DYNAMIG

DEC / 2025

Paper

Subjective Perceptions and Migration Aspirations in Kenya, Morocco, Nigeria, Senegal, and Tunisia: 2020–2023

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We examine how subjective perceptions shape migration aspirations in Kenya, Morocco, Nigeria, Senegal, and Tunisia. Combining Gallup World Poll survey data (2020–2023) with subnational indicators on economic activity, infrastructure, and conflict, we show that perceptions differ systematically by individual characteristics but are only weakly related to objective macro conditions. More positive perceptions are consistently associated with lower aspirations to migrate. Mediation analysis indicates that perceptions account for a meaningful share of the link between micro- and macro-factors: 7–30% of the correlation between macro conditions and aspirations is mediated by perceptions, while micro effects are smaller. Our findings highlight the importance of subjective interpretations in migration decision-making and suggest that policies focusing solely on improving objective origin conditions may fall short if such improvements are not perceived by individuals.

This paper was produced as part of the Horizon Europe project DYNAMIG. This project is funded by the European Union's Horizon Europe research and innovation program under grant agreement number 101094347.

Funded by the European Union

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Non-technical summary

Migration decisions are shaped not only by objective economic and political conditions but also by how individuals perceive their environment. While much research emphasizes structural factors such as income levels or political stability, this study highlights the central role of subjective perceptions in shaping migration aspirations. This distinction matters for policy: if people decide to migrate based on perceptions rather than realities, projects designed to improve living standards in origin countries may not reduce migration unless such improvements are recognized and experienced.

Using survey data from five African countries—Morocco, Tunisia, Senegal, Nigeria, and Kenya—we ask: (i) how do perceptions vary across people with different individual characteristics such as gender, age, or income, (ii) how do perceptions affect migration aspirations, and (iii) to what extent do individual and regional factors shape aspirations through their influence on perceptions?

We find that perceptions vary systematically with individual characteristics, including age, gender, and income but objective local conditions also matter: A better healthcare system, more roads, and lower violence at the subnational level are linked to positive perceptions of infrastructure, safety, and the government.

Those insights have serious implications for migration aspirations. We find that positive perceptions across different domains are consistently linked to lowered migration aspirations, while for objective factors, such as the economic situation, the results are less intuitive. For example, people in economically stronger regions are

more likely to express migration aspirations. Our results suggest this may be because higher local prosperity raises standards and expectations, leading individuals to evaluate their situation more negatively. Also, access to information through the internet plays a pivotal role in shaping such perceptions. We explore such an indirect “mediation” effect and find that parts of the individual and the objective effects on migration aspirations run through their influence on perceptions. Additionally, we confirm that younger, lower-income, male, and highly educated respondents are more likely to aspire to migrate.

Overall, the findings underscore that perceptions are central to migration decisions. Individual characteristics and perceptions are more influential than objective origin conditions, but the latter can influence aspirations indirectly by shaping perceptions. For policy, this means that economic, social, or security improvements alone may not lower migration aspirations unless they also change how people perceive and interpret their environment. Ensuring access to accurate and trusted information is therefore crucial to align perceptions with realities and to design more effective migration policies.

Introduction

Subjective perceptions of economic and social environments play a critical role in shaping individual decisions (e.g., Claus and Dedewanou, 2024; Helbling and Morgenstern, 2023). Individuals exposed to the same conditions often interpret these contexts differently, leading to variations in economic behavior (Helbling et al., 2021). This is particularly evident in migration, where aspirations and decisions are influenced not only by objective realities but also by personal interpretations of contextual factors and socially constructed narratives of the future (e.g., Vezzoli, 2023; Black et al., 2022). Migration is thus not simply a reaction to structural "push–pull" factors, but a decision shaped by expectations, evaluations of opportunity structures, and assessments of future prospects (De Haas, 2021; Carling and Schewel, 2018). Understanding how individuals perceive their environment and what expectations they derive is central to grasping their decisions, including the decision to migrate (Helbling and Morgenstern, 2023; Debray, Ruyssen and Schewel, 2023; Schneiderheinze and Tohoff, 2021; Dustmann and Okatenko, 2014). Recognizing this subjective dimension is critical for both theory and policy. Policies aimed at addressing the "root causes" of migration by improving living conditions may fail if improvements are not perceived by individuals.

This paper examines how individual characteristics and macroeconomic conditions influence migration aspirations, with a specific focus on the mediating role of subjective perceptions and expectations. We focus on three interrelated questions: (i) how subjective perceptions of contextual factors differ between individuals in the same environment, (ii) how subjective perceptions affect migration aspirations, and

(iii) whether perceptions mediate the relationship between objective conditions or micro-level factors and aspirations.

We address these questions using Gallup World Poll microdata (2020–2023) from five African countries—Kenya, Morocco, Nigeria, Senegal, and Tunisia—linked to novel regional-level indicators on infrastructure, economic activity, and conflict. These countries represent diverse regions of Africa that are central for migration to Europe, differing in structural conditions, migration histories, and policy environments. We estimate probit models and a causal-mediation decomposition to quantify direct and indirect associations (not causal effects). Our contributions are threefold. First, we show that perceptions vary systematically along micro-level characteristics, such as age, gender, education, and internet access, but are only weakly and inconsistently related to objective macro indicators. This is consistent with Helbling and Morgenstern (2023), who, using Afrobarometer data find that perceptions are relatively independent of objective country-level conditions. We extend their findings in two ways. First, we use more granular subnational data (admin1) for macro indicators, which allows for within-country variation, but we still find that macro conditions explain little of the variation in perceptions. Second, we cover a broader range of perceptions, including amenities such as healthcare, housing, and transportation, in addition to political and economic evaluations. Our results thus reinforce the view that perceptions are shaped more by “who” the respondent is than by “where” they live.

