


The impact of the Internet on migration aspirations and intentions

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Abstract

This study investigates the relationship between Internet access and migration aspirations and intentions in Africa. While empirical evidence on the role of telecommunications in shaping migration flows is increasing, the relationship between aspirations (desire to migrate) and intentions (migration preparation) has been paid little attention. The analysis is based on the nationally representative 2014 and 2015 surveys of Gallup World Poll in 29 African countries. We modelled migration desire and migration preparation through Probit and Heckman Probit models. The results indicate that having Internet access is positively associated with the desire to move abroad and preparations to migrate once controlling for the socio-demographic characteristics of the respondents. The association is higher in the case of migration preparation than in the case of migration desire. Slightly diverse effects are documented in low- and lower-middle-income countries, where the effect of Internet access on migration desire is somewhat higher than in the sample as a whole.

Keywords: Emigration, Internet, Africa, migration aspirations, migration intentions

1. Introduction

The aim of this article is to investigate the relationship between Internet access and the aspiration or intention to migrate. The press has many stories highlighting the speed with which the Internet has spread around the world. But the possible relationship between this technological advance and migration has received much less attention ([The Economist 2017a,b](#)). Internet access in developing countries has significantly increased over the past two decades, though the level remains far from the OECD standard ([Table A1](#) in Online Annex). Geographically speaking, large cross-country disparities in Internet access persist, especially in Africa. [World Bank data \(2020\)](#) shows that in 2016, Morocco had 58.27 per cent Internet access, the highest on the continent, while Eritrea had the lowest at 1.18 per cent. The spread of the Internet has also been uneven in

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temporal terms: while more than a quarter of the population already had Internet access in OECD countries in 2000, Morocco only managed to reach double digits in 2003, and Nigeria only in 2010. The international community agrees that Internet access should be broadened and made more globally affordable, as for instance in Goal 9 (to ‘significantly increase access to information and communications technology and strive to provide universal and affordable access to the internet in [the] least developed countries by 2020’) of the 2030 Agenda for Sustainable Development (United Nations 2018). More recently, the adoption of the Global Compact for Migration is consistent with Target 10.7 of the 2030 Agenda for Sustainable Development to ‘facilitate orderly, safe, regular, and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies’. More broadly, boosting African digital transformation is at the core of both the African Union digital strategy and the Africa–EU Partnership for cooperation and development. Should Internet access continue to grow in developing countries, what effects would this have on migration aspirations, intentions, and flows?

While migration drivers have long been studied (for literature overviews, see [Hatton and Williamson 2008](#); [Migali et al. 2018](#)), over the last decade there has been more interest in understanding migrants’ aspirations and intentions prior to migrating (for a recent overview, see [Carling and Collins 2018](#)). These studies have shown the benefit of breaking down international migration dynamics into different stages and isolating the role that different factors play in the phases prior to migrating ([Docquier, Peri and Ruysen 2014](#); [Dao et al. 2018](#)). We follow this strand in the literature and interpret aspirations as a generic desire to move abroad, and intentions as the concrete steps made in preparation for migration (for an in-depth treatment of how these terms have been applied in the literature, see [Carling and Schewel 2018](#); for a recent application of this distinction, see [Migali and Scipioni 2019](#)). Within this framework, we focus on the less-studied relationship between aspirations and intentions to migrate and technological progress. Qualitative and quantitative studies on the broader topic of technological advancements and migration have shown that, among other influences, social media and information gathered on the Internet facilitate the decision to migrate, destination selection, and integration and settlement ([Dekker, Engbersen and Faber 2016](#); [Thulin and Vilhelmson 2016](#)). However, these studies focused on either a small set of countries or developed countries. Our study focuses on migration aspirations and intentions in a large subset of African countries.

The analysis of the relationship between Internet access and migration aspirations and intentions in 29 African countries is based on the 2014 and 2015 Gallup World Poll Surveys. To achieve our analysis, we first estimate the association between Internet access and migration aspirations and intentions by modelling aspirations and intentions first separately and then jointly. We also investigate the varying effects of Internet access on migration aspirations and intentions across different groups of survey respondents. Overall, we estimate that Internet access would have a positive impact on both migration aspirations and intentions. The size of this effect is lower for migration desire and increases as the aspiration transforms into concrete preparations for a move — that is, intention.

