Global Evidence on the Relative Importance of Nonfinancial Drivers of International Migration Intentions

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Abstract

Using a global, individual-level survey, this article looks at the relative importance of local amenities and political institutions while controlling for other financial and non-financial incentives for individual plans to move between countries. Although the influence of wages and income differences has been extensively explored, less is known about specific non-income-related drivers of international migration and their relative importance. The analysis highlights that satisfaction with politics and amenities both at the origin and destination, are important drivers of migration intentions. These jointly with social networks explain about twice as much in international migration intention outcomes than employment-related incentives (such as relative individual income difference, employment, and job satisfaction), with relative income difference explaining only about 5 percent to 8 percent.

Keywords

intention to migrate, cross-country survey data, international migration

JEL codes: F01, F22, F24, R23, O15

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Introduction

Income-related drivers of migration, such as expected wage differences, have been the cornerstones in the economic literature explaining migration drivers.[1] More recent literature has highlighted the importance of some other drivers, most importantly social networks, which explain a significant variation in migration outcomes (see Munshi (2014) for an overview of this literature). However, there is limited empirical evidence on some other nonfinancial factors driving international migration intentions (or actual migration) and their relative importance.

This article aims to provide global evidence on the relative importance of local amenities and political institutions as driving factors in individual migration intentions to move between countries. The empirical analysis in this article takes advantage of an individual-level global survey dataset, the Gallup World Poll (GWP).[2] Given the large number of questions asked, it is possible to investigate the importance of not only income- and employment-related drivers of migration intentions, but also a range of other issues including various nonfinancial factors potentially influencing migration. Most importantly, these include the individual's satisfaction with various political issues (such as the government, elections, leadership, and judiciary), and amenities (e.g., quality of education, healthcare, transport, etc.).

The focus of this article is on migration intentions, and not on actual migration. Hence when interpreting the results, one has to be cautious as looking at actual migration could lead to some-what different findings. Nevertheless, it has been shown that intentions are good predictors of actual migration behavior (see, e.g., Docquier, Peri and Ruyssen 2014). In addition, a stricter definition of migration intention is used in this article than in most other studies, using a combination of questions that identify individuals who are more likely to act upon their intentions.[3]

The article begins by outlining a stylized model on the drivers of bilateral international migration intentions. In addition to wage differences and other employment-related factors, the model also includes political institutions and

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[1] See Hatton and Williamson (2005) and Mayda (2010) for good overview of determinants for international migration.

[2] The GWP has been recently used in a few papers exploring specific factors driving migration intentions, such as the importance of wealth constraints (Dustmann and Okatenko 2014), country-specific and country-pair specific factors driving bilateral aggregate migration intentions (Docquier et al. 2014), network effects (Bertoli and Ruyssen 2018),the role of gender discrimination (Ruyssen and Salomone 2018), and well-being linked to migration (Ivlevs et al. 2019; Nikolova and Graham 2015). See also Docquier et al. (2015), Docquier and Machado (2016), Docquier et al. (2017), and Dao et al. (2018) using GWP to explore issues related to international migration intentions.

[3] If migration intentions were calculated based on a simple question whether the individual would like to move, about 11 times more individuals would have migration intentions/aspirations than when using this stricter definition based on a combination of questions.

amenities both at the origin and destination locations, and the costs of migration (including social networks both at the origin and destination).

The sample used for the main empirical analysis covers the period between 2010 and 2012, with bilateral individual migration intentions being the dependent variable. Among other controls, all specifications include employment-related factors (employment, job satisfaction, and expected relative income difference),[4] individual-satisfaction with politics (i.e., military, judiciary, government, elections, corruption, and leadership) and infrastructure (public transport, roads, education, healthcare, housing, physical setting, air quality, water quality, and crime) in the origin country, and average satisfaction with politics and infrastructure in the destination.

Running a sample weighted logit regression I find that having a worse perception of political institutions and infrastructure/amenities at the home location significantly increases individual migration intentions, and individuals are more likely to choose destinations with better amenities. While at the origin location, lower satisfaction with politics is a more important push factor than local amenities, in choosing destination location, the quality of amenities is a more important factor than satisfaction with politics. Income- and employment-related factors also matter as expected, having a job and having better satisfaction with that job decreases migration intentions. In addition, having a higher expected income in the destination than current income increases migration intentions (with a 10% increase in relative income difference increasing the odds of migration intentions to a specific destination by 5%).

Using Shorrocks-Shapley decomposition, I provide a breakdown on the relative importance of the various factors in shaping migration intentions. I find that the individual's expected income difference, employment status, and job satisfaction jointly explain about 8.5 percent in the variation of bilateral migration intentions. Satisfaction with politics and infrastructure together have about the same importance for the full sample as income- and employment-related drivers, while being more important for individuals in low-income countries (explaining about 13.3% of the variation). Furthermore, individual-level expected income difference explains only about 5.2 percent and 8 percent across the different sample splits. On the other hand, social networks, satisfaction with local amenities and politics jointly are much more important drivers of migration intentions (explaining between 14.3% and 23% of the variation in outcome depending on the sample split). Results remain robust when splitting the sample by level of development, gender, and education with small differences across the sample splits.

The article is organized as follows. The Literature Review section reviews the relevant literatures. The Conceptual Framework section outlines a stylized model which motivates the empirical specification. In the Data section, the data used for the

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[4]Individual income difference is measured as the difference between the individual's current household income and the expected household income in the destination, given educational attainment calculated from the survey.

empirical analysis are discussed. This is followed by a descriptive section reviewing the characteristics of international migration intentions, and the empirical results which is followed by Conclusions section.

Literature Review

Income- and employment-related incentives behind migration decisions have been extensively explored in the literature, mostly by considering employment, wage differences, social security, inequality, and the size of the labor market as potential push and pull factors (see, e.g., Hatton and Williamson (2005) or Ortega and Peri (2009) for a review of this literature). Some of the factors which can influence the cost of migrating have been also explored, most importantly social networks, cultural links, distance, and language.[5]

However, there is less evidence on other noneconomic factors, such as local amenities (e.g., quality of schools or healthcare)[6] or political institutions, and how important these factors are compared to other determinants.[7] Czaika and Reinprecht (2020) summarize the literature on the drivers of international migration, noting that economic drivers outnumber the other driver dimensions investigated. In addition, they find that evidence in some of the articles highlights that people often migrate despite lower returns in receiving countries, suggesting that income is not the only driver which is influential. Gibson and McKenzie (2011) look at evidence using a survey from three Pacific countries to analyze the drivers of emigration and return migration of very highly skilled individuals, finding a limited role for income maximization, concluding that it is important to pay more attention to nonfinancial incentives as well. Aslany et al. (2021) provide an in-depth overview of the literature on the drivers of migration intentions, including country-specific studies showing lower corruption and higher satisfaction with political institution at the origin location is expected to decrease migration intentions.[8] Regarding the role of amenities, there is even less empirical research. Dustmann and Okatenko (2014) using GWP but

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[5] See, for example, Banerjee (1983); Beine and Salomone (2012); Mayda (2010); McKenzie and Rapoport (2007); Takenaka and Pren (2010); Zavodny (1997).

[6] Throughout the text I will use amenities and infrastructure interchangeably.

[7] While Cai et al. (2014) and Migali and Scipioni (2019) find that subject well-being and life satisfaction is important for migration intentions, Nikolova (2016) focusing on transition economies find that political institutions influences life satisfaction.

[8] For example, Berlinschi and Harutyunyan (2019) find that in the case of Post-Soviet states the satisfaction with political institution plays a role in migration intentions. Etling et al. (2020) highlight the importance of satisfaction with political dimensions (such as democracy, ability to shape government policies), which importantly shape immigration intentions of young people in the Arab Mediterranean region. Furthermore, Hiskey et al. (2014) find that governance and democracy shape emigration intentions in Latin America and the Caribbean as well.

without distinguishing international from domestic migration,[9] find that satisfaction with local amenities at the current location matters for migration intentions. Furthermore, Manchin and Orazbayev (2018) concentrate on the role of different types of social networks using only origin country and individual-specific variables and find that amenities in the origin country are significant drivers of international migration intentions.[10] In this article, I aim to contribute to this literature by providing evidence on the importance of the role of satisfaction with infrastructure and political institutions both at the origin and destination location using a sample with a large number of countries.

Although there is only limited evidence for the role of amenities and political institutions (specially for destinations) for international migration, the role of local amenities and also to some extent the importance of institutional quality have been investigated more thoroughly for within-country migration decisions as pull factors (see, e.g., Mulligan, Carruthers and Cahill 2004 and Knapp and Gravest 1989 for a summary of this literature).[11] Findings on domestic migration indicate that some of the economic variables had the opposite sign than expected (Alperovich, Bergsman and Ehemann 1977; Blomquist, Berger and Hoehn 1988; Clark and Cosgrove 1991; Greenwood 1975; Graves 1983; Greenwood and Hunt 1989; Knapp and Gravest 1989; Porell 1982). For example, Knapp and Gravest (1989) find that people migrated to regions with high unemployment or low wages. Izraeli (1987) suggests that migrants are willing to trade some level of income for increased quality of life. Against higher wages attracting more migrants, Knapp and Gravest (1989) argue that since wage differentials may arise as a compensation for lower-quality amenities, one might not expect high migration toward high-wage regions given that potential migrants value amenities. Fafchamps and Shilpi (2013), looking at intra-Nepal migration, show that in addition to distance, population density, social proximity for choice of migration destination, better access to amenities (proxied by housing price premium, travel time to nearest paved road and bank) is also significant. A general conclusion

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[9] In the GWP there are about 8 to 10 times more domestic than international migrants (see Manchin and Orazbayev 2018).