Second, we demonstrate that across all nine perception domains, more positive evaluations are associated with significantly lower migration aspirations. This aligns with the pull–push logic embedded in migration theory and with the empirical findings of Helbling and Morgenstern (2023). Our results also confirm the negative perception–aspiration link found in Migali and Scipioni (2019) and Aslany et al.

(2021). We extend these studies by showing that this association holds in a wider set of perceptions and in a more recent post-2020 African sample.

Third, we assess the mediating role of perceptions. Our results indicate that perceptions account for a modest but meaningful share of the association between both micro and macro factors and migration aspirations. For macro-level variables, such as demonstrations, fatalities, and infrastructure, the mediated share ranges from 7–30%. For micro-level factors such as gender, mediation can operate in opposite directions: in some cases, amplifying the total effect (e.g., when negative perceptions align with higher aspirations), and in others, suppressing it (e.g., when positive perceptions counteract the direct effect). These findings nuance those of Helbling and Morgenstern (2023), who find little evidence of mediation, by showing that perceptions can partially transmit both micro- and macro-effects, although the magnitudes remain modest.

The remainder of the paper is structured as follows. Section III outlines the conceptual framework. Section IV introduces the data sources and key variables. Section V presents a set of stylized facts. Section VI details the empirical strategy, and Section VII reports the main findings. Section VIII concludes.

Conceptual framework

Understanding migration aspirations requires moving beyond simplistic models of movement and examining the cognitive and contextual processes that precede actual migration. This chapter reviews the relevant theoretical and empirical literature on the determinants of migration aspirations, focusing on how individual characteristics and macroeconomic conditions influence these aspirations, and critically, how subjective perceptions and expectations mediate this relationship.

International migration is increasingly conceptualized as a multi-stage process, where the decision to move is preceded by the formation of aspirations shaped by both internal motivations and external conditions (De Haas, 2021; Carling, 2002). The notion of migration aspirations has gained prominence as scholars seek to understand not only who migrates, but also who wishes to migrate and under what circumstances (Carling and Schewel, 2018; Migali and Scipioni, 2019). Migration aspirations encompass an individual's cognitive and emotional orientation toward the possibility of migrating in the future, including their intentions, preferences, and desires (Aslany et al., 2021). It is important to distinguish between aspirations and actual migration outcomes. Many individuals who aspire to migrate may lack the necessary capabilities or opportunities to do so (Carling, 2002; De Haas, 2021). This distinction is central to the aspirations-capabilities framework, which posits that migration occurs only when aspirations are matched by the ability to act on them. According to this framework, migration is best understood as a function of both an individual's aspirations and their capabilities, formed within a broader landscape of opportunity structures (Carling and Schewel, 2018; De Haas, 2021). Traditional migration theories, such as push-pull models or neoclassical utility-maximizing

frameworks, have been criticized for their limited ability to explain migration behavior, particularly in light of empirical observations that migration often occurs from middle-income countries rather than the poorest regions (De Haas, 2021; Clemens, 2022). Recent theoretical developments emphasize a stepwise and dynamic understanding of migration, where the decision to move is not merely a response to macroeconomic disparities but is shaped by a complex interplay of individual agency, social networks, and perceptions of opportunity (Xiang and Lindquist, 2014; Carling and Schewel, 2018).

Empirical studies consistently demonstrate that both macroeconomic conditions and individual-level traits are significant predictors of migration aspirations. To fully capture the drivers of migration aspirations, it is essential to distinguish between factors operating at different analytical levels—macro, meso, and micro, and their link to subjective perceptions. At the macro level, structural conditions such as national economic development, political stability, institutional quality, and governance play a foundational role in shaping the context within which individuals form migration aspirations. For example, Auer, Roemer and Tjaden (2020) show that corruption increases migration aspirations using country-level indicators as well as cashless payment reliance as instrumental variables. van Mol (2016) finds that relative welfare is negatively correlated with migration aspirations of young Europeans, while estimates for youth unemployment indicate a positive relationship, as greater job market competition among young people might contribute to migration aspirations. Armed conflict also influences migration aspirations, although effects do not appear directly at the macro-level, but rather through its influence on individual characteristics like income, which becomes less important for migration aspirations in conflict affected regions Ruhe and Kuhnt (2025).

Meso-level factors serve as intermediaries between structure and agency, encompassing social networks, policy frameworks, and infrastructural systems that either facilitate or constrain migration. The presence of migration networks and community-level information channels significantly shapes perceptions of migration feasibility and desirability (Dekker and Engbersen, 2014; Xiang and Lindquist, 2014).