The next section briefly summarises some of the most relevant findings from the academic literature on the association between the Internet and international migration. Section 3 provides an overview of the data and comments on the descriptive statistics.

Section 4 outlines the empirical strategy, followed by the baseline results and robustness checks in Section 5. Section 6 concludes.

2. Literature review

In the context of a growing academic literature on the dynamics of international migration, scholars have increasingly paid attention to the stages of migration prior to departure. Briefly, these studies break down international migration dynamics into several steps, and find that some of the commonly assumed determinants of migration play different roles in these different steps. This suggests that factors related to one phase of the process may not have the same relevance in later or prior phases.

A common starting assumption in the literature is that international migration is a result of aspirations to migrate, as well as an ability to undertake the journey (for an overview, see [Carling and Collins 2018](#); for recent contributions, see [Williams et al. 2018](#); [Clemens and Mendola 2020](#); [Etling, Backeberg and Tholen 2020](#)). Additionally, quantitative analyses of large-scale survey data also show that survey responses to questions regarding migration aspirations and intentions are reliable predictors of actual migration flows, thus preserving a conceptual and empirical link to international migration. (An important caveat to bear in mind is that we should not regard this process as linear or teleological. In other words, it is not necessarily the case that those who would like to migrate then plan and prepare accordingly. The simple fact that only a small percentage of those who would like to move end up doing so ([Bertoli and Ruysen 2018](#); [Laczko, Tjaden, and Auer 2017](#)) should alert us to the fact that this is far from a seamless process ([Laczko, Tjaden and Auer 2017](#); [Bertoli and Ruysen 2018](#)). The terminology used in these studies differs quite extensively, reflecting the different objectives of the researchers. Indeed, [Carling and Schewel \(2018\)](#) have recently mapped several of the concepts used in these studies — such as ‘aspiration’, ‘desire’, ‘intentions’, ‘plans’, ‘likelihood’, to name but a few — against the actual survey questions used in many quantitative analyses.

Several studies tackle the determinants of ‘potential migration’ and analyse the extent to which they differ from those driving ‘actual migration’. [Docquier et al. \(2014\)](#) find that both economic and social factors such as average income and the size of the migrant community in the destination countries matter in determining the pool of potential migrants, while the highly-educated face better prospects of actually migrating. This latter point on education is further studied by [Dao et al. \(2018\)](#), who analyse the differences between potential and actual migrants, splitting their analysis by educational level. This kind of research design enables the authors to observe how aspirations decrease with the log of income *per capita*, but with differences in the size of the effect. The size of the network abroad is, instead, always positively related to aspirations.

While the importance of having connections abroad has also been confirmed by other studies ([Bertoli and Ruysen 2018](#)), its priority relative to employment opportunities has recently been brought into question. Using a conjoint experiment, [Ferwerda and Gest \(2021\)](#) investigate the preferences for migrant destinations in a setting where migrants are unconstrained by financial, policy, or institutional obstacles. In this kind of scenario, interviewees express a hierarchy of preferences prioritising employability prospects first,

liberal democratic destinations second, and the presence of co-nationals a distant third. This suggests that networks may play a limited role in shaping the unconstrained aspirations to migrate, but may emerge more prominently when would-be migrants start to assess the feasibility and concrete details of moving abroad.

Again, by focusing on those planning to migrate, [Dustmann and Okatenko \(2014\)](#) emphasise that satisfaction with local amenities is negatively related to the propensity to migrate, whereas the relationship between income and migration depends upon the overall level of wealth in a given country. Recent analyses of those who aspire and intend to migrate at the global level also notice that the socio-demographics of these two groups tend to be different ([Migali and Scipioni 2019](#)).

