3.

GLOBAL COMPACT FOR
MIGRATION OBJECTIVES

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DATA

Facebook advertising data in Africa
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Abstract: This chapter presents a descriptive analysis of migration-related data from Facebook's Advertising Platform for the African continent. It provides an estimate of the raw number of migrants in Africa, and a disaggregation by country of origin and by sex. According to the data, the total number of "migrants" – Facebook users who "live abroad" in Africa, regardless of the country of origin – is 10.4 million. Analysis hints at the potential value of the data, while also illustrating challenges for any cross-national work, due to the strong heterogeneity of Facebook use. Digital trace data offer an opportunity for migration studies in low- and middle-income country contexts, and can be used to complement rather than replace traditional data sources.

3.1. Introduction

Migration is difficult to estimate due to lack of data and different measurement approaches across countries (Willekens, 1994). Migration is expected to be the main driver of population change in the current century (Bijak, 2010). Demographers are aware of the measurement challenges and for decades have been working on methodologies that aim to harmonize multiple data sources across countries (Willekens, 1994, 2019). More recently, researchers have started to study whether new types of data (such as mobile phone data, satellite imagery or social media data) might address some of the challenges (Blumenstock, 2012; Spyratos et al., 2018; Tatem, 2017; Zagheni et al., 2017), despite the fact that using digital traces as a source of migration data has its own set of issues (Laczko and Rango, 2014). In this short piece, we present some descriptive analysis on migration-related data from Facebook's Advertising Platform for the African continent.

Contrary to common narratives in Europe, much of the African migration happens within Africa (Bakewell and de Haas, 2007; Castles et al., 2013; Flahaux and de Haas, 2016). The other main destinations of African migration flows are Europe, the Gulf countries, and the United States (Bakewell and de Haas, 2007). The main data sources of migration in Africa are censuses and surveys. However, these data lack (a) accuracy, (b) disaggregation by characteristics of the migrants, and (c) timeliness (Schoumaker et al., 2013). Beauchemin (2018) led a survey project called "Migration between Africa and Europe" (MAFE), which included nine countries, three in Africa and six in Europe,

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with the goal of designing surveys that could deepen the understanding of migration within Africa and to Europe. Data from this project have been used to estimate the emigration rate from Senegal (Willekens et al., 2017). However, this project was limited to a small group of countries.

Digital trace data, such as audience estimates provided by the Facebook Advertising Platform, might be an opportunity for migration studies in developing contexts because of the broad number of countries that could be included in the analysis at very low cost. This new source of data has been leveraged to study migration in the United States (Zagheni et al., 2017), outmigration from Puerto Rico, United States and the Bolivarian Republic of Venezuela (Alexander et al., 2019; Palotti et al., 2020), integration of migrants (Dubois et al., 2018; Stewart et al., 2019), gender gaps and fertility (Fatehkia et al., 2018; Rampazzo et al., 2018). In addition, Facebook advertisements can be used to administer cost-effective targeted online surveys (Hoffman Pham et al., 2019). Based on these prior studies, it seems that digital trace data can be used to complement rather than replace traditional data sources, such as censuses and surveys, providing a more detailed and timelier picture.

3.2.   Migration data from Facebook for Africa

Here we explore the feasibility of using advertising audience estimates from Facebook to study migration within Africa. The data were collected in January 2020 and include estimates of the number of Facebook users who, according to the advertising platform, currently live in country X. Furthermore, where possible, we collected data on the number of Facebook users who lived in country X but now live in country Y. Estimates can be further disaggregated by the user's self-declared gender and other attributes. This type of data has been leveraged in several studies (Alexander et al., 2019; Dubois et al., 2018; Stewart et al., 2019; Zagheni et al., 2017), but not yet in the African context. Note, however, that it is not clear exactly how Facebook arrives at the label of "lived in country X" for a given user. The United Nations recommended definition of an international migrant as a "person who moves from their country of usual residence for a period of at least 12 months" (United Nations, 1998). The Facebook definition of the variable does not provide any temporal aspect. This lack of transparency is a key limitation of our approach.