At the micro level, individual attributes such as age, gender, education, employment status, and risk preferences have direct effects on migration aspirations (Aslany et al., 2021). For example, younger individuals typically exhibit higher migration aspirations, while men are more likely than women to express an intention to migrate. Higher education is consistently associated with stronger aspirations, likely due to an expansion of perceived opportunity structures and life goals. Finally, contextual factors refer to the immediate local environments shaped by the intersection of macro, meso, and micro influences. These include access to public services, neighborhood safety, and community dynamics, all of which influence perceptions of quality of life and, consequently, the desirability of staying versus leaving (Trauner et al., 2023; Czaika and Reinprecht, 2022). These levels are not independent; rather, they interact in shaping the cognitive processes that inform migration aspirations. For instance, national-level economic indicators influence local labor markets, which in turn shape individual assessments of economic prospects and social mobility. Previous results also indicate that non-economic macro developments like conflict can affect the relative importance of individual factors like income Ruhe and Kuhnt (2025).

Subjective perceptions—individuals' interpretations of their social, economic, and institutional context—are central to understanding migration aspirations. Beyond objective indicators, perceptions determine how people evaluate their living conditions

and future prospects, thereby shaping their behavioral intentions (Helbling and Morgenstern, 2023; Debray, Ruyssen and Schewel, 2023; Schneiderheinze and Tohoff, 2021; Dustmann and Okatenko, 2014). This is especially important because individuals sharing the same environment can hold divergent perceptions. Two residents of the same city could report markedly different levels of safety, opportunity, or institutional trust, reflecting differences in social positioning, reference groups, and prior experiences. These perceptions are shaped not only by direct observation but also by cultural narratives, peer networks, and broader societal discourse (Helbling and Morgenstern, 2023; Vezzoli, 2023). Subjective perceptions exert a direct influence on migration aspirations. Higher satisfaction with public services, healthcare, education, and security is generally associated with a lower desire to migrate, whereas dissatisfaction tends to increase migration intentions (Helbling and Morgenstern, 2023; Debray, Ruyssen and Schewel, 2023). Perceptions of change over time are particularly salient: individuals who believe economic or social conditions are deteriorating are more inclined to migrate, while perceptions of improvement encourage staying (Vezzoli, 2023). Moreover, subjective assessments of safety, trust in institutions, and quality of life have been shown to predict aspirations independently of objective indicators (Helbling and Morgenstern, 2023). Subjective perceptions also function as mediators between macro-level conditions, micro-level attributes, and migration aspirations. For instance, the predictive effect of employment status on migration aspirations weakens when subjective economic well-being is taken into account (Dennison, 2022). Similarly, perceptions of gender equality can mediate the relationship between gender and aspirations: women perceiving high levels of gender-based discrimination may be more likely to aspire to migrate despite structural barriers (Morgenstern and Vargas-Silva, 2025). The formation of such perceptions is influenced by access to information, personal experiences, and cognitive biases (see e.g., Armantier et al., 2015; Guetto et al., 2023). Information channels, such as traditional media, social media (Garz, 2013; Dr¨ager, 2015), and

interpersonal networks, play a critical role in shaping interpretations of macro, meso, and contextual factors.

The framework yields three empirical predictions: (i) Conditional on country and admin1, micro-level factors (age, gender, education, income, internet, etc.) are systematically associated with each perception. Thereby, we expect that Admin1 macro indicators explain less variation in perceptions than micro-level factors. (ii) Positive perceptions of local conditions are associated with lower migration aspirations. (iii) Perceptions partly mediate the relationship between (a) macro conditions and aspirations (e.g., such that part of the negative association between paved roads and migration aspirations reflects the improvement in transport perceptions), and (b) micro characteristics and aspirations (e.g., gender differences in perceived safety/treatment of women). We expect partial mediation (non-zero but modest shares).

Data

This section summarizes our data sources and explains all procedures used to prepare the data. The analysis draws primarily on the Gallup World Poll (GWP), an annual, nationally representative survey conducted in more than 150 developed and developing countries, covering at least 98% of the global adult population. Sampling is nationally representative, conducted face-to-face in low- and middle-income countries and by telephone in some high-income countries, with typical country sample sizes of about 1,000 individuals. The GWP is widely used in migration research due to its unique combination of migration-related questions, broad country coverage, and inclusion of both objective and subjective measures (e.g., Dustmann and Okatenko, 2014; Migali and Scipioni, 2019; Auer, Römer and Tjaden, 2020; Bertoli et al., 2022; Ruhe and Kuhnt, 2025).

We focus on five African countries—Kenya, Morocco, Nigeria, Senegal, and Tunisia—over the period 2020–2023, yielding a total of 20,054 observations, equally distributed across the five countries. The average respondent is 35.5 years old, 51% are women, the average annual income is approximately USD 2,000, 55% are employed, and 58% report having internet access[1]. Throughout the analysis, GWP survey weights are applied to variables and models whenever possible to ensure maximum representativeness.

Our variable construction is closely aligned with the theoretical framework outlined in Section II, which emphasizes the role of subjective perceptions in shaping migration

[1] Table A2 lists the complete set of micro-level variables used in the analysis. Summary statistics are reported separately for each of the five countries.

aspirations and their potential to mediate the effects of objective structural conditions and individual characteristics. We therefore combine GWP micro-level variables, subjective perception measures, and migration aspirations with an additional set of macro-level variables merged at the subnational (admin1) level. The subnational scale is chosen because it is the most granular level consistently provided in the GWP, and because it allows us to match individuals to the relevant macroeconomic, infrastructural, and security context in which their perceptions are formed.

A. Micro-level variables

Our micro-level variables capture demographic and socioeconomic characteristics that may directly influence migration aspirations or shape subjective perceptions. All micro-level variables are derived from GWP survey questions, with some requiring minor recoding. We include the following: age, gender, income, marital status, urbanization, education, presence of children in the household, religion, internet access, and experience of hunger.