[10] Geis et al. (2013) concentrate on healthcare and find that better healthcare systems and healthcare quality differentials can attract different migration forms. Similar results are found by Van Dalen and Henkens (2007) who focus on emigration intentions from the Netherlands and find that societal problems, welfare state institutions and environmental quality matter significantly.

[11] On the role of institutions for internal migration see Nifo and Vecchione (2014) who find that institutional

from this strand of literature looking at intra-country migration is that both jobs and amenities matter for migration decisions.[12]

Conceptual Framework

This section outlines a stylized model of how individual intention to migrate is affected by various factors. In addition to income-related factors which have been widely investigated in the empirical literature, the framework incorporates location characteristics, such as contentment with amenities, politics, and also the costs of migrating.[13] The objective here is to provide a motivation for the empirical analysis, rather than to develop a comprehensive model.

Theoretical models of international migration typically use a welfare maximization framework where the individual chooses the location (which can also be the current location implying no migration) resulting in the highest welfare. This framework has been developed and used in a number of articles (see, e.g., [Borjas 1987], [Grogger and Hanson 2011], [Roy 1951] among others). The framework I outline here draws on the models developed in these previous articles while putting more emphasis on non-income motives for migration.[14]

Given that the data used in this article are on migration intentions, the model will be based on the individual's preference toward migration rather than on the actual fact of relocation. Specifically, the individual's preference toward migration will depend on whether they anticipate that their expected utility at the intended destination will be higher compared with the expected utility at the current location. A linear utility function is assumed, where the utility of an individual i in the current location o is

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[12] Chen and Rosenthal (2008) use US census data to develop a set of quality of life and quality of business environment indicators, which they use to show that younger, more educated individuals are attracted to areas with good business environment (and job opportunities), while older, married couples tend to be attracted to areas with good "quality of life" environment. An alternative approach is taken by Rappaport (2008), who calibrates a general equilibrium model to match the empirical correlation between population density and wages. The resulting parameters suggest that cross-sectional variation in amenities (quality of life) explains about one-fifth of the observed variation in population density. Further support for amenities as an important factor in migration can be found in Buch et al. (2013).

[13] The empirical literature on the drivers of subjective well-being also highlights the importance of other, non-income-related factors, such as perceived corruption, or government performance (see, e.g., Djankov et al. 2016). These can be relevant also for migration decisions. In addition, both Aslany et al. (2021) and Czaika and Reinprecht (2020) provide an in-depth review of the determinants of actual migration and intentions, highlighting the importance of nonfinancial drivers.

[14] Similarly to, for example, Beine and Parsons (2015) and Fafchamps and Shilpi (2013).

$$U_{oo}^i = lnY_o^i + A_o^i + \epsilon_o^i \tag{1}$$

where Y_o^i is the individual's income in the country of origin o, A_o^i represents origin-specific factors the individual is encountering, while ϵ_o^i is an error term. There is a wide range of origin-specific factors which is expected to influence individual's utility, including the individual's satisfaction of amenities and politics. For example, being able to attend better schools, use better transportation infrastructure, have access to better healthcare, be able to influence politics through democratic institutions are all expected to increase individual welfare.

The (expected) utility of an individual who migrates to destination country d from country to o is

$$U_{od}^i = lnY_d^i + A_d^i - C_{od}^i + \epsilon_{od}^i \tag{2}$$

where Y_d and A_d are as before income and destination-specific factors, including a wide range of amenities in the destination location (similarly to the origin location, better quality of amenities and political institutions at the destination is expected to increase the expected utility in the destination), while C_{od} is the cost of migrating. More specifically

$$C_{od}^i = c(\tau_o, \tau_d, \tau_{od}, i, \delta_o^i, \delta_d^i) \tag{3}$$

where migration costs are influenced by origin country-specific characteristics, τ_o, destination country-specific characteristics, τ_d, country-pair specific factors τ_{od} (such as distance between the two countries, sharing the same language, visa requirements, and colonial past), individual-specific characteristics, i, and the individual's social networks at the origin δ_o and destination δ_d. Social networks at the destination are expected to lower the costs of migrating by providing information, financial, or other types of direct help for migrants (McKenzie and Rapoport 2007). Social networks at the origin on the other hand can both increase or decrease migration costs. For example, it can be that these networks provide financial support to people who want to migrate, but it could also be that emigrating would imply losing the benefits offered by the social networks at home, either emotional ("psychic costs" in Sjaastad 1962) or financial (Munshi and Rosenzweig 2016), thus increasing the costs of migration.

The individual chooses the destination with the highest expected utility:

$$\max_{k=(1, \,...,D)} U_{o,k}^i \tag{4}$$

When the individual intends to migrate from country o to d, $Ii = 1$ and 0 otherwise. Assuming that the random terms follow an i.i.d extreme value distribution, one can apply results from McFadden (1984) which leads to probability of individual i with

migration intentions from o to d :

$$\Pr(I_{od}^i = 1) = \Pr(U_{od}^i = maxU_{ok}^i) = \frac{\exp(U_{od}^i)}{\sum_k \exp(U_{ok}^i)} \tag{5}$$

and the log odds of choice of destination:

$$\log(\Pr) = U_{od}^i - U_{oo}^i = \ln\left(\frac{Y_d^i}{Y_o^i}\right) + A_d^i - A_o^i - C_{do}^i + \varepsilon_{od}^i \tag{6}$$

This equation forms the basis for the empirical specification which will be outlined after a discussion of the data used. Thus we expect that higher income differentials, better institutional quality and amenities, and lower costs of migration will increase individual migration intentions between country pairs, with these intentions being lessened in case of better amenities and institutions in the origin location.

Data

General Data Description

The data used in the article come from the GWP. It is a large dataset spanning several years, building on yearly surveys of individuals in more than 150 countries, representing more than 98 percent of the world's adult population. In the article, I use a somewhat smaller sample as not all survey questions are asked in all countries (for the sample coverage, see Appendix D). Data collection is based on randomly selected, nationally representative samples. The survey is conducted by asking typically 1,000 individuals in each country,[15] and covers the entire country including rural areas. As respondents are selected through probability sampling, using the survey weights, the *ex post* representativeness can be achieved for the data. Another important advantage of the data is that a standardized data collection protocol is used across the countries in the sample.[16] See further details on the dataset and a full list of available variables in Esipova, Ray and Pugliese (2011) and Gallup (2012).

While the data are available for earlier years as well, the survey question allowing to distinguish between domestic and international migration intentions is only asked from 2010 onwards. Hence, I use the years 2010–2012 for the empirical analysis (see

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[15] In some countries, oversamples are collected in major cities or areas of special interest. Additionally, in some large countries, such as China and Russia, sample sizes of at least 2,000 are collected.

[16] Gallup implemented tests first on a smaller set of countries to ensure that respondents across different cultural backgrounds interpret the questions adequately. There is also a rigorous translation process in place (translating in an iterative process, back and again to the local language).

the description of how international and domestic migration intentions are identified from the survey in Appendix E).[17]

There are a few potential limitations of this dataset. As discussed in Migali and Scipioni (2019), similarly to other survey data, the GWP might suffer from the reference point problem. More specifically, individuals answering about their preferences will be influenced by their reference situation and as such, for example, an individual unable to migrate might underrate the expected gains from migrating biasing some of her answers. Nevertheless, this issue is an inherent problem of all surveys. Carling and Schewel (2018) note a further potential shortcoming of the dataset, namely that one of the questions regarding migration intentions ("Ideally, if you had the opportunity…") is difficult to interpret. Thus individuals might interpret such a question differently, given its conditional framing. In this analysis we use a combination of questions to define migration intentions, nevertheless, this potential weakness has to be kept in mind.

Variables Used From the Survey

Construction of the Dependent Variable. GWP asks about the individual intention to migrate and also about the preferred destination country.[18] This allows the construction of a dependent variable that exploits the bilateral nature of migration intentions. One advantage of using intentions rather than actual migration is that it also includes irregular migrants, which can be a significant share in some developing countries (with these countries representing and important share of the sample). While throughout this article, I discuss migration intentions without drawing conclusions for actual migration, it is useful to understand to what extent intentions translate into actual migration. Docquier, Peri and Ruyssen (2014) using the same survey data, but a less strict definition of intentions (based on a single question instead of a combination of questions) find that aspirations are good predictors for actual migration. The authors also find a high correlation between potential and actual emigration rates (the correlation being very high for college-educated individuals, regressing college-educated migration intentions on actual migration leads to a slope of 0.93). In addition, based on data for the Netherlands, van Dalen and Henkens (2008) also find intentions to be good predictors of actual future migration, with the same forces driving actual migration and the desire to migrate. Creighton (2013) using

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[17] For additional descriptive statistics on the variables used in the regressions, see Appendix D.