Amongst the factors that shape migration aspirations and intentions, there is evidence that the traditional media plays a role, since they shape the information that would-be migrants receive. [Farré and Fasani \(2013\)](#) show that the spread of TV reduces internal migration in Indonesia by providing more reliable information about the costs and benefits of migration to potential migrants. [Aker, Clemens and Ksoll \(2011\)](#) observe that the distribution of mobile phones among the rural population of Niger ‘substantially influenced seasonal migration’, both in terms of an increased likelihood for individual people and for numerous members of a household to migrate. Similar results are retrieved in China, where the diffusion of landline phones is estimated to have increased emigration by about two percentage points, mainly because phones led to better knowledge of labour market opportunities and ‘timely contact’ with families left behind ([Lu, Xie and Xu 2016](#)). To summarise, there seems to be a relationship between the spread of traditional and digital media and migration. However, the direction of this relationship depends on the context and the type of information accessed. Thus, the impact of media and ICT on immigration can theoretically develop in opposite directions, and an empirical analysis is required to assess this.

This kind of ambiguity on the general effects of media and ICT also permeates the findings of the few studies investigating the relationship between the Internet and migration. Theoretically, having Internet access might equip individuals with specific information on how to reach — either regularly or irregularly — destination countries ([Dekker and Engbersen 2014](#)). Anecdotally, the Pew Research Centre was able to track the digital footprints of refugees trying to reach Europe during the 2015/16 asylum and migration crisis, by analysing Google Trends ([Connor 2017](#)). However, a gravity model based on macro data from the OECD and World Bank, which estimates the causal effect of the Internet on migration flows, finds that ‘a 10% increase in the number of internet users per 100 people in the sending country decreases bilateral stocks by about 4.4%’ ([Winkler 2017](#): 4). Winkler’s explanation for this result is that ‘the internet may weaken the importance of push factors in the decision to migrate, and that these effects dominate any declines in mobility costs associated with this new technology’ ([Winkler 2017](#): 4).

While such a negative effect could be retrieved in macro data on actual migration flows, it is worth considering whether the same relationship also holds in the prior phases of migration, following the same logic set out at the start of this section. In other words, the Internet may offer a wealth of information and knowledge which is helpful for would-be migrants, thus amplifying migration aspirations and intentions ([Dekker and Engbersen 2014](#): 404). In a study on the willingness to migrate based on the Arab Barometer, [Falco](#)

and Rotondi (2016) observe a positive relationship between Internet usage and aspirations to migrate in a subset of nine Arab Mediterranean countries, between 2010 and 2014. Others have questioned whether the Internet acts as a substitute for or simply an amplification of existing information channels. In a study based on original survey data collected in four European destination countries and three non-EU origin countries, Dekker et al. (2016: 549) notice that ‘online media mostly [supports] existing migration networks and [facilitates] the exchange of information and other resources within them.’ This leads the authors to believe that ‘online media [is] not (yet) substantially changing the social capital and information that is available to prospective migrants’, thereby making claims ‘about online media spurring international migration [...] premature’ (Dekker, Engbersen and Faber 2016: 550). The authors also argue that the relationship between social media and migration is likely to be context-dependent: factors such as age, education, or whether a diaspora is already long settled in the destination country, have all been shown to be important factors.

This article contributes to the current literature in several ways. First, by analysing the steps prior to departure, we complement the only existing quantitative study connecting migration flows to Internet diffusion (Winkler 2017). Secondly, by considering both those who simply desire to move, and those who actually go ahead and prepare a journey, we are better positioned to tease out how Internet access matters in each of these phases. Put differently, based on the previous literature (Bertoli and Ruysen 2018; Migali and Scipioni 2019; Ferwerda and Gest 2021), our expectation is that the Internet would interact in different ways with aspirations and intentions to migrate. Thirdly, rather than focusing on a small subset of countries as has been the case in previous research (Dekker, Engbersen and Faber 2016), we focus on the effect of technology on migration, by offering a quantitative analysis of a large subset of African countries.

3. Data and descriptive statistics

We analyse individual data from the Gallup World Poll Survey, a worldwide survey of public opinion and attitudes on a wide range of different subjects. We select the 2014 and 2015 Gallup World Poll Surveys as they include information on Internet access and migration aspirations and intentions. Our sample is a repeated cross-section that consists of 50,953 individuals from 29 African countries, including low-, lower-middle-, and upper-middle-income countries (the list of countries is provided in Table A3 in Online Annex).