Age is recorded as a numeric variable indicating the respondent's current age; in certain models, we recode it into a dummy variable identifying individuals aged 35 or younger. Robustness checks confirm that results are qualitatively unchanged when using the continuous age variable. Income denotes annual per capita income in international dollars,[2] while all remaining micro-level variables are coded as binary indicators. Male equals one for male respondents. Married identifies respondents currently married. Children indicates the presence of at least one child aged 15 or younger in the household.

[2] The GWP calculates annual per capita income (INCOME_4) $by dividing household income (INCOME_2)$ $by household size.$

Following Migali and Scipioni (2019), Employed equals one for respondents in full-time, part-time, or self-employment, and zero for those unemployed or out of the labor force. City identifies individuals living in urban areas (a large city or its suburbs) versus rural areas. Education distinguishes between low education (elementary school, less than 9 years) and high education (secondary or tertiary school, more than 9 years); alternative categorical coding alternatives were also tested. Internet indicates whether the respondent has access to the internet.[3]

These micro-level indicators allow us to account for key demographic and socioeconomic characteristics that may both influence perceptions and directly affect migration aspirations. Additional details on GWP variable transformations and the complete set of summary statistics are provided in Appendix Tables A1 and A2.

B. Subjective perceptions

The GWP also provides extensive information on respondents' evaluations of economic, social, and institutional conditions, making it a crucial data source for migration studies that intend to capture dynamics beyond classic micro and macro levels Auer, Römer and Tjaden (2020). We construct binary indicators for positive perceptions across nine distinct dimensions: education, healthcare, housing, roads, local economy, standard of living (SoL), safety, treatment of women, and confidence in the national government.

These variables capture how individuals interpret their immediate environment, rather than the environment's objective state. They allow us to examine variation in perceptions among individuals living in the same structural context. They also

[3] While internet access could be considered a meso-level variable between micro- and macro-levels, we classify it here as micro-level for simplicity, in line with our theoretical framework, which already places perceptions between these two main levels.

enable us to assess both the direct association between perceptions and migration aspirations, and the mediating role of perceptions between objective conditions and micro-level attributes such as gender.

Four perception variables: satisfaction with the educational system or schools, satisfaction with the availability of quality healthcare, satisfaction with the availability of good affordable housing, [satisfaction with the public transportation systems], and satisfaction with roads and highways, are based on questions with the following structure:

> In the city or area where you live, are you satisfied or dissatisfied with ...?

For these items, we code a dummy equal to one if the respondent reports being satisfied and zero otherwise. The same coding rule applies to perceived confidence in the national government[4], perceptions of the treatment of women[5], and perceptions of safety at night[6]. Perceptions of local economic conditions[7] and standard of living[8] are based on questions with more than two response categories ("getting better," "staying the same," "getting worse"). We create dummies equal to one for respondents reporting "getting better" and zero for "same" or "worse"."

C. Migration aspirations

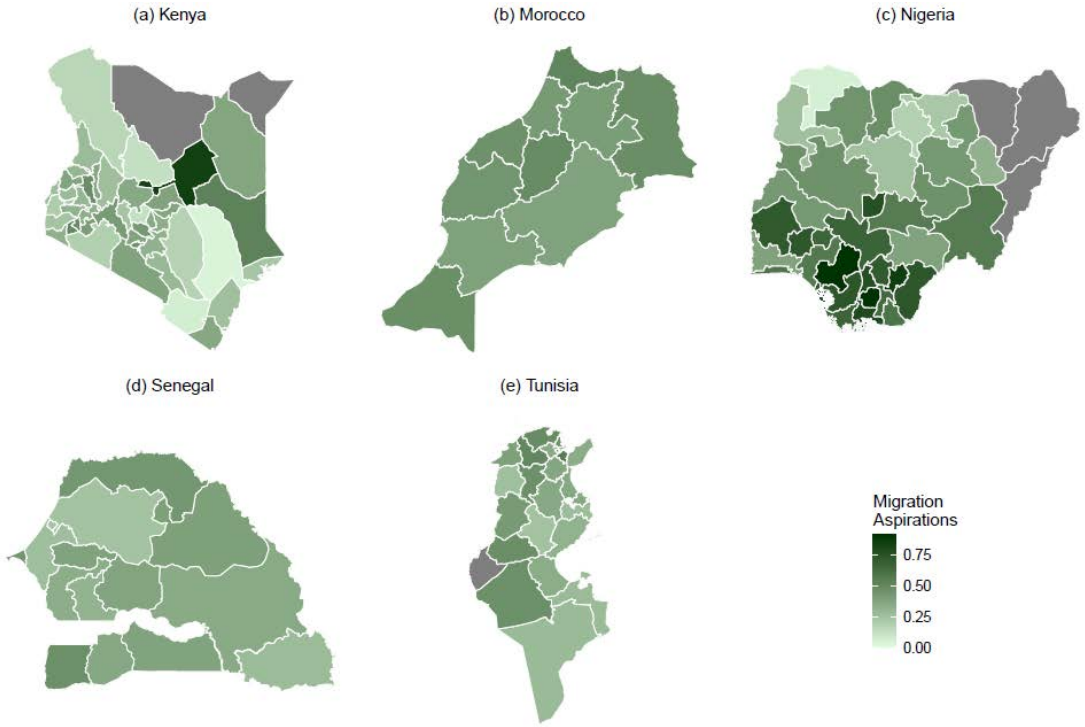
Migration aspirations are a core outcome variable in our analysis. They capture respondents' self-reported desire to move abroad, which allows us to examine (i) how subjective perceptions influence aspirations and (ii) how perceptions mediate