[18] The exact question asked is as follows: "To which country are you planning to move in the next 12 months? (asked only of those who are planning to move to another country in the next 12 months)" question id: WP10253. From all those who were identified as international migrants, 5 percent did not answer the question on destination, these were dropped from the sample.

two waves of the Mexican Family Life Survey also shows that aspirations predict migration, both interstate and to the United States from Mexico.

In this article, a stricter definition of intention is used than in the literature referred in the above paragraph. Aspiration is a statement of the consideration to migrate (perhaps under ideal circumstances), for example, Creighton (2013) uses: "Have you thought about moving in the future outside the locality/community where you currently live?" On the other hand, intention is a stronger statement of preferences. The corresponding question in GWP is "Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?", GWP's formulation is stronger since it is asking directly for the likely response under ideal conditions (as opposed to mere consideration used by Creighton 2013). Furthermore, while GWP allows for analysis of aspirations to migrate (using the previously cited question), an even stronger definition of intention is employed in this article by combining the previous question with information from the following questions: "In the next 12 months, are you likely or unlikely to move away from the city or area where you live?" and "Are you planning to move permanently to another country in the next 12 months, or not?" (see Appendix E for further details on how domestic and international migrants are identified). Thus, using this stricter definition is likely to lead to a better prediction for actual migration. The correlation between international migration intentions and the actual migration flows for the OECD countries as destinations in 2010 is 0.46.[19]

The number of individuals who intend to migrate internationally and those who intend to stay is given in Table 1. Those cases where the answers provided are contradictory are excluded. Further details on the procedure used in the construction of these variables, related questions, and limitations of the procedure can be found in Appendix E.

Other Variables. The focus of this article is to compare the relative importance of a wide range of income-related and nonfinancial drivers potentially influencing international migration intentions. The GWP provides several survey questions along these dimensions.

The survey contains questions related to the economic situation of the individual. To control for the employment status of the individual, I use a survey question with the resulting variable taking the value of 1 if the individual is unemployed, 2 if employed part time and would prefer full-time employment, and 3 if employed

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[19] To obtain this correlation, the GWP data were matched for the year 2010 to actual bilateral migration stock data with OECD countries as destination countries from Brücker et al. (2013). To be able to merge the data, individual responses were aggregated up using the survey weights to obtain bilateral international migration intentions.

Table 1. Intention to Stay or to Migrate Internationally — Summary Numbers.

Label	Total	As % of valid observations
Intention to stay in the current country	134,035	98.6
Intention to migrate internationally	1,847	1.4
Valid observations	135,882	100

Note: Valid observations are observations with consistent, non-missing responses, see Appendix E for further details. The number of individuals in the sample used for the regressions is lower due to some of the explanatory variables not being available for all.
Source: Own calculations are based on GWP data.

full time or part time without seeking full-time employment. In addition, the individual's satisfaction with her/his job is also used in the empirical analysis (a dummy taking the value of one if the individual is satisfied with the job). Finally, I construct a relative income variable to measure the expected difference between the individual's current and expected income in the destination. For this, I use the household income of the individual (referring to as individual income) provided by GWP which is comparable across individuals, communities, and over time.[20] Using individual-level incomes at each educational attainment and sample weights, the destination's "equivalent" income is calculated (assuming the individual expects to receive the income corresponding to her/his educational level). From the individual's own income and the expected income in the destination, the relative income variable is calculated as a log-difference. In order to cross-check this variable, I compared the calculated individual income by education at country level to data for income by level of education for EU countries, for which such data were available.[21] The correlation for individuals with tertiary education is about 69 percent, 76 percent for secondary, and 72 percent for those with primary education.

There are several questions in the survey on the individual's perception of the political situation and a number of questions related to satisfaction with local infrastructure. Since for each of these issues, there are several questions in the survey, including just one variable for a given issue would potentially lead to omitting some important information about the factors which might alter the respondent's intention to migrate. Thus principal component analysis is used to produce two indexes retaining as much information as possible from the underlying data. The questions used for constructing these "summary" indexes

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[20] The individual income variable is constructed by Gallup by dividing the local currency incomes by the 2011 purchasing power parity (PPP) ratios. Further details are provided in the data handbook.

[21] EU individual (net) income by education data were obtained from Eurostat.

Table 2. List of Survey Questions Used to Construct Principal Component Indexes.

Label	Full question
Satisfaction with politics	
Military	In this country, do you have confidence in the military?
Judiciary/ courts	In this country, do you have confidence in the judicial system and courts?
Government	In this country, do you have confidence in the national government?
Fair elections	In this country, do you have confidence in the honesty of elections?
Corruption	Is corruption widespread throughout the government in this country, or not?
Leadership	Do you approve or disapprove of the job performance of the leadership of this country?
Local leadership	Do you approve or disapprove of the leadership of the city or area where you live?
Satisfaction with infrastructure	
Public transport	In the city or area where you live, are you satisfied or dissatisfied with the public transportation systems?
Roads	In the city or area where you live, are you satisfied or dissatisfied with the roads and highways?
Education	In the city or area where you live, are you satisfied or dissatisfied with the educational system or the schools?
Healthcare	In the city or area where you live, are you satisfied or dissatisfied with the availability of quality healthcare?
Housing	In the city or area where you live, are you satisfied or dissatisfied with the availability of good, affordable housing?
Physical setting	In the city or area where you live, are you satisfied or dissatisfied with the beauty or physical setting?
Air quality	In the city or area where you live, are you satisfied or dissatisfied with the quality of air?
Water quality	In the city or area where you live, are you satisfied or dissatisfied with the quality of water?
Theft	Within the last 12 months, have you had money or property stolen from you or another household member?

are shown in Table 2. Given that most of the variables used for constructing the indexes are not continuous, polychoric principal component analysis is used (see Kolenikov and Angeles 2004) retaining the first component for each dimension. The corresponding eigenvalues and the proportion explained by the first component of each index can be found in Appendix B. To allow easier interpretation, each of the principal component indexes is standardized (with a mean of 0 and standard deviation of 1 for the sample). To measure satisfaction with politics

and infrastructure in the destination locations, country-level averages were calculated for these two summary indexes using sample weights.[22]

In addition, there are a number of questions in the survey related to individual characteristics which can influence intentions to migrate. In the empirical analyses, I control for marital status, age, gender, education (distinguishing between primary, secondary, and tertiary education), the number of children in the household, and whether the individual lives in a large city or in rural area. Finally, two questions are used from the survey to proxy for the individual's social network. The first is a dummy variable for the existence of close social networks abroad (based on the question asking whether the individual has close friends or relatives abroad on whom they can count on).[23] The second controls for close social networks at the current location (based on a survey question asking if the individual can count on help from relatives or friends in case of difficulties). Finally, a measure of the individual's experienced well-being is also used as a control variable. This is an index variable from GWP, constructed from a number of questions assessing the individual's negative experiences or well-being at the time of asking the other questions (See descriptives statistics for all variables usd in Annex C.).

Characteristics of International Migration Intentions

The share of individuals with international migration intentions in each country's population is shown in Figure 1 with the darker red color indicating higher outmigration intentions.[24] There is an important heterogeneity across countries in terms of international migration intentions. Countries with the top 95 percent international migration intentions have around and above 7 percent intention rates (such as Ghana, Congo, Liberia, Congo Brazzaville, Djibouti, Comoros, Guinea, and Togo). Countries at the median have about 1.2 percent intention rates (e.g., Chile, Suriname, Paraguay, and Ecuador), while the average is around 2.1 percent (such as Libya and Mauritius).

Appendix Table A14 provides the mean and standard deviation of potential factors influencing migration intentions, separately for those who intend to stay and for those who intend to move to a different country. The average satisfaction with both politics

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[22] In other words, while the same underlying questions were used to construct the variables to measure satisfaction with these factors both at the origin and destination, at the origin, these variables are individual level, at the destination on the other hand are country level.

[23] While the survey contains a question on friends and family, also asking in which country they are located, unfortunately for our sample, there are insufficient observations to use that.

[24] Note that these figures are calculated using all observations from the survey, the sample used for the regressions is smaller due to the restricted availability of certain survey questions used as control variables for some of the countries.
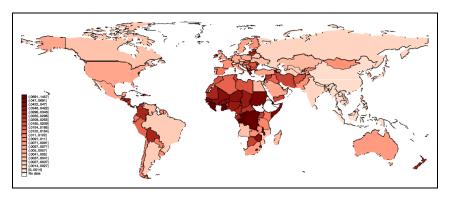
Figure 1. International Migration Intentions Worldwide.
Note: Share of individuals intending to migrate internationally by country, calculated using weights provided by GWP.

and infrastructure of those who intend to migrate internationally is lower than that of those who intend to stay. In addition, there is an important difference in the existence of social networks abroad among stayers and those who intend to move abroad. On average, 66 percent of individuals with international migration intentions have close friends or relatives abroad on whom they can count on, while only about 34 percent of those have such networks who intend to remain in the country.