Our dependent variables are migration desire and migration preparation. The first survey question on migration desire is about whether respondents would like to move permanently to another country if they had the opportunity to do so. Secondly, individuals who give a positive answer to the previous question are then asked whether they are planning to move permanently in the next 12 months (migration plan). Thirdly, respondents who reply positively to this question are finally asked whether they are taking steps towards carrying out an international journey (migration preparation). The exact wording of the questions on migration desire, plan and preparation is reported in Table A2 in Online Annex. In this article, we select only migration desire and migration preparation (the results on migration plan are available upon requests to the Authors). Indeed, in line

with the existing literature, we interpret ‘migration desire’ as a generic aspiration to move abroad, and ‘migration preparation’ as a way for the survey to zoom in only on those who are most likely to move in the near future (next 12 months) — that is, a concrete intention (Carling and Schewel 2018; Migali and Scipioni 2019). Our intention is twofold: through the migration desire question, we aim at capturing the pool of people aspiring to migrate in a broad sense, akin to those who aspire to make a career move, or to improve their education. Secondly, we would like to get a more precise picture of people actually intending to move by probing the interviewees for details, such as whether they have made the necessary arrangements, or whether they are planning their move for a given date in the next year. (Indeed, we regard Gallup’s accompanying questions inquiring about the possible destinations for such a move, which are asked for both questions on migration desire and plan, in a similar vein, that is to say to capture in the survey those who are likely to move. Such information on the possible destinations of would-be migrants has already been explored in the past, for instance by Docquier, Peri and Ruysen (2014); Bertoli and Ruysen (2018).

In our 2014–15 sample, 26 per cent of individuals express a desire to move abroad, while only 5.1 per cent of the overall sample plan to migrate, and 1.4 per cent prepare for an international journey (Table A4 in Online Annex). We observe cross-countries differences in migration aspirations, with the lowest shares of migration desire occurring in upper-middle-income countries. Migration preparation, on the other hand, is broadly similar across country groups, though slightly higher in observed lower-middle-income countries (1.8 per cent) compared to low-income countries (1.2 per cent) (Table A3 in Online Annex).

Our variable of interest is Internet access. Gallup surveys ask respondents whether they have Internet access at home. Overall, 17 per cent of the sample declares that they have Internet access in our sample. Internet access was higher among individuals who express a desire to migrate (22 per cent) and reaches 36 per cent for those preparing to move abroad (Online Tables A5 and A6). When comparing the countries in our study, the highest level of Internet access is in Tunisia (43 per cent), and the lowest in Madagascar (2 per cent) (Online Table A3).

Finally, in the empirical analysis, we include a set of personal characteristics as control variables: age; age squared; marital status; presence of children in the household; being foreign-born; having family members or friends abroad who could be counted on when needed; labour market status; completed education; and area of residence, Gallup estimates of *per capita* annual household income. The descriptive statistics for the entire sample, for those expressing the desire to migrate, and those preparing to migrate are in Online Tables A4–A6.

We observe some differences relating to these individual characteristics when comparing the complete sample of those who express a desire to migrate, and those who prepare to migrate. For example, individuals who desire and who prepare to migrate tend not only to have higher percentages of Internet access when compared to the entire sample, but also to have more connections abroad upon which they could count on. Indeed, 48 per cent of those who desire to migrate, and 81 per cent of those preparing to migrate, declare that they had family or friends abroad they could count on. In the pooled sample, this figure is lower (40 per cent). Importantly, as has been done in previous studies (inter alia, see Manchin and Orazbayev 2018; Ruysen and Salomone 2018), we use this question as a proxy for migration networks.

Individuals expressing migration desires and preparation are also on average younger (please recall that the Gallup World Poll Survey includes individuals aged 15 or older) than those in the pooled sample (respectively, 29 versus 35 years old). The employment rate for the whole sample (59 per cent) is slightly lower than that among the group preparing to migrate (62 per cent). Approximately 12 per cent of individuals in the preparing group have completed tertiary education, while only around 5 per cent of people in the desiring group has done so.