[4] "*Do you have confidence in each of the following, or not? How about the national government?"* (WP139)
[5] *"Do you believe women in (Country) are treated with respect and dignity, or not?"* (WP9050)
[6] *"Do you feel safe walking alone at night in the city or area where you live?"* (WP113)
[7] *"Right now, do you think that economic conditions in the city or area where you live, as a whole, are getting better or getting worse?"* (WP88)
[8] *"Right now, do you feel your standard of living is getting better or getting worse?"* (WP31)

the relationship between objective conditions and individual characteristics such as gender. While aspirations do not measure actual migration behavior, prior research shows that they are strong predictors of future migration flows (Bertoli and Ruyssen, 2018). We measure migration aspirations by relying on the question, which captures general migration potential and will hereafter be referred to as migration aspirations:

> 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? [WP1325]

Graph 1: Migration aspirations



Note: For all regions with missing values we checked that these values were in fact missing and not zero or coding errors. Source: Gallup (2024), own calculations.

Overall, 41.5% of respondents express a desire to migrate. Aspirations are highest in Nigeria (52.3%) and Morocco (44.6%), followed by Tunisia (38.7%), Senegal (36.9%), and Kenya (35.0%) (Appendix Table A2). Graph 1 plots the share of individuals with migration aspirations by region, revealing substantial spatial

heterogeneity within each country. In Nigeria, high-aspiration regions cluster in the south, while northern regions report markedly lower levels. In Kenya, aspirations are particularly elevated in certain central and eastern regions. Morocco, Tunisia, and Senegal exhibit a more even distribution.[9]

We base our analysis of migration aspirations on the 2021–2023 survey waves only, as the GWP did not include the question in 2019 and 2020, although it was part of earlier questionnaires. Despite its extensive use in migration research, recent GWP waves contain a limited set of migration-related questions. For example, items on concrete migration plans within the next 12 months or on migration preparations were only included until 2015. While measures of foreign networks, such as the Network Abroad variable in Migali and Scipioni (2019) or remittances as a proxy as in Helbling and Morgenstern (2023), our data contain no suitable proxy for the selected time frame.

D. Macro-level variables

To disentangle the role of perceptions from that of objective contextual conditions, we merge an additional set of macro-level variables at the subnational (admin1) level, the most granular geographic identifier consistently available in the GWP. Some variables are directly available at the subnational level, while others are aggregated from geospatial data.

INFRASTRUCTURE/AMENITIES

Our first source for objective macro variables is the Africa Infrastructure Database. Krantz (2024) gathers data from sources such as Open Street Maps to obtain infrastructure points on a geospatial grid and classifies them into 26 categories of

[9] Migration aspirations are missing for six regions.

interest. As an example, a point identified as a hospital would count towards the healthcare category, and a school towards education. Here, we aggregate these classified points to obtain a count of education, healthcare, and residential points per subnational region. Furthermore, Krantz (2024) provides the length of networks. We use the length of paved roads in kilometers and sum these values by region.

GRP

Although national GDP data is available for all five countries, only some statistical offices publish data at the subnational level *i* (admin1). We rely on a newly compiled GDP per capita dataset by Kummu, Kosonen and Masoumzadeh Sayyar (2025). Their data contains Gross Regional Product (GRP) per capita estimates $GRP_{j,t}^{pc}$ for the admin2 level *j* until 2022. Compared to previous sources of subnational GDP like Kummu, Taka and Guillaume (2018) or Wenz et al. (2023) their data provides a unique combination of geographical and time coverage. Still, admin1 level data is only available for Keya and thus we scale the $GRP_{j,t}^{pc}$ by 2020 population and obtain an upscaled $GRP_{i,t}$ at the subnational level *i* by aggregating all $j \in i$. Since we are interested in economic differences between regions, we average $GRP_{i,t}$ from 2019–2022, eliminating short-term time series fluctuation. GRP is reported in 2017 international $ PPP.

$$\mathrm{GRP}_{i,t} = \sum_{j \in i} \left(\mathrm{GRP}_{j,t}^{\mathrm{pc}} \cdot \mathrm{Population}_{j,2020} \right)$$

Population, Population Density and Nightlights

We source multiple geospatial variables from AidData. Drawing on AidData instead of the original source comes with the advantage of readily aggregated data instead of a gridded version. First, we source the population, which is the sum of total population in an area in 2020 (CIESIN, 2018a). Second, we use population density, measured as the average number of persons per square kilometer in 2020 (CIESIN, 2018b). Lastly, we use VIIRS nightlights. Since Henderson, Storeygard and Weil (2012) nightlights have been established as a proxy for economic activity when data coverage is insufficient. VIIRS nightlights are measured as the annual average sum of radiance in a region (Elvidge et al., 2021). To reduce short-term fluctuations, we take an average from 2022–2023. Cloud-free coverage was tested. Temporal coverage was chosen due to the availability of the data.