Among individual characteristics, family and age patterns differ across stayers and those who would like to move. The average age of those who plan to stay is 37 years, while the mean is 30 years for those with international migration intentions. Those who are married also are more likely to stay in their current location than single individuals. In addition, males are more likely to intend to migrate internationally. Individuals with international migration intentions are also more likely to come from households with a larger number of children. Finally, those with international migration intentions are on average located more in large cities. The level of education on average is slightly lower for stayers than international would-be migrants, although the difference is rather small (Table 3).

The individual's income, job satisfaction, and employment situation also differ on average among those who plan to move and stay. While about 45 percent of international would-be migrants are satisfied with their job, a much higher share, 66 percent of stayers are satisfied. In addition, those who plan to migrate internationally report worse employment conditions. While the average household income is higher for those who plan to stay in their current location, in terms of relative income (relative to the median income in the country where the individual is located), there is a significant difference between stayers and those with international migration intentions, with the latter possessing a much higher relative income on average.

Table 3. Movers Versus Stayers.

	(1) Intentions to stay Mean/SD	(2) Intentions to migrate Mean/SD	(3) Difference
Origin politics	0.04 0.98	−0.40 0.94	
			0.44***
Origin infrastructure	−0.08 0.97	−0.51 0.98	
			0.44***
Log (rel.) income	0.08 0.85	0.15 0.94	
			−0.07***
Household income, US dollars	12736.51 19092.70	8949.82 14561.11	
			3786.69***
Close networks abroad	0.35 0.48	0.66 0.47	
			−0.31***
Social network at origin	0.79 0.41	0.76 0.42	
			0.03*
Employment	1.67 0.66	1.38 0.82	
			0.29***
Job satisfaction	0.67 0.47	0.45 0.50	
			0.22***
Married	0.64 0.48	0.44 0.50	
			0.20***
Age	38.11 13.64	31.07 10.96	
			7.04***
Education	1.76 0.68	1.76 0.66	
			−0.01
Female	0.43 0.49	0.38 0.48	
			0.05***
Large city	0.35 0.48	0.42 0.49	
			−0.06***
Number of children	1.71 1.84	2.13 2.14	
			−0.43***
Experienced well-being	24.28 27.87	31.73 31.56	
			−7.45***

Note: The table presents means and standard deviations in parentheses for those who intend to stay in their current location, move within the country, and intend to migrate internationally. Household income is measured by Gallup in "international dollars", which are created using World Bank's individual consumption PPP conversion factor, while relative income refers to the respondent's income within country quintiles.
Source: Own calculations using GWP data.
*$p<0.1$; **$p<0.05$; ***$p<0.01$.

Table 4. Average Satisfaction with Country and City-Level Factors and Close Social Networks Abroad by Region.

					Social network	
	Region	Politics	Infrastructure	Relative income	At home	Abroad
Stayers	Asia	0.17	0.19	0.07	0.79	0.27
	Australia, New Zealand	0.65	0.64	0.22	0.96	0.66
	Balkan	−0.25	−0.13	0.14	0.84	0.43
	CIS	−0.03	−0.14	0.11	0.81	0.35
	EU	−0.03	0.29	0.18	0.91	0.45
	Middle East-North	−0.17	−0.35	0.03	0.76	0.27
	South America	−0.22	0.15	0.08	0.86	0.43
	Sub-Saharan Africa	0.07	−0.41	−0.03	0.72	0.32
Migration intentions	Asia	−0.42	−0.15	0.59	0.77	0.61
	Australia, New Zealand	0.45	0.20	−0.06	0.84	0.80
	Balkan	−0.64	−0.54	0.20	0.83	0.82
	CIS	−0.57	−0.36	0.23	0.89	0.66
	EU	−0.58	−0.01	0.17	0.84	0.79
	Middle East-North	−0.67	−0.98	0.07	0.77	0.64
	South America	−0.64	−0.10	0.21	0.85	0.81
	Sub-Saharan Africa	−0.31	−0.60	0.08	0.71	0.61

Note: The table presents means calculated using the GWP weights.
Source: Own calculations are obtained from GWP data.

In Table 4, differences across regions are explored. Regional averages are shown for satisfaction with politics, infrastructure, relative income, and social networks for stayers and international migration intentions. There is an important heterogeneity between regions. On average, individuals in Australia and in New Zealand are the most satisfied with their country's politics and infrastructure. In addition, when considering those individuals who do not plan to leave the country, they also have on average the highest share of people with close social networks abroad. Among those with international migration intentions, South Americans have the highest share of close networks abroad, about 81 percent of those who have international migration plans in the region have close friends or relatives abroad. For would-be migrants from Sub-Saharan Africa this, share is only 61 percent.

Importance of Different Factors in Individual International Migration Intentions

Empirical Specification

In this section, empirical evidence is provided on the relative importance of nonfinancial factors among other controls for individual migration intentions. The main empirical specification follows equation (6) which also maps into the gravity model. While the gravity model has been extensively used to empirically estimate trade flows since Tinbergen (1962), and the theoretical foundations have been linked to different trade models (see an overview in Head and Mayer 2014), it has also been applied to other types of flows between countries, including migration flows.[25] Hence, the bilateral estimation equation is as follows:

$$M_{iodt} = \alpha + \beta_1 I_{iot} + \beta_2 F_{iot} + \beta_3 Z_{iot} + \beta_4 O_{ot} + \beta_5 D_{dt} + \beta_6 P_{odt} + \varepsilon_{iodt}, \quad (7)$$

where M_{iodt} is a variable equal to 1 if the individual i located in origin country o intends to out-migrate over the next 12 months to destination country d at time t.[26] Equation 7 is estimated using a sample-weighted logit model.

I_{iot} includes a set of standard control variables related to individual characteristics; namely, the level of education, marital status, age, gender, number of children, and a dummy for residing in a large city. To control for the individual's social networks, two variables are included. The first controls for networks abroad, and is a dummy if the individual has close friends or relatives abroad (note that it is social networks abroad, not necessarily in the preferred destination).[27] The second variable on social networks controls for close social networks at the current location, which is based on the following question: "If you were in trouble, do you have relatives or friends you can count on to help you".

In addition, a measure of the individual's current well-being (i.e., a proxy for general satisfaction) is included as a control variable. The variable is an index from GWP, constructed from a number of questions assessing the individual's A negative experiences or well-being at the time of asking the other questions. The reason for including a variable measuring the general current perceived well-being of the individual is that individuals with migration intentions might perceive their current situation in a more negative way. Hence not including a control variable capturing this higher general negative well-being/perceptions could lead to potentially biased

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[25] Beine et al. (2016) provide a good overview of the gravity model's application to international migration flows and lay out also its theoretical basis.

[26] The data does not have a panel structure as the same individuals are not observed/asked in subsequent years.

[27] This variable is based on the following question from the survey: "Do you have relatives or friends who are living in another country whom you can count on to help you when you need them?"

estimates on variables such as job satisfaction, or perception of the quality of institutions, infrastructure, or politics.

F_{iot} contains individual-specific income- and employment-related factors at the individual's current location. More specifically, I control for employment status of the individual (taking values 1 if unemployed, 2 if part time and would like to be full time, 3 if full time or part time and does not want to be full time), job satisfaction (a dummy variable taking the value of one if the individual is satisfied with her/his job), and the individual's expected relative income (log) difference.

Z_{iot} includes a set of nonfinancial factors that is related to the extent the individual is satisfied with his/her country and local area along several dimensions. Given that the survey provides a wide range of questions, principal component analysis is used to create variables measuring individual contentment as outlined in Conceptual Framework section. The resulting variables measure the individual's satisfaction with politics (military, judiciary, government, elections, corruption and leadership) and infrastructure (public transport, roads, education, healthcare, housing, physical setting, and air and water quality).

In order to control for satisfaction with politics and local infrastructure at the different potential destinations, an average using the sample weight is calculated for all destinations from the individual satisfaction with politics and local infrastructure (using the same principal component based variable used for the origin country). In addition to these controls, D_{dt} also includes population (while destination income is controlled for by the relative income variable).[28]

To account for any time-varying origin country-specific factor, O_{ot} includes origin-year fixed effects.[29] Standard country-pair-specific variables are included in P_{odt} (of which most are time invariant) following the gravity framework (i.e., bilateral distance, same language, past colonial links, sharing a border, and bilateral time varying visa requirements).

The main specifications are run with logit regressions, clustering always standard errors by individuals.

Results

Main Specification. Table 5 shows the results using the specification outlined in equation (7). The first column presents results for the full sample, while the remaining two

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[28] See, for example, Kim and Cohen (2010) showing that population is among the most important country-specific drivers of migration flows.