4. Empirical strategy

The primary objective of this study is to estimate the relationship between having Internet access and migration aspirations (i.e. the desire to migrate) and migration intentions (i.e. preparation to migrate). The utility function for individuals (i) from specific countries (c) observed in a specific period of time (t) who considers whether to migrate or not can be presented as the following:

$$U_{ict} = \beta_0 + \beta_1 \times Internet_{ict} + \beta_2 \times X_{ict} + \varepsilon_{ict} \quad (1)$$

where, $Internet_{ict}$ indicates whether an individual had access to the Internet. X_{ict} included a set of individual socio-demographic characteristics. The observed dependent binary variables $Desire_{ict}$ and $Preparation_{ict}$ take the value 1 if their corresponding utility is positive, 0 otherwise (this is a dummy equal to 1 if the individual expressed the desire to move permanently abroad, and equal to 0 otherwise. Those who answered 'don't know' or 'refused to answer' were recoded as missing.) We first model migration desire and preparation separately, by using Probit models. However, migration desire and subsequent actions to realise it are likely to be correlated, and those who prepare to migrate are unlikely to be randomly selected from the sample. To take this into account, as a second step, we model migration desire and preparation jointly using the Heckman Probit sample selection model, as in [Ruysen and Salomone \(2018\)](#). Assuming that ε_{ict} has a standard normal distribution, the empirical specification can be written in the form of a Heckman Probit sample selection model. Individuals first indicate whether they would be willing to migrate abroad if such an opportunity arises, and subsequently whether they are preparing to move. The corresponding (desire) selection and outcome (preparation) equation take the following form:

$$Desire_{ict} = 1 (\beta_0^d + \beta_1^d \times Internet_{ict} + \beta_2^d \times Z_{ict} + \beta_3^d \times Network_i + \beta_4^d \times LivingStandard_i + \beta_5^d \times C_c + \beta_6^d \times T_t + \varepsilon_{ict}^d > 0) \quad (2)$$

$$Preparation_{ict} = 1 (\beta_0^p + \beta_1^p \times Internet_{ict} + \beta_2^p \times X_{ict} + \beta_3^p \times Network_i + \beta_4^p \times LivingStandard_i + \beta_5^p \times C_c + \beta_6^p \times T_t + \varepsilon_{ict}^p > 0) \quad (3)$$

where $1(\cdot)$ is the indicator function taking the value 1 if the statement in the brackets is true and taking 0 otherwise. $Preparation_{ict}$ was observed only if $Desire_{ict} = 1$, that is, the

probability to prepare to migrate is conditional probability (conditional upon having expressed a desire to emigrate). Hence, the sample in the second (preparation) equation is not randomly selected, such that $\rho = \text{Corr}(\varepsilon_{ict}^d; \varepsilon_{ict}^p) \neq 0$. Using the Heckman Probit model would provide consistent, asymptotically efficient estimates for all the parameters in binary choice models with sample selection (Van de Ven and Van Praag 1981; Wooldridge 2010). The specification also includes a set of individual characteristics (X_{ict}), a variable which could capture the impact of having a relative or a friend abroad (*Network*), and changes in living standards, (*Living Standards*), which are known to be important determinants of migration intention (Dustmann and Okatenko 2014; Manchin and Orazbayev 2018; Ruysen and Salomone 2018). Apart from age, all variables included in the model are either binary or categorical variables. We recoded each category of the latter as a dummy variable. For example, the variable *Network* takes value 1 if a person has friends or relatives abroad and value 0 otherwise. T_b C_c are dummy variables to control for unobserved temporal and country differences. Finally, ε_{ict} is the unobserved error term.

Using an identical set of explanatory variables for desire and preparation allows us to identify the model only by functional form, leaving the Heckman coefficients without any structural interpretation (Maddala 1983). The identification of the model requires an exclusion restriction in the selection equation. Following Ruysen and Salomone (2018), we include an index of experiential well-being (EW_{ict}) to the set of explanatory variables in the equation for desire so that $Z_{ict} = \{Z_{ict}, EW_{ict}\}$. The index captures respondents' experienced well-being on the day before the survey, or the way that respondents felt immediately before taking the survey (the index provides a real-time, composite measure of respondents' positive and negative experiences. It is calculated based on responses given to questions related to experiences on the previous day, such as feeling well-rested, having been treated with respect, having smiled, laughed, learned or did something interesting, having felt enjoyment, physical pain, worry, sadness, or anger). We expect that well-being might have an influence on immediate aspirations — such as the desire to migrate — but not on concretely planned actions such as preparations to move abroad.