Demonstrations

To obtain macro measures related to government performance, we draw on the Armed Conflict Location and Event Data (ACLED) by (Raleigh, Kishi and Linke, 2023). Specifically, we obtain the count of demonstration events recorded from 2020–2023 in each region. Demonstrations capture several subevents ranging from peaceful protests to violent riots with interventions.

Organized Violence

To cover safety concerns objectively we use the Georeferenced Event Dataset (GED) version 24.1 by the Uppsala Conflict Data Program (UCDP). The dataset by Sundberg and Melander (2013) and Davies et al. (2024) contains detailed geocoded information about state-based conflict, non-state conflict, and one-sided violence

events. Events are included once they reach a threshold of 25 annual battle-related deaths. Smaller incidents in the following years, where the threshold is not met, are also included. We draw on the estimated total fatalities variable best, which includes fatalities from all parties, including civilians. To measure the intensity of violent events, we aggregate fatalities at the subnational level from 2019–2023.

Full summary statistics for all variables are reported in the Appendix (Tables A2, A3, A4).

Stylized facts

Before turning to our empirical strategy, we present a set of descriptive graphs and maps that offer a first look at the patterns in our data. These stylized facts serve two purposes. First, they allow us to assess whether our sample of five African countries exhibits patterns consistent with findings from the broader migration literature. Second, they illustrate how key variables in our theoretical framework—subjective perceptions, migration aspirations, and contextual factors—vary across individuals and regions. All patterns shown here are purely correlational and should not be interpreted as causal relationships. They provide an empirical motivation for the econometric analysis in the next section.

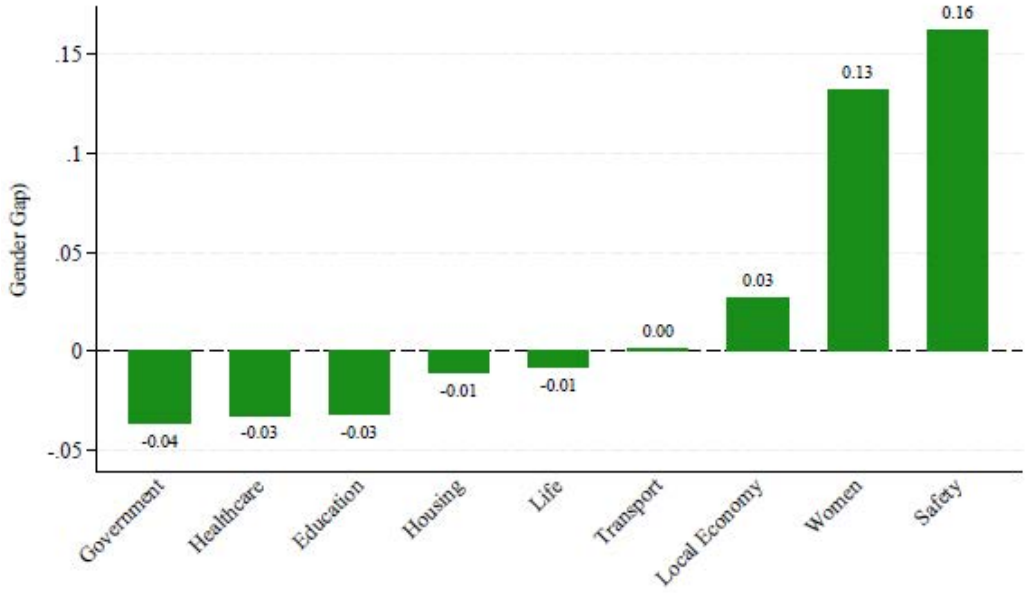
A. Subjective perceptions

Subjective perceptions—such as views on the local economy, infrastructure quality, or safety—are, by definition, related to the objective reality. However, they may also vary systematically with micro-level characteristics (e.g., gender) and meso-level factors (e.g., internet access). For example, women may assess gender equality differently due to differences in social experience and exposure to discrimination, while individuals without internet access might have more limited information sources, shaping how they evaluate local conditions.

To illustrate such differences, we plot perception gaps by gender and by internet access. For each perception variable, the gap is defined as the difference in the

share of individuals with positive perceptions between two groups. A negative gap indicates that the first group (men, or those with internet access) is less likely to hold a positive perception than the reference group (women, or those without internet access). Gaps are measured in percentage points, indicating the average difference in the likelihood of reporting a positive perception.