[29] Given that I want to measure the importance of infrastructure and politics in the destination country, which is not individual specific, but country specific, and given the very short time-frame for which I have data availability, I could not include destination specific fixed effects in the regressions, nor country-pair fixed effects (in which case I would not be able to include the relative income difference variable which is one of the most important income-related driver of migration used in previous literature).

columns provide sample split results for individuals residing in low and high middle-income countries.[30]

As expected, higher expected income difference increases migration intentions, individuals who are satisfied with their job or employed (this latter is only significant for individuals in low-income countries) are less likely to want to migrate internationally. More specifically, a 10 percent increase in relative income difference would increase the odds of migration intentions to a specific destination by 5 percent. As a robustness, instead of assuming that the individual expects to receive an income in the destination based on her education attainment, an alternative income difference measure was used, with the income difference being calculated as the difference between individual income and the average income at the destination irrespective of the level of education. The results remain very similar (see Table A19 in the Supplemental).

When turning to non-employment-related determinants, satisfaction with infrastructure (which includes public transport, roads, quality of education, healthcare, housing, air, water quality, and physical setting) matters both as a "push" and a "pull" factor.[31] More specifically, a decrease of 1 standard deviation in the index of origin infrastructure decreases the odds of international migration intentions by about 13 percent. Furthermore, people choose destinations where the perception of amenities and infrastructure is better, with the odds of intentions increasing by about 62 percent with a 1 standard deviation increase in the index. On the other hand, while perception of the political situation in the destination has a negative sign in low-income countries it has a positive sign in high and middle-income countries (this could be possibly driven by individuals intending to migrate to closer locations in case of low-income countries, which tend to be countries with lower-level of satisfaction with politics), in the origin location it is significant and negative across all sample splits as expected. The results also indicate that while at the origin location lower satisfaction with politics is a more important push factor than local infrastructure, in choosing the destination location, the quality of infrastructure is a more important factor than satisfaction with politics.

Results also indicate that people are more likely to be attracted to countries with higher population (both population density (see Fafchamps and Shilpi 2008) and

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[30] The sample is split into low-income and high middle-income countries based on World Bank classification.

[31] When running such regressions at aggregate level, very likely there would be a high correlation between amenities and income difference making the interpretation of the results more difficult. Here, as the variables are individual level, most correlations are low. The correlation between individual-level income difference and the individual perception of politics and infrastructure in the origin country is low, –0.01 for politics and –0.17 for infrastructure. For destination politics it is 0.07, and somewhat higher for destination infrastructure with 0.34. When running the main specification without the income difference variable, the origin politics and infrastructure coefficients remain almost unchanged, while the coefficients for destination infrastructure and politics become only slightly higher.

Table 5. Relationship Between Migration Drivers and Migration Intentions — Full Sample.

Variables	Intention to migrate full sample	Intention to migrate low income	Intention to migrate high and middle income
Origin politics	−0.310 (0.042)***	−0.285 (0.047)***	−0.421 (0.101)***
Origin infrastructure	−0.137 (0.042)***	−0.118 (0.046)**	−0.171 (0.097)*
Destination politics	−0.087 (0.047)*	−0.169 (0.055)***	0.207 (0.110)*
Destination infrastructure	0.619 (0.060)***	0.613 (0.068)***	0.555 (0.161)***
Destination population	0.779 (0.025)***	0.840 (0.027)***	0.561 (0.064)***
Contiguity	0.856 (0.152)***	1.032 (0.174)***	0.548 (0.419)
Common language	1.328 (0.090)***	1.255 (0.102)***	1.964 (0.245)***
Colonial links	0.910 (0.137)***	0.932 (0.149)***	0.881 (0.366)**
Distance	−0.950 (0.056)***	−0.985 (0.060)***	−0.761 (0.148)***
Visa	−0.522 (0.097)***	−0.399 (0.116)***	−0.788 (0.312)**
Income difference	0.501 (0.032)***	0.505 (0.036)***	0.496 (0.089)***
Social network abroad	1.398 (0.080)***	1.406 (0.087)***	1.382 (0.217)***
Social network at origin	−0.182 (0.087)**	−0.140 (0.091)	−0.415 (0.274)
Employment	−0.080 (0.053)	−0.117(0.057)**	0.099 (0.139)
Job satisfaction	−0.179 (0.088)**	−0.179 (0.094)*	−0.446 (0.238)*
Married	−0.330 (0.082)***	−0.301 (0.089)***	−0.554 (0.238)**
Age	−0.923 (0.106)***	−0.830 (0.115)***	−1.315 (0.274)***
Education	0.098 (0.063)	0.003 (0.068)	0.621 (0.184)***
Female	−0.264 (0.071)***	−0.222 (0.078)***	−0.542 (0.175)***
Large city	0.493 (0.087)***	0.535 (0.097)***	0.288 (0.189)
# of children	0.036 (0.020)*	0.040 (0.020)*	0.019 (0.088)
Experienced well-being	0.604 (0.119)***	0.566 (0.132)***	0.791 (0.285)***
Pseudo R2	0.26	0.26	0.28
N	5,122,441	3,643,200	1,369,431

Note: The table shows coefficients of sample weighted logit regressions, standard errors are clustered at individual-level, all specifications include country-year fixed effects. The dependent variable is a dummy for the intention to migrate to a specific destination. Origin and destination politics and infrastructure are standardized principal components measuring contentment with these factors. Income difference is the log of relative income difference between destination average income at equivalent education and the individual's current income. Social network abroad is a dummy variable for those individuals who have close friends or family abroad, while social network at origin is a dummy for those with close social network in the origin location. Employment measures the level of employment of the individual (unemployed/part time/full time), and job satisfaction is a dummy whether the person is satisfied with her/his job. Experienced well-being is an index measuring negative experiences the day before the questions were asked.

*p < 0.1; **p < 0.05; ***p < 0.01.

population size as a proxy for country size, as shown in the gravity literature, is indeed expected to increase the attractiveness of a destination). In addition, in line with previous results, while higher distance discourages, common language increases migration intentions (see, e.g., [Adsera and Pytlikova 2015] or [Beine, Bertoli and Moraga 2016]). Furthermore, colonial links and contiguity also increase intentions between country pairs, while visa requirements, as expected, decrease intentions.

Regarding social networks, results indicate a high correlation between individual migration intentions and having a close social network abroad. Odds of migration intention for those who have a close social network abroad are about 305 percent higher than for those with no close social ties abroad in the case of the full sample. The very high correlation of social networks for individual migration intentions are in line with previous findings.[32] On the other hand, the intensity of social networks at the origin country holds back people from wanting to emigrate, although the variable is significant only for the full sample. In this case, the odds of migration intentions is 17 percent lower for those with close social ties in their current location.[33]

Results on individual characteristics are in line with the previous literature; those who are married, older, with lower level of education (in case of high and middle-income countries in the results), and female have lower probability of willingness to move internationally. In addition, the results indicate that living in smaller cities or rural areas in low-income countries (and in the case of the full sample) also reduces international migration intentions. Furthermore, having more children in the household also increases intentions in low-income countries and in the case of full sample. The variable measuring experienced well-being (with higher values indicating more negative experience) is significant with the expected sign.[34]

The individual's social network abroad is likely to be endogenous. More specifically, individuals belonging to the same group tend to behave similarly when faced with common external factors (see Manski 1993), not controlling for these can lead to endogeneity issues. While this variable is not the main variable of interest in this analysis, the Appendix A contains details on IV regressions addressing the potential endogeneity of social networks abroad, obtaining similar results.

Separate Survey Questions. In order to better understand what specific factors are important for migration intentions, I rerun the regressions using separate survey

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[32] For example, Beine et al. (2015) find the network coefficient to be close to one, with a 1 percent increase in the initial network size leading to a 1 percent increase in bilateral migration flows.

[33] Similar results were found by Manchin and Orazbayev (2018) and also by Munshi and Rosenzweig (2016) who look at migration within India and find that close social networks at home can facilitate migration through financial and other support, but can also reduce the intention to migrate due to financial or psychological reasons.

[34] When clustering at origin country results remain very similar, with minor changes in significance for few variables.

questions measuring satisfaction with origin-specific infrastructure and politics (Table 6). Some of the variables used for the principal component construction on these factors have a very high correlation (e.g., road quality and transport quality has about 80% correlation), for these, only one of the variables are used. The variables included in the regressions have lower level of correlations, the highest being around 30 percent. On the other hand, since variables measuring satisfaction with infrastructure and institutions in the destination are at country level instead of individual level, the correlation of the individual survey questions are very high, hence these are only included in the regression as principal components. After each regression, the variance inflation factor was calculated, with the value remaining close to 1 for all these separate variables, indicating that the variance of the estimated coefficients have not increased significantly due to collinearity. In addition, the joint significance of those variables which are separately insignificant is significant at 1 percent.

Results are shown in Table 6 (with the full regression results presented in the Supplemental Table A18). The most important factor among amenities in the origin location for migration intentions is security both in low and high middle-income countries. When the individual perceives that there are no thefts taking place in the area where she/he lives, the odds of international migration intentions decrease by 37 percent. On the other hand, while for low-income countries air quality is the second most important factor among the infrastructure variables, for high and middle-income countries, the availability of good quality education is more important, followed by the quality healthcare (though the latter is insignificant, even though all infrastructure variables are jointly significant). Furthermore, two variables are included in measuring satisfaction with politics, one measures satisfaction with the national government, the other with local politics. While in low-income countries satisfaction with local leadership seems to be more important, for high and middle-income countries, satisfaction with national government is important, with its importance being very close to that of local security.