5. Estimation results

As described above, we model migration desire and migration preparation jointly, using the Heckman Probit model, which is based on maximum-likelihood estimation. All model specifications include country and year dummies. The coefficients from the Heckman Probit estimation are shown in Table 1 (Columns 1 and 2). For comparison, we also choose to report the results of Probit models for migration desire (Column 3) and migration preparation when using the sample restricted to those who desire to migrate (Column 4).

The results of the Heckman Probit model for migration desire suggest that there is a positive and significant association between Internet access and migration desire. The coefficient of Internet access is estimated at 0.09. This suggests that Internet access may amplify individuals' aspirations to move abroad by, for instance, reducing the costs of migration, increasing the benefits, and/or by promoting migration success stories. Our

Table 1. Main results. Heckman Probit and Probit models for migration desire and migration preparation

	Heckman probit model		Probit models	
	Desire (1)	Preparation (2)	Desire (3)	Preparation (4)
Internet access	0.087*** (0.024)	0.215** (0.071)	0.083*** (0.023)	0.253*** (0.060)
Age	-0.022*** (0.003)	0.013 (0.010)	-0.020*** (0.003)	0.008 (0.011)
Age squared	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Children in the household	0.037 (0.021)	0.013 (0.056)	0.029 (0.020)	0.024 (0.059)
Gender (male)	0.190*** (0.016)	0.038 (0.071)	0.191*** (0.016)	0.103* (0.049)
Foreign-born	0.333*** (0.049)	0.300* (0.152)	0.350*** (0.048)	0.427*** (0.098)
Networks abroad	0.257*** (0.017)	0.530*** (0.136)	0.250*** (0.017)	0.648*** (0.053)
Marital status: married	-0.242*** (0.022)	0.123 (0.083)	-0.241*** (0.022)	0.053 (0.064)
Marital status: other	-0.188*** (0.030)	0.205* (0.088)	-0.174*** (0.030)	0.165 (0.090)
Secondary education	0.201*** (0.019)	0.024 (0.073)	0.194*** (0.018)	0.090 (0.053)
Tertiary education	0.167*** (0.039)	0.335** (0.121)	0.172*** (0.039)	0.412*** (0.096)
Unemployed	0.187*** (0.027)	-0.047 (0.078)	0.182*** (0.027)	0.011 (0.073)
Out of workforce	-0.100*** (0.019)	-0.109 (0.073)	-0.108*** (0.019)	-0.154* (0.060)
<i>Per capita</i> annual household income (log)	-0.005 (0.007)	0.051* (0.022)	-0.013 (0.007)	0.051* (0.023)
Place of living: a rural area or farm	0.035 (0.019)	-0.052 (0.058)	0.040* (0.019)	-0.045 (0.061)
Place of living: a small town or village	0.118*** (0.028)	-0.123 (0.079)	0.125*** (0.028)	-0.093 (0.081)

(continued)

Table 1. Continued

	Heckman probit model		Probit models	
	Desire (1)	Preparation (2)	Desire (3)	Preparation (4)
Place of living: large city	0.144 ^{***} (0.032)	0.025 (0.098)	0.155 ^{***} (0.032)	0.074 (0.093)
Major city	0.066 ^{**} (0.024)	0.025 (0.072)	0.065 ^{**} (0.024)	0.047 (0.071)
Change life standard: same	0.043 [*] (0.020)	-0.047 (0.062)	0.077 ^{***} (0.020)	-0.031 (0.063)
Change life standard: worse	0.166 ^{***} (0.020)	-0.019 (0.080)	0.218 ^{***} (0.019)	0.048 (0.059)
Daily experience index	0.004 ^{***} (0.000)			
Observations		50,401	50,953	12,546
Rho		-0.429 (0.354)		