For our feasibility study, we collected the number of monthly active users (MAUs) matching the provided targeting criteria. Using such data points for all supported countries – in particular, the set of countries of origin supported by Facebook is limited – we compute three sets of descriptive statistics: (a) the percentage of Facebook users per country – the Facebook penetration, (b) the availability of estimates of emigrants from particular African countries of origin, and (c) the number of African migrants living in another African country. As a comparison to the Facebook data, we use the United Nations population estimates for 2019.
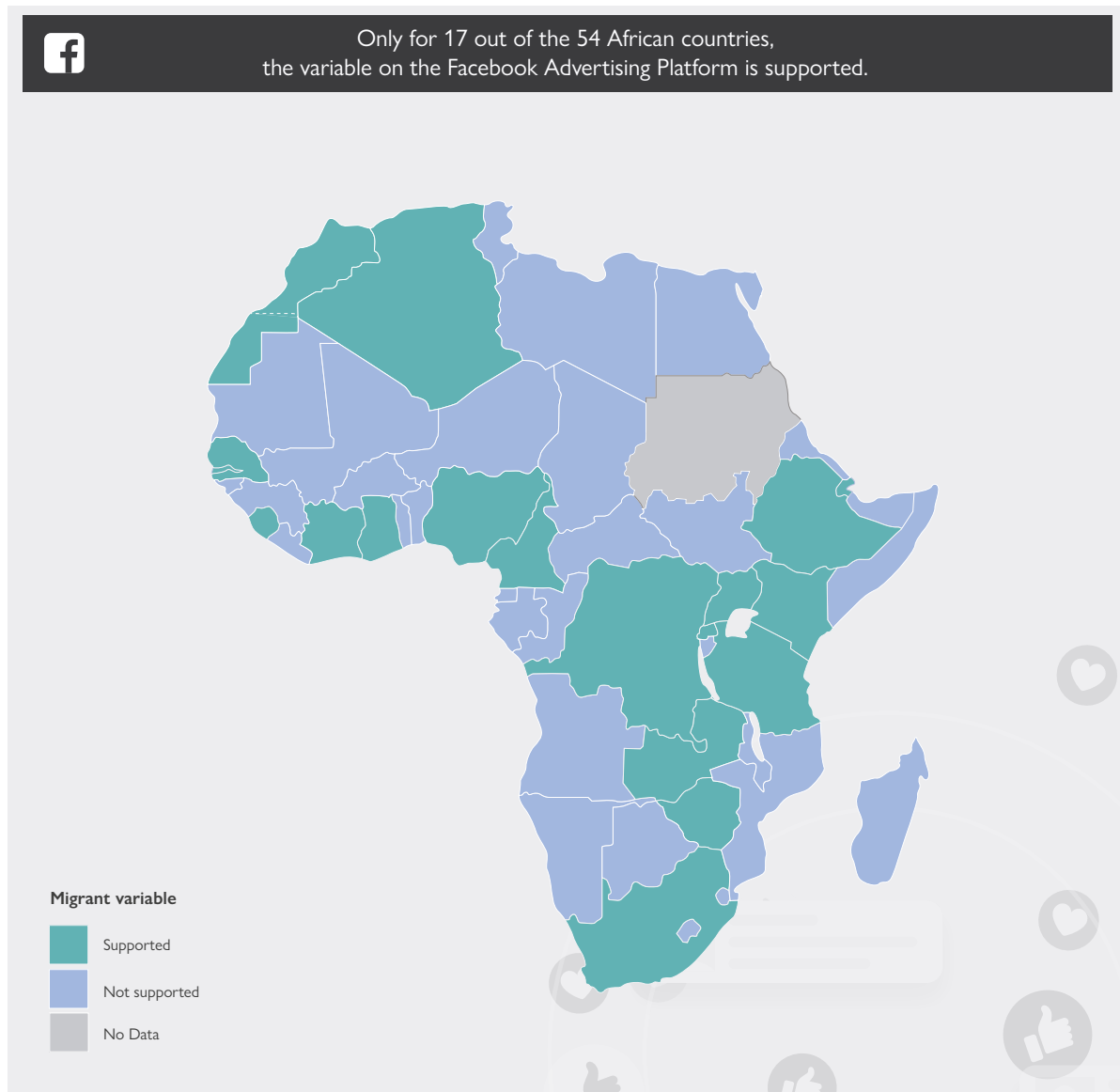
Figure 3.1 shows that Facebook data are available for all African host countries except the Sudan. The percentage of Facebook users, which is calculated as the ratio between the estimate of the Facebook MAUs divided by the estimated population in 2020, is heterogeneous: it is high in North African countries (Morocco, Algeria, Tunisia, Libya and Egypt) and in Southern Africa (Namibia, Botswana and South Africa), but lower in sub-Saharan Africa. Eritrea and the Niger have low Facebook penetration rates – equal to 0.59 per cent and 1.77 per cent, respectively – while Libya (68.10%), Mauritius (60.30%), Seychelles (66.80%) and Tunisia (58.63%) have the highest rates. We need to stress that the Facebook penetration rate might be biased by fake and duplicate accounts, as well as undercounts in the population estimates. Moreover, in 29 of the 54 African countries, the Facebook penetration rate is higher than 20 per cent.