Relative Importance of Driving Factors. In order to better understand the relative importance of the various factors in shaping migration intentions, a Shorrocks-Shapley decomposition is undertaken. The decomposition provides the relative contribution of each variable to a measure of fit. This is done by considering all possible combinations of elimination of variables and calculating marginal effects from each exclusion on the chosen measure of fit.[35] The contribution of the main factors to the variation in international migration intention outcomes both for the full sample and the sample split based on the level of development of the origin countries are presented in Table 7.

Individual-specific income- and employment-related factors (expected difference in income, employment, and job satisfaction) explain jointly 8.5 percent in the variation in the outcome for the full sample, with politics and infrastructure explaining

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[35] See more details in Shorrocks (1982).

Table 6. Relationship Between Migration Drivers and Migration Intentions, Full Sample, Separate Origin Infrastructure, and Politics Variables.

Variables	Intention to migrate individual migration full sample	Intention to migrate individual migration low income	Intention to migrate individual migration high and middle income
Air quality	−0.211 (0.080)***	−0.262 (0.087)***	0.121 (0.206)
Transport	−0.118 (0.074)	−0.108 (0.084)	−0.111 (0.160)
Education	−0.057 (0.079)	0.014 (0.087)	−0.313 (0.187)*
Healthcare	−0.004 (0.083)	0.071 (0.091)	−0.212 (0.191)
Housing	0.045 (0.077)	0.056 (0.084)	−0.048 (0.190)
City beauty	−0.121 (0.077)	−0.138 (0.084)*	−0.120 (0.208)
No theft	−0.471 (0.074)***	−0.476 (0.081)***	−0.456 (0.189)**
Business corruption	−0.139 (0.094)	−0.170 (0.104)	−0.031 (0.221)
National government	−0.215 (0.078)***	−0.180 (0.086)**	−0.422 (0.201)**
Local leadership	−0.433 (0.075)***	−0.454 (0.081)***	−0.267 (0.190)
Pseudo R2	0.26	0.27	0.27
N	5,745,614	3,952,107	1,675,535

Note: The table shows coefficients of sample weighted logit regressions, standard errors are clustered at individual-level, all specifications include country-year fixed effects. Only the variables specific to the origin location's infrastructure and politics are shown, full regression results are presented in the Appendix. The dependent variable is a dummy variable for the intention to migrate to a specific destination. The variables which are insignificant separately have a joint significance at 1%.
*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

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Table 7. Contribution of Each Factor to the Overall Variation in Migration Intentions (in %).

Factors	Full sample	Low income	High and middle
Politics	2.44	4.67	2.12
Infrastructure	4.85	8.67	3.86
Bilateral factors	31.69	27.80	33.45
Destination population	19.31	11.45	21.26
Origin-year FE	17.01	13.24	16.94
Social networks	8.52	9.67	8.35
Income	6.37	8.04	5.23
Employment, job	2.14	2.05	2.21
Individual characteristics	7.66	14.41	6.58

Note: Figures show proportion explained by each factor in total variation. Shapley values are normalized and the sum of these values for all variables is equal to 100 percent. Politics include origin and destination politics, Infrastructure includes origin and destination infrastructure. Bilateral factors include contiguity, common language, colonial links, distance, and bilateral visa requirements. Social networks include close networks abroad and at the current location. Individual characteristics include being married, age, education, gender, living in a large city, number of children in the household, and experienced well-being.

only slightly less, with 7.3 percent. In the case of individuals residing in low-income countries on the other hand, satisfaction with politics and infrastructure explains slightly more, about 13.3 percent while all individual-specific financial factors explain 10 percent. Moreover, the relative income difference (taking into account the educational attainment of the individual) explains only about 5.2 percent to 8 percent across the different sample splits. Given its importance in individual migration models, this finding is striking. Social networks (both at home and abroad) satisfaction with local amenities (such as the quality of roads, public transport, educational system and schools, availability of quality healthcare, housing, air, water quality, and physical setting), and satisfaction with politics jointly are much more important drivers of migration intentions (explaining between 14.3 percent to 23 percent of the variation in outcome depending on the sample split).

Heterogeneous Effects Across Individuals. In this section, I look into whether there are some individual characteristics that lead to different findings. Results are provided for sample splits exploring individual-level heterogeneity along gender and education in Table 8, while Table 9 presents the corresponding Shapely decomposition.

While the main patterns found previously remain, there are minor differences across the various sample splits. In particular, for individuals with higher educational attainment, the expected income difference, social networks, and infrastructure are relatively more important in explaining the variation in migration intentions than for individuals with lower education. A further difference between individuals with different educational attainment is that having an employment reduces migration intentions of individuals with lower education but has no significant effect (and with a positive coefficient) for those with higher level of education.

Table 8. Relationship Between Migration Drivers and Migration Intentions, by Gender and Education.

Variables	Intention to migrate individual migration female	Intention to migrate individual migration male	Intention to migrate individual migration low education	Intention to migrate individual migration high education
Origin politics	-0.241 (0.065)***	-0.370 (0.057)***	-0.266 (0.066)***	-0.363 (0.056)***
Origin infrastructure	-0.123 (0.066)*	-0.144 (0.054)***	-0.151 (0.072)**	-0.150 (0.051)***
Destination politics	-0.019 (0.073)	-0.124 (0.061)**	-0.199 (0.086)**	-0.035 (0.054)
Destination infrastructure	0.578 (0.093)***	0.638 (0.078)***	0.672 (0.112)***	0.685 (0.073)***
Destination population	0.801 (0.041)***	0.769 (0.031)***	0.871 (0.041)***	0.718 (0.032)***
Contiguity	0.863 (0.236)***	0.852 (0.199)***	1.184 (0.268)***	0.624 (0.199)***
Common language	1.324 (0.153)***	1.334 (0.112)***	1.133 (0.151)***	1.602 (0.116)***
Colonial links	0.892 (0.206)***	0.916 (0.181)***	0.559 (0.239)**	1.104 (0.161)***
Distance	-1.000 (0.092)***	-0.926 (0.071)***	-1.319 (0.099)***	-0.765 (0.074)***
Visa	-0.615 (0.143)***	-0.464 (0.131)***	-0.119 (0.192)	-0.568 (0.119)***
Income difference	0.571 (0.053)***	0.471 (0.042)***	0.489 (0.054)***	0.543 (0.042)***
Social network abroad	1.503 (0.130)***	1.329 (0.102)***	1.411 (0.123)***	1.402 (0.105)***
Social network at origin	-0.146 (0.139)	-0.190 (0.110)*	-0.235 (0.123)*	-0.118 (0.122)
Employment	-0.153 (0.087)*	-0.034 (0.067)	-0.219 (0.083)***	0.032 (0.068)
Job satisfaction	-0.082 (0.145)	-0.226 (0.111)**	-0.104 (0.138)	-0.236 (0.114)**
Married	-0.341 (0.122)***	-0.336 (0.113)***	-0.179 (0.132)	-0.417 (0.107)***
Age	-0.890 (0.190)***	-0.965 (0.130)***	-0.940 (0.164)***	-0.897 (0.144)***
Education	0.025 (0.100)	0.162 (0.082)**		
Large city	0.460 (0.135)***	0.488 (0.114)***	0.774 (0.141)***	0.319 (0.098)***
Number of children	0.001 (0.036)	0.054 (0.024)**	0.050 (0.030)*	0.011 (0.026)
Experienced well-being	0.606 (0.184)***	0.591 (0.157)***	0.696 (0.180)***	0.559 (0.158)***
Female			-0.340 (0.117)***	-0.234 (0.092)**
Pseudo R2	0.26	0.26	0.27	0.26
N	1,697,558	2,609,906	1,348,727	3,001,720

Note: The table shows coefficients of sample weighted logit regressions, standard errors are clustered at individual-level, all specifications include country-year fixed effects. The dependent variable is a dummy for the intention to migrate to a specific destination. Origin and destination politics and infrastructure are standardized principal components measuring contentment with these factors. Income difference is the log of relative income difference between destination average income at equivalent education and the individual's current income. Social network abroad is a dummy variable for those individuals who have close friends or family abroad, while social network at origin is a dummy for those with close social network in the origin location. Employment measures the level of employment of the individual (unemployed/part time/full time), and job satisfaction is a dummy whether the person is satisfied with her/his job. Experienced well-being is an index measuring negative experiences the day before the questions were asked.

Table 9. Contribution of Each Factor to the Overall Variation in Migration Intentions (in %), by Gender and Education.

Factors	Female	Male	Low education	High education
Politics	1.83	3.39	2.47	2.80
Infrastructure	4.96	5.66	3.66	6.79
Bilateral factors	38.63	34.35	40.89	34.10
Destination population	21.18	22.35	22.45	20.99
Origin-year FE	16.41	18.81	19.19	15.93
Social networks	9.45	9.23	7.69	9.63
Income	7.53	6.20	3.65	9.77
Employment, job	1.97	2.72	2.61	2.23
Individual characteristics	7.13	9.13	9.45	7.08

Note: Figures show proportion explained by each factor in total variation. Shapley values are normalized and the sum of these values for all variables is equal to 100 percent. Politics include origin and destination politics, Infrastructure includes origin and destination infrastructure. Bilateral factors include contiguity, common language, colonial links, distance, and bilateral visa requirements. Social networks include close networks abroad and at the current location. Individual characteristics include being married, age, education, gender, living in a large city, number of children in the household, and experienced well-being.

