF exercise), may not provide a correct priority ranking of people needing aid.

While granting refugees access to the country is an expression of humanitarian responsibility, their subsequent well-being and integration is primarily a challenge for economic policy, beyond obligations derived by the 1951 Convention of Genève. A proper vulnerability assessment framework would be useful in order to better targeting assistance of refugee and asylum seekers in Europe.

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