Notes: Coefficients reported. Reference categories for the covariates are no children in the household. Gender: female. Native-born. Not having networks. Marital status: single. Education: primary. Labour market status: Employed. Place of living: rural area or farm. Does not live in a major city. Life standards: getting better. All models include country and time dummies and a constant term. Robust standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

results confirm the existing findings on the main drivers of migration aspirations and intentions (Migali and Scipioni 2019). The features positively associated with a desire to move abroad are being male, young, single, foreign-born, living in a major city area and living in a small town or village, having secondary or tertiary education, being unemployed, and/or having ties with friends or family abroad. The results show that having pessimistic or neutral expectations on one's own living and material standards is positively associated with migration desire.

The results also suggest that having Internet access is positively and significantly associated with migration preparation (Column 2). Conditional upon desiring to move abroad, the coefficient of Internet access is estimated at 0.22. Therefore, the effect of Internet access on migration preparation is almost 2.5 times higher than the effect of Internet access on migration desire. Again, the positive and significant association between intentions and Internet access may be explained by the fact that the Internet facilitates possible migration decisions by providing would-be migrants with specific information on the eventual migration journey and settlement in the destination country. In the case of actual migration preparation, the significant individual characteristics differ from the characteristics of those with the desire to migrate. Age, gender, employment, and place of living are not associated with migration preparation, while these characteristics are associated with migration intentions. Having pessimistic or neutral expectations about one's own living

conditions is not associated with migration preparation, whereas this characteristic is associated with migration desire. At the same time, the log of per capita annual household income is positively associated with migration preparation, but not migration desire. Finally, the results suggest that one of the traditional drivers of migration — having connections abroad who can be counted upon (networks) — has 3 times higher effect on migration desire, and 2.5 times higher effect on preparation, than having access to the Internet.¹

Ignoring the potential sample selection bias of migration preparation, and using separate Probit models for desire and preparation, the estimated effect of Internet access on migration preparation (Column 4) is slightly higher, with a coefficient equal to 0.25. Overall, the results from the Heckman Probit and Probit models confirm that the effect of having Internet is positive and significant for both migration desire and preparation. Moreover, the results suggest that the association between Internet access and migration preparation is 2.5 times higher than the association with migration desire.² In line with [Ferwerda and Gest's \(2021\)](#) and [Falco and Rotondi's \(2016\)](#) findings, Internet access appears to play a role in shaping general aspirations to move abroad. This role becomes even more important when the aspiration to migrate translates into actual migration intentions.

5.1 Different sub-samples

We use the Heckman Probit and Probit models on several sub-samples to investigate the possible diverse effects of Internet access on different groups of respondents. Internet access may depend on the economic development of the country, and so we expect that respondents in middle-income countries may be more likely to have access to Internet than those in the poorest countries. Therefore, we limit our empirical analysis to the sample of low- and lower-middle-income countries (for the classification by income and the results see Online [Table A3](#) and [Table A7](#), respectively). Secondly, we restrict the sample to individuals aged 15–39, considering previous findings that younger adults are more likely to desire to migrate and to actually move abroad than individuals aged 40+ ([Migali and Scipioni 2019](#)) (Online [Table A8](#)). The third model restricts the sample to the young individuals (15–39) in low- and lower-middle-income countries (Online [Table A9](#)). Indeed, young people living in the poorest countries are not only those with the highest migration aspirations, but also among the most important group in the policy, development, and demographic discussions on migration in Africa ([Natale, Migali and Münz 2018](#); [Belmonte et al. 2020](#)). Finally, we account for the fact that foreign-born individuals may be more likely than native-born individuals to move abroad again. Hence, to check the sensitivity of the results to the presence of foreign-born individuals, we exclude them from the sample.