Figure 3.1. Facebook penetration across African countries
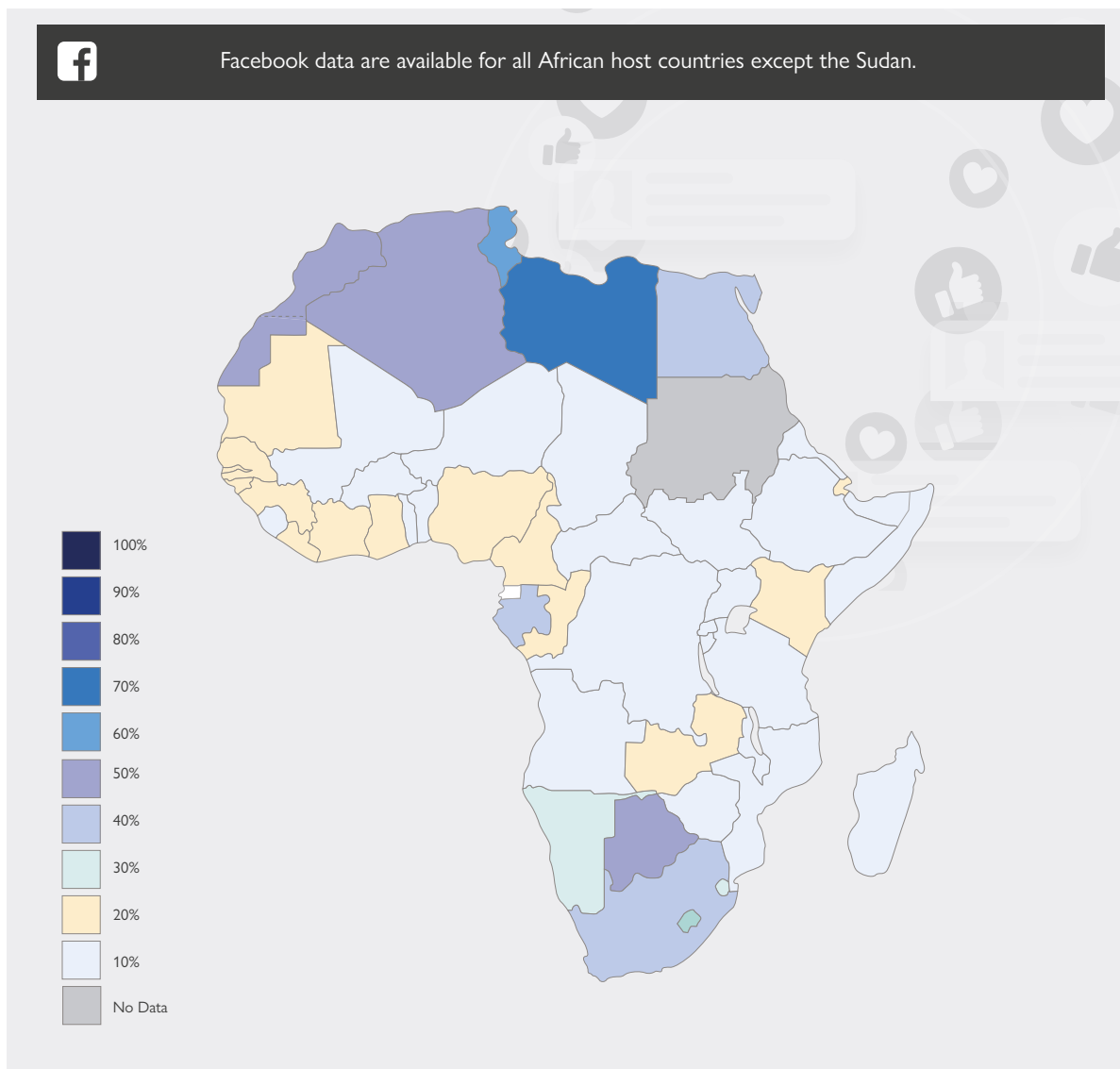
Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