For male migrants, the existence of local social networks in the origin is a more important factor in reducing intentions than in the case of females. On the other hand, males with higher number of children and higher level of education are more likely to have intentions to migrate both of which are insignificant factors for female intentions.

Conclusions

In this article, global evidence is provided on the relative importance of local amenities and political institutions as factors driving individual international migration intentions, while controlling for a wide range of other employment-, income-, and individual-specific factors. The article first outlines a simple framework that in addition to income motives also includes other nonfinancial factors as drivers of migration intentions, most importantly amenities and political institutions both at the origin and destination, and provides the motivation for the empirical specification. The empirical analysis relies on a global, individual-level survey, the GWP, which provides representative samples for a large number of countries.

The empirical findings highlight the importance of satisfaction with political institutions and local amenities, both at the destination and the origin locations, as additional drivers to standard income and employment-related drivers. Using a Shorrocks-Shapley decomposition to quantify the relative contribution of each variable to the variation in outcome, I find that the expected income difference of the individual explains about 5 percent to 8 percent of the variation in migration intention outcome. Satisfaction with infrastructure (such as the quality of roads,

public transport, educational system and schools, availability of quality health-care, housing, air, water quality, and physical setting), satisfaction with politics, together have about the same importance for the full sample than income- and employment-related drivers, while being more important for individuals in low-income countries (explaining about 13.3% of the variation). Furthermore, satisfaction with politics, amenities, and social networks jointly are much more important drivers of migration intentions (explaining between 14.3% and 23% of the variation in outcome depending on the sample split). Results remain robust when splitting the sample by level of development, gender, and education with small differences across the sample splits.

Overall, these findings on the one hand confirm the importance of the widely investigated employment and income-specific drivers in migration intentions, on the other hand highlight that other nonfinancial drivers play equally or potentially even more important roles, and thus their in-depth investigation together with the mechanisms how these matter should be further studied. In addition, migration intentions based on survey responses might reflect different importance of drivers than actual migration, which should be further investigated.

Appendices

Appendix A: IV Results

One of the major determinants of migration intentions appears to be social networks. However, it is well known in the literature that there is an identification issue in the case of social networks (Manski 1993). Including a control for peer effects in the regressions (i.e., the variable measuring social networks abroad) could lead to an endogeneity problem. Although the variable proxying close social network abroad of the individual is such that it can be located in any foreign country, not necessarily in the destination country, there is still a potential issue. One needs to identify what drives the correlation between individual and peers' migration intentions (or decisions). In particular, there could be prior similarities between individuals, what Manski (1993) refers to as "correlated effects", that is individuals belonging to the same group tend to behave similarly as they face a common environment. Not controlling for these could lead to an endogeneity problem. Hence in order to establish causality, in this section, I run instrumental variable regressions. Although the preferred regressor is logit,[36] as it cannot be run as an IV, regressions are run with an IV probit.[37]

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[36] Given the 0/1 dependent variable, and fixed effects.

[37] While one of the main objectives of this article is to compare relative importance of the different determinants, which was achieved in the previous section partly by looking at Shapely values, this cannot be done after an IV regression. Hence, IV regressions are only used as a robustness check.

Close social network abroad of an individual is composed of friends and family members who most likely lived in close vicinity, in the same region as the individual before going abroad. The size of the close network abroad will be bigger the more friends and family members migrated abroad, which should be highly correlated with factors driving these individual's migration decisions. From the data, I can calculate the *ex ante* average perception of factors driving migration decisions at regional level. How people perceive local amenities or the average income in a region are important factors influencing migration decisions. As such, I will use the *ex ante* region-level average satisfaction with the city and the *ex ante* region-level average of relative income as instruments for close networks, while separating out the individual's own current perception of these factors which would influence only the individual's decision to migrate

For instruments, I use 2-year lags.

Appendix Table A10 presents IV regressions for the full sample, with the second column showing standardized variables (beta coefficients) for easier comparison of the magnitude of the effects between variables. The sign and significance of most of the control variables remain the same as the results presented without IV. Most importantly, social networks both abroad and at home are significant, with foreign networks driving intentions while local networks having a negative impact on international migration intentions. Looking at the standardized coefficients, one can see that similarly to earlier results, while the income difference is important in explaining migration intentions, there are a number of nonfinancial factors which are jointly more importantly drive migration intention patterns.

Appendix Table A10. IV Regression Results.

Variables	Intention to migrate	Beta coeff.	First stage results variables	Social network abroad
Origin politics	−0.111 (0.027)***	−0.109	Origin politics	0.001 (0.003)
Origin infrastructure	−0.041 (0.016)**	−0.040	Origin infrastructure	0.010 (0.003)***
Destination politics	−0.058 (0.021)***	−0.058	Destination politics	−0.003 (0.000)***
Destination infrastructure	0.132 (0.042)***	0.132	Destination infrastructure	0.016 (0.001)***
Destination population	0.184 (0.031)***	0.258	Destination population	−0.002 (0.000)***
Contiguity	0.198 (0.064)***	0.032	Contiguity	−0.008 (0.001)***
Common language	0.401 (0.076)***	0.147	Common language	−0.002 (0.000)***
Colonial links	0.290 (0.079)***	0.031	Colonial links	0.015 (0.001)***

(continued)

Appendix Table A10. (continued)

Variables	Intention to migrate	Beta coeff.	First stage results variables	Social network abroad
Distance	−0.221	−0.169	Distance	−0.002
	(0.044)***			(0.000)***
Visa	−0.162	−0.074	Visa	0.001
	(0.042)***			(0.000)***
Income difference	0.176	0.250	Income difference	−0.029
	(0.014)***			(0.002)***
Social network abroad	1.533	0.731	Social network at origin	0.141
	(0.545)***			(0.006)***
Social network at origin	−0.165	−0.066	Employment	−0.010
	(0.090)*			(0.005)**
Employment	−0.020	−0.013	Job satisfaction	0.035
	(0.022)			(0.007)***
Job satisfaction	−0.123	−0.057	Married	−0.013
	(0.034)***			(0.006)**
Married	−0.065	−0.031	Age	−0.011
	(0.039)*			(0.008)
Age	−0.267	−0.097	Education	0.070
	(0.069)***			(0.005)***
Education	−0.011	−0.007	Female	0.009
	(0.061)			(0.006)*
Female	−0.079	−0.039	Large city	0.054
	(0.028)***			(0.007)***
Large city	0.073	0.035	Number of children	0.001
	(0.069)			(0.002)
Number of children	0.012	0.022	Experienced well-being	0.025
	(0.008)			(0.010)**
Experienced well-being	0.085	0.024	Regional income	0.057
	(0.058)			(0.009)***
Constant	−2.326	−3.548	Regional city satisfaction	−0.028
	(0.453)***			(0.023)
			Constant	0.075
				(0.048)
			athrho2	−0.551
				(0.345)
			Insigma2	−0.854
				(0.003)***
			N	3,087,335

Note: The table shows results of IV probit (sample-weighted) regressions, standard errors are clustered at individual-level, all specifications include country-year fixed effects. The dependent variable is a dummy for the intention to migrate to a specific destination. Origin and destination politics and infrastructure are standardized principal components measuring contentment with these factors. Income difference is the log of relative income difference between destination average income at equivalent education and the individual's current income. Social network abroad is a dummy variable for those individuals who have close friends or family abroad, while social network at origin is a dummy for those with close social network in the origin location. Employment measures the level of employment of the individual (unemployed/part time/full time), and job satisfaction is a dummy whether the person is satisfied with her/his job. Experienced well-being is an index measuring negative experiences the day before the questions were asked.

Appendix B: Principal Component Construction

Appendix Table A11. Eigenvalues and Proportion Explained by the First Components of Principal Components.

Principal component-based variables	Eigenvalue	Proportion explained by the first component
Satisfaction with politics	4.001	0.572
Satisfaction with infrastructure	3.998	0.444

Table A12. Scoring Coefficients for Infrastructure Principal Component.

Variable/response	Scoring coefficient
Satisfied with air quality	
Not satisfied	−0.479
Satisfied	0.085
Satisfied with water quality	
Not satisfied	−0.497
Satisfied	0.122
Satisfaction with the public transportation system	
Not satisfied	−0.441
Satisfied	0.145
Satisfaction with the roads/highways	
Not satisfied	−0.428
Satisfied	0.173
Satisfaction with the schools/education system	
Not satisfied	−0.523
Satisfied	0.132
Satisfaction with the availability of healthcare	
Not satisfied	−0.473
Satisfied	0.172
Satisfaction with the availability of housing	
Not satisfied	−0.391
Satisfied	0.165
Satisfaction with the beauty or physical setting	
Not satisfied	−0.498
Satisfied	0.111
No thefts	
Yes, some theft	−0.204
No theft	0.022

Note: Polychoric principal component analysis was used (see Kolenikov and Angeles 2004) to calculate the principal components, retaining the first component for each dimension. See Table 2 for the list of questions used for each index.

