Exploring the future migration to Europe by means of a factorial survey experiment

Michaël Boissonneault, Rafael Costa, Helga de Valk

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Abstract

Scenario planning was developed following World War II as a tool that allows to qualitatively assess, by means of narratives, how different forces might develop in the future to lead to different scenarios regarding a phenomenon of interest. During the last decade, scenario planning has been increasingly used to help policy makers reflect on how key drivers of migration might develop and interact to lead to different migration outcomes between two countries or regions. However, few attempts have been made at estimating what the resulting narratives might imply in terms of migrant numbers. Here we use a factorial survey experiment to elicit expert judgment about the potential consequences of various narratives for migration flows between Europe and the Middle East & North Africa to the horizon 2030. The use of a factorial survey entails the use of vignettes, which allow more complete depictions of future hypothetical situations than single-item questions, leading to more realistic and nuanced expert assessment. Furthermore, by varying systematically the values of the items making up the vignettes, we are in state of identifying the factors that cause variation in the assessments. Results from this survey will allow to identify which of the demographic, cultural, political, and economic factors that, by themselves or combined, have the potential to disrupt migration flows between Europe and the Middle East & North Africa. Our approach helps bridging the gap between qualitative and quantitative approaches at describing the future of migration and constitutes an enhanced tool for guiding European migration policy.

Extended abstract

Introduction

Scenario planning refers to the set of tools developed in the 1950s by military intelligence that consist of identifying for an outcome of interest the most impactful yet uncertain drivers of change, to then develop narratives that describe how these drivers could evolve and interact in the future to impact the outcome of interest (Bradfield et al., 2005). Scenario planning exercises typically rest on two hypothetical directions of change in two drivers, resulting in four narratives—also often called scenarios. These narratives are descriptive by nature, as they are composed of a storyline that describes the relevant changes and how they relate to each other and the outcome of interest. Since their inception, scenario planning methods has been commonly used in business and political science and have proved useful for stimulating forward thinking and help decision making (Wilkinson & Kupers, 2015; Wright & Cairns, 2011).

Given its usefulness for decision making, scenario planning constitutes an attractive tool for exploring the future of migration. It is however only in the late 2000s that international organizations started using scenario planning to discuss the future of migration between two countries or regions (OECD, 2009). Current applications of scenario planning to the problem of migration include studies performed by large international organizations such as the Organization of Economic Co-operation and Development (OECD) or the European Union (OECD, 2016; Szczepanikova & Van Criekinge, 2018). These describe most often how future migration flows between less developed countries and more developed countries might evolve as a function of changes in economic output and governance, either in sending or receiving countries, or both (Boissonneault et al., 2020). Despite the ability of these exercises to stimulate forward thinking among the involved parties, it remains unclear how scenarios sketched during scenario planning exercises could be associated to higher or lower future migrant numbers. Yet, in demography and economics, population projections are often carried out that aim at describing plausible pathways of change in the number of migrants between two countries or regions (Disney et al., 2015; Sohst et al., 2020). However, such exercises usually place little emphasis on how the different drivers might interact and lead to higher or lower future migrant numbers, and as a result it remains mostly unclear under which circumstances future migration flows might significantly change regarding any pair of countries or regions.

Recent studies have proposed different approaches to bridge the gap between the qualitative nature of scenario planning and the quantitative approach inherent to population projections. For example, the International Institute for Applied Systems Analysis proposes in its recent population projections for all of the world's countries different migration intensities that match the narratives developed within the Shared Socio-economic Pathways (SSP) (KC & Lutz, 2017). In doing so, the authors attribute to the different SSP scenarios different migration intensities; however, it remains unclear which elements within each SSP scenario is responsible for the supposed increases or decreases in migrant numbers.

In a more recent study, Acostamadiedo et al. identify based on previously published migration narratives four scenarios of change in migration flows between Europe and less developed

countries between the years 2020 and 2030 (Acostamadiedo et al., 2020). By means of a Delphy-type survey, they ask experts to estimate for each scenario the relative increase in the number of migrants in relation to the observed flows for the period 2008-2017. Results point toward a maximum increase in the number of migrants of 44 percent in a scenario of economic divergence and multilateralism and a minimum increase of 21 percent in a scenario of economic convergence and unilateralism. The approach proposed by Acostamadiedo et al. suggests that cooperation between countries (multilateralism vs. unilateralism) might play a key role in driving future migrant numbers. However, the method does not allow to determine the exact size of the impact of change in the different drivers on the experts assessments. What is more, this approach concentrates solely on two specific drivers of migration, and does not allow to draw conclusions about the role that other factors could play regarding future migration flows or how these might differ between sending and receiving countries.

In this study, we aim to bridge the gap between qualitative and quantitative approaches at defining migration scenarios by means of a factorial survey experiment. Factorial survey experiments are commonly used in psychology and marketing to elicit judgment about topics that are too complex or sensitive to be presented using single-item questions (Wallander, 2009). Factorial survey experiments make use of vignettes, "short, carefully constructed description[s] of a person, object, or situation, representing a […] combination of characteristics" ((Atzmüller & Steiner, 2010), p. 28). By systematically varying the elements that make up the vignettes, one is in state of establishing which elements in the vignettes causes variation in the respondents' judgment, lending this type of approach high internal validity.

In this study — which is part of the Horizon 2020 QuantMig project — we use vignettes to elicit judgment among experts about the conditions that will lead to higher or lower migration flows between Europe and the Middle East & North Africa between the years 2021 and 2030. The main advantage of using this approach is that it allows to present respondents with situations that render better than single-item questions the complexity of the determinants of migration flows. This approach, we argue, provides enhanced expert judgment on future drivers of migration flows because it forces experts to take into account tradeoffs and interactions between drivers.