The results from these sets of models confirm the findings obtained in the baseline model. In the Heckman Probit models, the estimated coefficient of Internet access ranges from 0.22 to 0.28 (in the baseline model the estimated effect was 0.22). These results suggest that there is no relevant diversity in the level of migration preparation across different groups. For instance, in the Probit models that exclude foreign-born individuals from the sample (Online [Table A10](#)), the estimated coefficients are 0.09 and 0.22 for, respectively,

migration desire and preparation. The estimated coefficient of migration desire from the Heckman Probit model is 0.08 in the sample of young individuals and 0.09 in the sample excluding the foreign-born (the effect in the baseline Heckman Probit was 0.08). The only differences come from the samples of low- and lower-middle-income countries; in these cases, the estimated effect of Internet access on migration desire is relatively higher than in the baseline model. Specifically, the coefficient is estimated at 0.10 regardless of age restriction in the low- and lower-middle-income countries' models. These findings are consistent with other research, which suggests that the effects of wealth and amenities on migration aspirations depend on the general income level of a country. In particular, in low- and lower-middle-income countries, migration aspirations tend to increase as wealth increases (Dustmann and Okatenko 2014; Dao et al. 2018).

Our results also confirm that Internet access plays a much bigger role in the preparation stage than in shaping migration desire.

6. Conclusion

The aim of this analysis has been to identify the relationship between Internet access and aspirations and intentions to migrate in Africa, an area that has lagged behind developed countries in Internet use and diffusion. The analysis is based on data from the 2014 and 2015 Gallup World Poll Surveys for 29 African countries. The estimations provide insights into how Internet access in individual households is related to their desire and preparations to migrate, while controlling for other individual characteristics.

Both the Probit and Heckman Probit models confirm that Internet access increases both the desire and intention to migrate (migration preparation). The impact of Internet increases is higher in the case of migration preparation than in the case of migration desire. Slightly diverse effects are documented in low- and lower-middle-income countries, where the effect of Internet access on migration desire is somewhat higher than in the sample as a whole. The analysis confirms some of the well-known drivers of migration: being male; young; single; living in a major city area; having tertiary education; and being unemployed especially for migration aspirations. Among all traditional drivers of migration — having connections abroad who can be counted upon (networks)— has the highest effect on migration aspirations and intentions. Also, the networks effect appears to be 3 times higher in case of migration desire, and 2.5 times higher in case of migration preparation, than the effect of having access to the Internet.

The key message of this article — that Internet access is related to a higher likelihood to desire to move abroad, and to even more to the intention to migrate — should be narrowly interpreted in the context of international migration in 2014–15 for a subset of African countries. That said, such finding was robust to splitting our sample both in terms of country characteristics and socio-demographic features. Though we do not know what kind of information the samples in our study got online, on average simply accessing the web was connected to higher propensity to aspire to move abroad, and even more making preparation to do so. In the context of an ever-expanding and more affordable Internet access within countries as well as longer and more frequent

individuals' online presence — particularly for young cohorts — our research constitutes only the starting point for future studies seeking to more precisely identify the causal connections between not only Internet access, but also online experiences, and intentions to move.

Supplementary data

Supplementary data is available at *Migration Studies* online.

Endnotes

1. We investigated the possible issue of collinearity between having internet access and having networks abroad. In other words, we were concerned about the potential substitutability between having networks abroad and having Internet access. The correlation between the two variables is 0.14. About 10% of individuals in the sample have both networks abroad and Internet access; among those having access to Internet only half (55%) have networks abroad. Among those who have network abroad only 24% have access to Internet, about half in the sample (52%) have neither Internet access nor networks abroad. We also run the Heckman Probit and Probit models including all control variables except Internet access (the results are available upon request to the authors). We find that the marginal effect of migration networks is about 7 per cent on migration desire and about 6 per cent on migration preparation, both in the Heckman Probit and Probit models. These marginal effects do not change when including internet access (see Table 1). Hence, we conclude that the variable on networks is not capturing all the effects of having Internet access.
2. We test whether the differences of coefficients of Internet access are statistically significant. The tests indicate that the differences in size are indeed statistically significant. We reject the null hypothesis (that the coefficients are statistically not different) both in Probit models run separately for desire and preparation ($\chi^2(1) = 7.00$, $\text{Prob} > \chi^2 = 0.0081$) and in Heckman Probit ($\chi^2(1) = 2.74$, $\text{Prob} > \chi^2 = 0.09$).

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