Graph 2: Gender gaps in perceptions

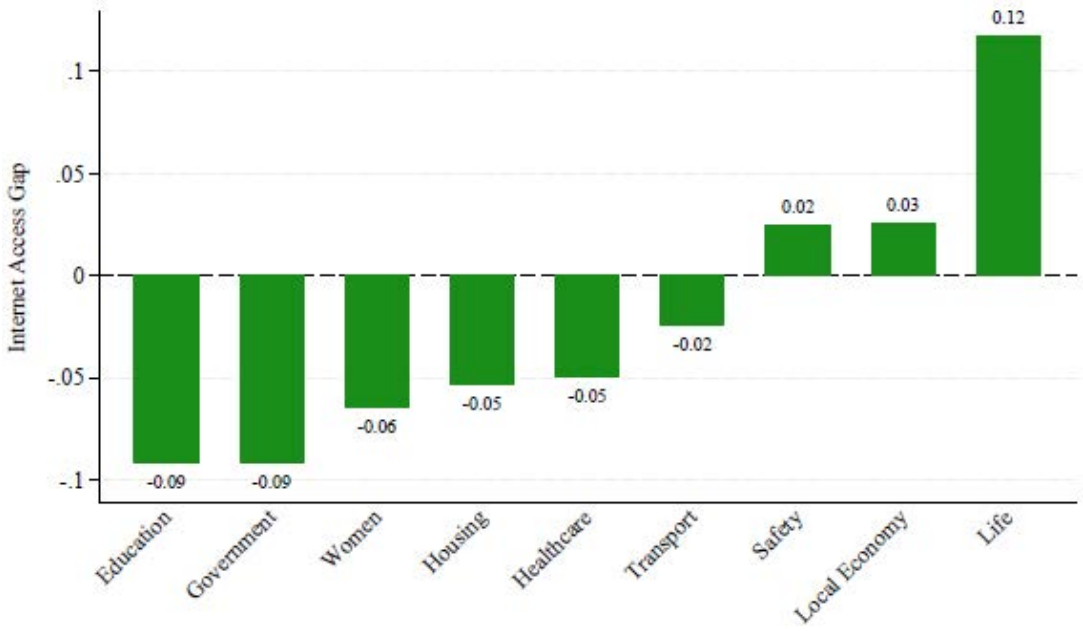


Note: Gender gap are calculated as the difference between the male and the female sample share with positive perceptions. Source: Gallup (2024), own calculations.

Graph 2 presents the gender gap. Men are less confident in the government and less satisfied with infrastructure, such as healthcare and housing. Perceptions of standard of living (SoL), housing, and transport are relatively balanced across genders. Conversely, men are more satisfied with the state of the local economy. The largest differences appear in perceptions of gender equality and safety: the share of men who believe women are treated with dignity is 13 percentage points higher than for women, and the gender gap widens to 16 percentage points in the

perception of safety when walking alone at night. These large disparities are consistent with the idea that subjective safety and dignity perceptions are influenced by individuals' direct social experiences.

Graph 3: Internet access gaps in perceptions



Note: Gaps are calculated as the difference between the sample shares with internet access and without, that have positive perceptions. Source: Gallup (2024), own calculations.

Graph 3 shows perception gaps by internet access. Individuals with internet access are, on average, 9 percentage points less likely to be satisfied with the educational system and to have confidence in the government. They also report lower satisfaction with the treatment of women and with housing, healthcare, and transport. However, they are slightly more likely (by 2–3 percentage points) to report feeling safe and to view the local economy positively. The largest gap appears for SoL: individuals with internet access are 12 percentage points more likely to report improvement in their standard of living compared to those without access.

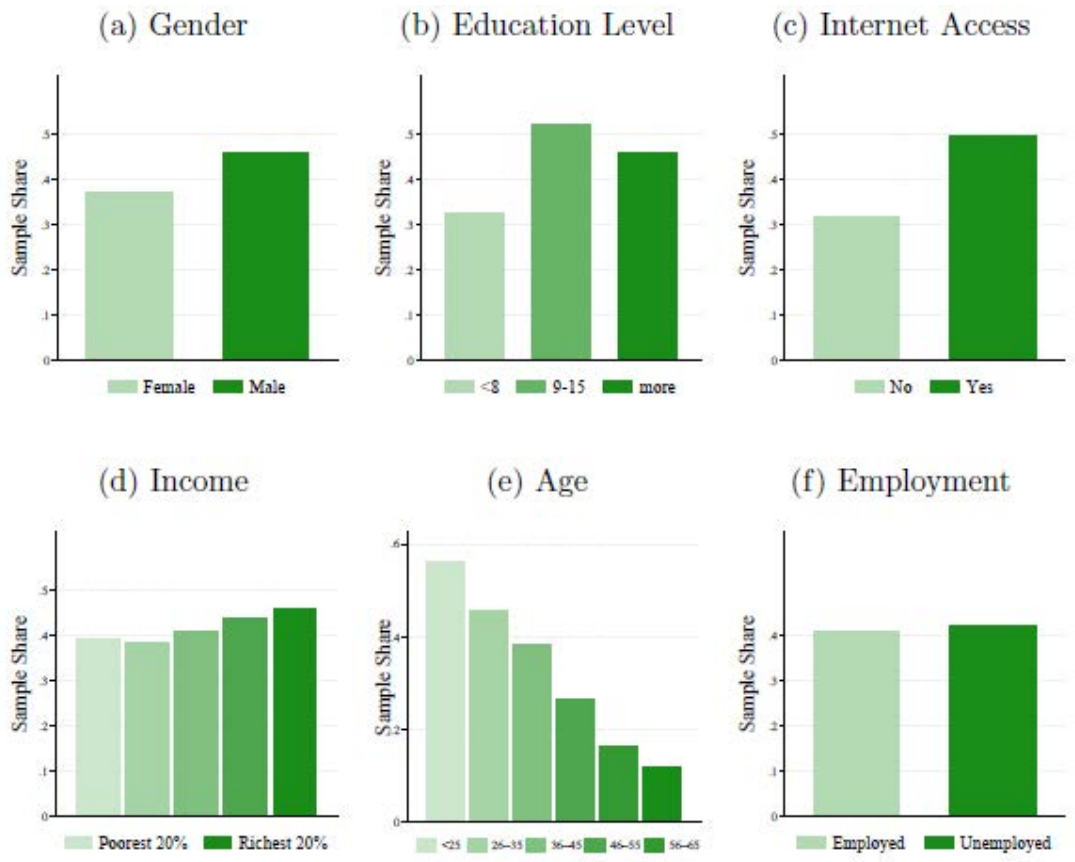
Together, Graphs 2 and 3 reveal that subjective perceptions of macro-level conditions vary systematically with micro- and meso-level characteristics. While the direction and size of the gaps differ across perception variables, the patterns suggest that the relationship between perceptions and individual attributes is complex and likely context-dependent. These descriptive findings support our theoretical premise that perceptions are shaped by both structural conditions and personal characteristics.