Methods

The content of the vignettes is inspired by de Haas et al.'s social transformation theory (Haas et al., 2020). This theory suggests that social change can be understood through its demographic, cultural, technological, political, and economic dimensions. Based on a review of the determinants of migration and recent empirical work (Czaika & Reinprecht, 2020; de Haas & Fransen, 2018), we identified for each dimension of social change migration drivers that are specific to each country group. These are for the Middle East and North Africa the proportion of young people in the population (demographic), the degree of religious fundamentalism (cultural), political stability (political), and unemployment levels (economic). For Europe, we identified the proportion of older people in the population (demographic), attitudes toward immigrants (cultural), migration policies (political), and unemployment levels (economic). We omitted for each group of countries the technological dimension as it is very difficult to predict how changes in this dimension will affect migration. Second, we identified two opposite directions of change for each driver identified in

the first step. These changes are meant to represent plausible outcomes that differ sufficiently from the present situation to allow to explore the full range of the possible impact on migration and were inspired by previous applications of scenario planning to the problem of migration (Acostamadiedo et al., 2020). In a third step, we combined the different directions of change in the different drivers to form vignettes. To keep the number of factors (drivers) and their levels (directions of change) as low as possible, we consider for the economic dimension convergence or divergence in employment levels between sending and receiving countries instead of independent changes in both groups. Figure 1 shows an example of the vignettes highlighting the different values that each factor may take.

Our choice of drivers and combination thereof produced a total of seven factors with each two levels, leading to a total of (2^7) 128 distinct vignettes. During the coming months, we will ask migration experts to evaluate the implication of the situations depicted by the vignettes for migration between Europe and the Middle East & North Africa. We will use 32 different survey versions (or blocks) and ask each respondent to evaluate four vignettes. This approach allows to assess intra-respondent variation in the assessment of the effect of the different drivers while limiting the burden on each respondent (Auspurg & Hinz, 2014). We used the command *optBlock* of the R package *AlgDesign* to optimize the design of the questionnaires with respect to the content of their vignettes (Wheeler, 2014).

Figure 1 Vignette example

During the period 2021-2030,

In the Middle East & North Africa,

The proportion of young people **increased/decreased** as a result of **increases/decreases** in the number of children by woman.

Religious fundamentalism has **gained/lost** ground.

Countries have become **more/less** politically stable.

Unemployment rates have **increased/decreased**.

In Europe,

The increase in the proportion of older people has **accelerated/slowed down** as a result of **increasing/stagnating** survival probabilities at older ages.

People have become **more/less** favorable to immigration from North Africa and the Middle East.

Immigration policies have become **more/less** restrictive.

Unemployment rates have **increased/decreased**.

Note: actual vignettes contained in the survey present respondents with one of the two levels indicated in bold (not both) and each vignette contains a unique combination of levels across the different factors.

Respondents will be asked to assess the impact of the situations described by the vignettes on the number of family migrants, work migrants, refugees, and return migrants. The first three migrant types refer to the reason for granting a residence permit by the host country while return migrants

refer to the Middle East & North African nationals who return to their country of origin after having been granted a residence permit by a European country. Respondents will be given eleven options to indicate the amount of expected changes in terms of migrant numbers, including a division by a factor of one and a fourth, one and a half, two, three, and five, a multiplication by the same factors, or no change with respect to the level observed in the year 2019. When asked to indicate the number of migrants they expect in the year 2030, experts will be presented with a graph that shows the observed trends for each type of migrant during the period 2010-2019 and the level implied by their answer. Next to the assessment of migrant numbers implied by the vignettes, respondents will be asked about the amount of change in the number of migrants in the year 2030 in relation to 2019 supposing a continuation of the trends in the demographic, cultural, political and economic factors influencing migration flows. Respondents will also be asked about personal information such as their degree of familiarity with migration issues, their employer's industry, their highest educational degree, and their number of years spent working on migration issues. Data will be collected by means of a custom-made web-based survey.

Our target population consists of anyone with professional experience with migration or migrants. Our sample will be stratified according to the sphere of professional activity, i.e. academia, government, or the civil society. Potential respondents were identified using a three-step approach. First, we made a list of European organizations that deal with migration based on the lists of organizations provided by the different countries member of the European Migration Network (EMN). In the second step, we enriched the EMN-based list by adding to it official statistical agencies, national offices of the International Organization for Migration (IOM), and organizations that are partners of the International Migration Research Network (IMISCOE). Lastly, for each organization identified in the first two steps, we identified at least one person who represents a potential participant to our survey, or who could refer us to another person within their organization who could represent a potential participant. Invitations to participate to the survey will be sent during the months of November and December 2021.

Expected results

Outcomes will include experts' assessments of the change in the number of migrants between Europe and the Middle East & North Africa in the year 2030 with respect to levels in the year 2019 supposing changes in the demographic, cultural, political, and economic drivers of migration in each country group. We aim at collecting data among five experts per questionnaire version, for a total of 640 vignette evaluations from 160 experts. To control for respondent and block effects, we will use ordinary least square regression models with random effects and cluster robust standard errors. Concerning the Middle East & North Africa, we expect higher proportions of young people, higher levels of religious fundamentalism, lower political stability, and higher levels of unemployment to be linked with higher expected numbers of migrants in the year 2030. Concerning Europe, we expect higher expected numbers of migrants to be linked with higher proportions of older people, higher levels of favorability toward immigrants, less restrictive immigration policies, and lower levels of unemployment. Lastly, we hypothesize that the interaction between specific factors will lead to larger expected numbers of migrants compared to the sum of their effects.

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