Concerning the country of origin – targeting Facebook users based on the countries in which they lived – Figure 3.2 highlights in green the countries for which estimates of the number of emigrants are available. For only 17 of the 54 African countries is this variable supported on the Facebook Advertising Platform.

Figure 3.2. Countries of origin supported for advertisements targeted using "lived in"

Only for 17 out of the 54 African countries,
the variable on the Facebook Advertising Platform is supported.

Migrant variable

Supported

Not supported

No Data

Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

Figure 3.3. Number of Facebook users living abroad in African host countries, disaggregated by country of origin and self-declared sex
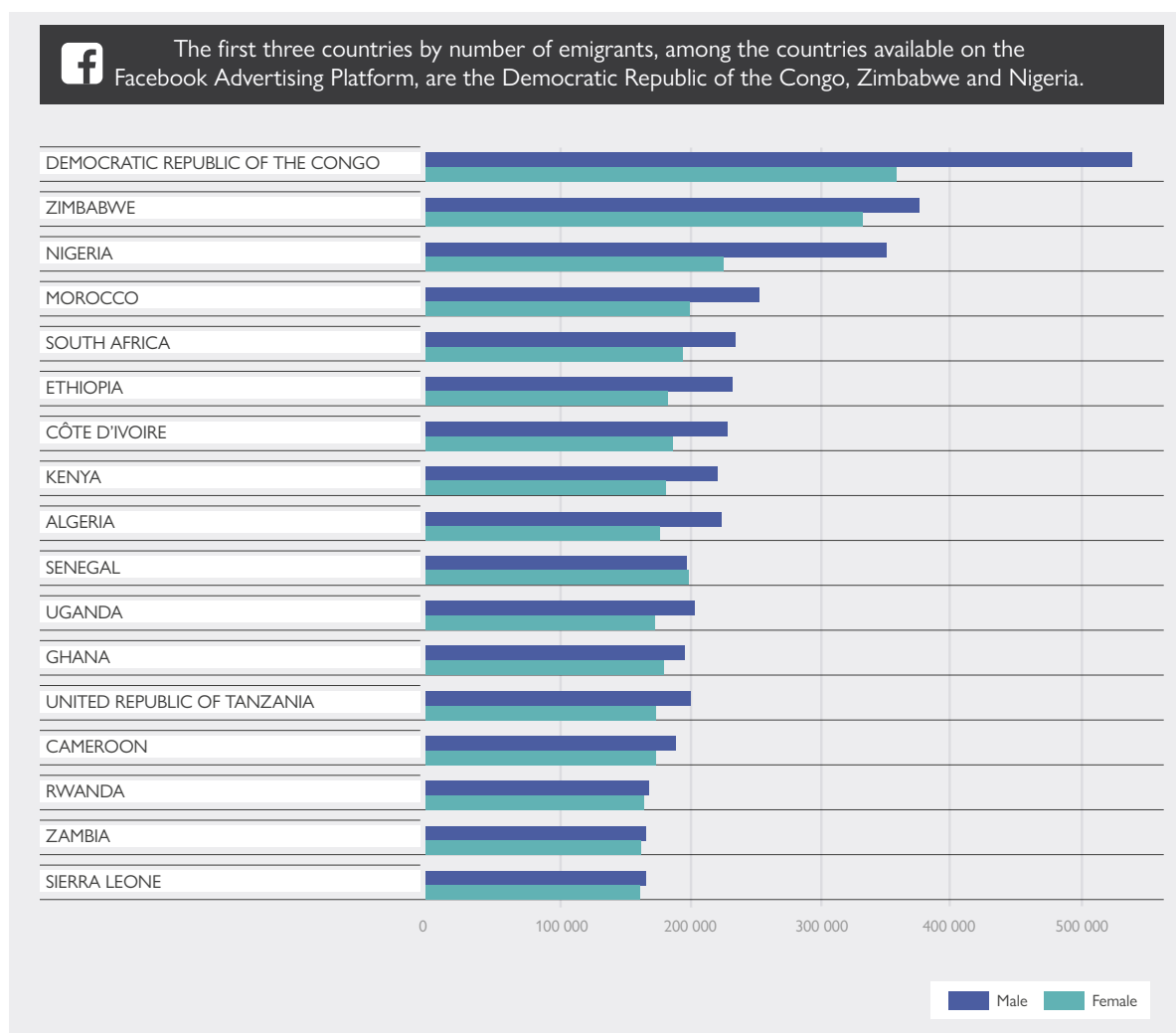
According to data from this platform, the total number of "migrants" – Facebook users who "live abroad" in Africa, regardless of the country of origin – is 10.5 million, which is almost half of the 26.5 million estimate of the international migrant stock in Africa provided by the United Nations Population Division of the United Nations Department of Economic and Social Affairs (UN DESA).[3] Of these, the number of migrants from African countries of origin is 5 million. The difference between the two Facebook figures, 64 per cent, might be explained by African countries of origin not supported by Facebook, or by migrants from the rest of the world.