Appendix Table A13. Scoring Coefficients for Politics Principal Component.

Variable/response	Scoring coefficient
Confidence in the military	
No	−0.413
Yes	0.168
Confidence in the judicial system/courts	
No	−0.328
Yes	0.306
Confidence in the national government	
No	−0.365
Yes	0.343
Confidence in the fair elections	
No	−0.303
Yes	0.322
Spread of corruption in government	
Government corruption is widespread	−0.123
Government corruption is not widespread	0.401
Approval of country leadership's job performance	
Disapprove	−0.339
Approve	0.311
Approve of city leadership	
Not satisfied	−0.324
Satisfied	0.213

Note: Polychoric principal component analysis was used (see Kolenikov and Angeles 2004) to calculate the principal components, retaining the first component for each dimension. See Table 2 for the list of questions used for each index.

Appendix C: Descriptive Statistics
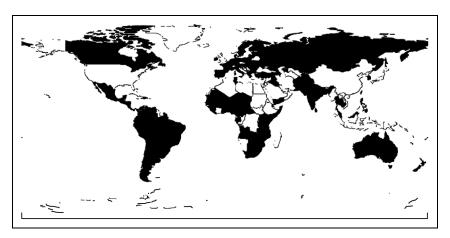
Appendix Table A14. Descriptive Statistics.

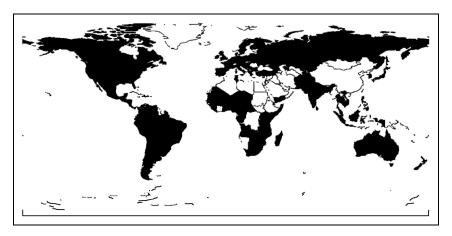| Variable	Obs	Mean	Std. Dev.	Min	Max
Intentions to migrate	5,122,441	0.0002	0.0154	0.0000	1.0000
Origin politics	5,122,441	0.0374	0.9881	−1.6251	1.5336
Origin infrastructure	5,122,441	−0.0955	0.9766	−2.2638	1.3410
Destination politics	5,122,441	0.5152	0.1456	0.2166	0.9474
Destination infrastructure	5,122,441	0.6323	0.1325	0.2901	0.8732
Destination population	5,122,441	7.3795	1.4078	3.7287	11.7254
Contiguity	5,122,441	0.0286	0.1666	0.0000	1.0000
Common language	5,122,441	0.1784	0.3828	0.0000	1.0000
Colonial links	5,122,441	0.0114	0.1061	0.0000	1.0000
Distance	5,122,441	8.7086	0.7648	4.0129	9.9010
Visa	5,122,441	0.7279	0.4501	0.0000	2.0000

Appendix Table A14. (continued)

Variable	Obs	Mean	Std. Dev.	Min	Max
Income difference	5,122,441	0.5828	1.4300	−4.6736	6.4050
Social network abroad	5,122,441	0.3678	0.4822	0.0000	1.0000
Social network at origin	5,122,441	0.7900	0.4073	0.0000	1.0000
Employment	5,122,441	1.6519	0.6767	0.0000	2.0000
Job satisfaction	5,122,441	0.6638	0.4724	0.0000	1.0000
Married	5,122,441	0.6339	0.4817	0.0000	1.0000
Age	5,122,441	3.5667	0.3654	2.7081	4.6052
Education	5,122,441	1.7592	0.6814	1.0000	3.0000
Female	5,122,441	0.4257	0.4945	0.0000	1.0000
Large city	5,122,441	0.3632	0.4809	0.0000	1.0000
No. of children	5,122,441	1.7308	1.8543	0.0000	7.0000
Experienced well-being	5,122,441	0.2464	0.2809	0.0000	1.0000

Appendix D: Sample Coverage

Appendix Figure 2. Geographic Coverage of the Origin Countries.
Note: Countries included in the estimations are shaded in dark color, other countries are not included.

Appendix Figure 3. Geographic Coverage of the Destination Countries.
Note: Countries included in the estimations are shaded in dark color, other countries are not included.

Appendix E: Distinguishing Between Intentions to Migrate Locally and Internationally[38]

World Poll survey contains several questions that can help distinguish between intention to migrate locally and internationally (and possibly distinguishing temporary and permanent moves, as well as comparing weak with strong intentions). The relevant questions are:

- WP85 — "In the next 12 months, are you likely or unlikely to move away from the city or area where you live?"
- WP1325 — "Ideally, if you had the opportunity, would you like to move PERMANENTLY to another country, or would you prefer to continue living in this country?"
- WP10252 — "Are you planning to move permanently to another country in the next 12 months, or not?"[39]
- WP9455 — "Have you done any preparation for this move? (For example, applied for residency or visa, purchased the ticket, etc.)"[40]
- WP9498 — "Ideally, if you had the opportunity, would you like to go to another country for temporary work, or not?"

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[38] This appendix draws on Manchin and Orazbayev (2018).
[39] WP10252 is asked only for individuals that responded "Yes" to WP1325.
[40] WP9455 is asked only for individuals that responded "Yes" to WP10252.

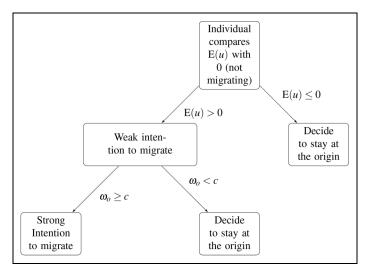**Appendix Table A15.** Identifying Intentions to Migrate Locally and Internationally — Motivation.

Are you likely to move*a*?	Would you like to move abroad*b*?	Are you planning to move abroad*c* ?	Imputed status	Motivation
Likely to move	Like to continue living in this country	The question is not asked.	Intention to migrate locally	Likely to move locally, because there is no expression of a desire to move abroad.
	Like to move to another country	No	Dreamer (moving locally)	Likely to move locally, since the move abroad will be taken only under ideal conditions.
		Yes, will move in next 12 months	Intention to migrate internationally	Likely to move internationally, since indicated move (WP85) and took steps for moving to a foreign location.
Not likely to move	Like to continue living in this country	The question is not asked.	Intention to stay	Not likely to move.
	Like to move to another country	No	Dreamer	Would like to move away, but no intention to do so in the near future.
		Yes, will move in the next 12 months	Contradictory response	The response to WP85 contradicts answer to WP10252. Can treat these responses as either stayers or international migrants, or alternatively can discard these observations (the last option is used for this paper).

Notes:
^aFull question: "In the next 12 months, are you likely or unlikely to move away from the city or area where you live?".
^bFull question: "Ideally, if you had the opportunity, would you like to move PERMANENTLY to another country, or would you prefer to continue living in this country?".
^cFull question: "Are you planning to move permanently to another country in the next 12 months, or not? (asked only of those who would like to move to another country)".

Appendix Figure 4. Decision Tree for the Individual — Weak Versus Strong Intention.

The answer to WP85 can help identify individuals that are likely to migrate — locally or internationally. Arguably, WP85 elicits firmer intentions than those elicited by questions WP1325 and WP9498 (". . . are you likely to move. . ." vs. "ideally, if you had the opportunity, would you like to move. . ."). The closest phrasing is in question WP10252: similar time periods (next 12 months), relatively firm intention (there is no reference to ideal conditions or opportunities); and in question WP9455: similar time period and firm intention (steps already taken).

A rigorous interpretation of WP85 and WP10252/9455 would require many further clarifications to make them congruent. First, WP85 does not contain indication of the length of the move (temporary vs. permanent), while WP10252 is specifically applicable to permanent migration. This means that for further comparison one needs to assume that WP85 is interpreted for permanent moves. Second, it is possible that an individual will move locally before permanently migrating abroad. This means that separation between local and international migration will be based only on intended final destination in 12 months' time. Third, in terms of firmness of intentions, WP85 appears to be between WP10252, which is a bit weaker than WP85, and WP9455, which is a bit stronger than WP85. Since WP9455 is asked only given positive response to WP10252, the sample size will be larger if WP10252 is used for comparison with WP85. The procedure below can be modified to use WP9455 instead, if needed. Fourth, there could be different interpretations of WP1325 by natives and current migrants. Current migrants might not think of returning home as a permanent move to another country. This issue will be ignored in the procedure below, but can be addressed to some extent by filtering out current migrants from the sample.

Assuming that individuals interpret questions WP85 and WP10252 in a similar way, it is possible to use these questions to distinguish between those that intend to move locally and internationally. The intended final destination in 12 months' time can be:

- Current location;
- Domestic location (local migration); and
- Foreign location (international migration).

Appendix Table A15 summarizes possible combinations and separates individuals into three categories, depending on their intention to stay, migrate locally, or internationally. The number of observations in each category is presented in Table 1.

Data Availability Statement

The core data used for this study are available from the Gallup Organization. Data are available from the author in case permission is obtained from the Gallup Organization.

Author's Note

Miriam Manchin is also affiliated at University College of London, UK.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Supplemental Material

Supplemental material for this article is available online.

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