In Figure 3.3, the number of migrants is shown by country of origin and by sex. The first three countries by number of emigrants, among the countries available on the Facebook Advertising Platform, are the Democratic Republic of the Congo, Zimbabwe and Nigeria. There are generally more male migrants, but the sex ratio is fairly balanced. These estimates can be disaggregated by additional variables such as age, self-declared education level, inferred interests, or device types used – often a strong proxy for the relative income (Palotti et al., 2020).

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[3] Available at www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp (accessed 14 May 2020).

3.3. Conclusions

In this description of the Facebook advertising data for Africa, we showed that the percentage of Facebook users varies across countries, and that not all African countries are supported as countries of origin. However, we were able to present a raw number of migrants in Africa, and a disaggregation by country of origin and by sex. Facebook does not provide information on ethic affiliation in African countries. In addition, only a few African languages are supported on the Facebook Advertising Platform. The languages spoken in Africa are limited to Swahili, Afrikaans and Arabic, as well as many European languages. Still, in some settings, the languages supported might provide additional signals, also on internal migration. The analysis presented in this document is at the national level, but could be refined to smaller granularity, such as region, county, city and postal code (depending on the country), as long as the group of interest includes at least 1,000 Facebook users.[4] Overall, our preliminary analysis again hints at the potential value of the data, while also illustrating challenges for any cross-national work, due to the strong heterogeneity of Facebook use. Especially for countries with low Facebook penetration, methodological efforts for correcting biases in the data are required (Zagheni et al., 2017). Research on how to combine digital trace data with traditional data sources is still ongoing. Here, using Bayesian approaches to combine data sources with different limitations seems promising (Gendronneau et al., 2019).

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[4] This is the lower bound set by the Facebook Advertising Platform on the number of Monthly Active Users.

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