B. Migration aspirations

Having examined how perceptions vary with micro-level characteristics, we now turn to our main outcome variable—migration aspirations—and conduct similar descriptive exercises. Previous research has documented systematic relationships between individual characteristics and the propensity to aspire to migrate (Aslany et al., 2021). Using Gallup data from 2010–2015 for a global sample, Migali and Scipioni (2019) find that being younger, male, or highly educated increases the likelihood of aspiring to migrate, as does having networks abroad or a low perception of one's standard of living. Our sample focuses instead on five African countries over the more recent period 2020–2023, allowing us to examine whether these general patterns hold in this specific context.

Overall, 41.5% of our total sample express migration aspirations (Appendix, Table A2). Graph 4 plots the share of respondents with migration aspirations by gender, age, internet access, education level, employment status, and per capita income percentile. In line with Migali and Scipioni (2019), we find that men, younger individuals, and those with higher levels of education are more likely to aspire to migrate. About 45% of all men express migration aspirations, compared to 38% of women. More than half of respondents aged 18–25 aspire to migrate, compared to less than 20% among the oldest age group, indicating a clear negative association

Graph 4: Migration aspirations by micro-level characteristics



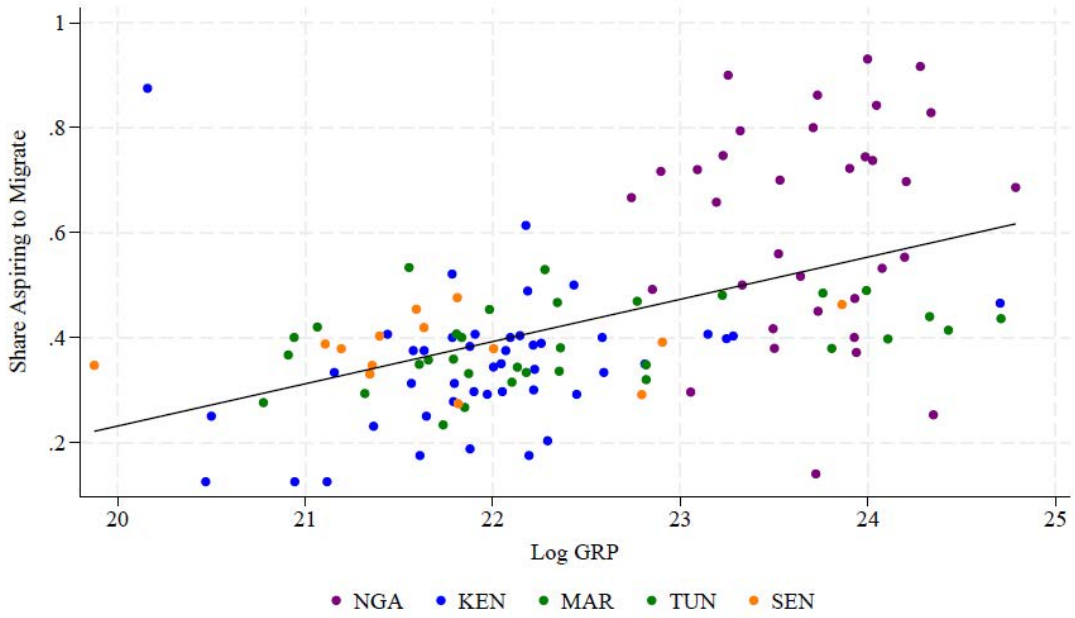
Note: Sample shares of individuals with migration aspirations by gender, age, internet access, per capita income percentile, employment status and education level. Gallup (2024), own calculations.

between age and migration aspirations. The education pattern is somewhat more nuanced: aspirations are highest among those with 9–15 years of schooling, with individuals holding tertiary education degrees being roughly 5 percentage points less likely to aspire to migrate than this group, though still above the lowest-educated group. Employment status shows little association with migration aspirations—aspiration rates are similar for employed and unemployed individuals. In contrast, income is positively correlated with aspirations: those in higher per capita income percentiles are more likely to express a desire to migrate. The largest single-group difference is observed for internet access: individuals with internet access are 20 percentage points more likely to aspire to migrate than those without.

This finding is consistent with the hypothesis that information access, whether through exposure to opportunities abroad or comparisons with other contexts, plays a role in shaping migration aspirations.

A related question is whether individuals in more prosperous regional economies still aspire to migrate. Economic theory offers no clear prediction on this association (Benček and Schneiderheinze, 2024; Clemens, 2020). While individual income is likely correlated with regional prosperity through the availability of higher-paying jobs,[10] the effect of higher gross regional product (GRP) on aspirations remains theoretically ambiguous. Graph 5 plots the share of respondents with migration aspirations in each region against the log of average GRP (2020–2023). The raw

Graph 5: Scatterplot between the regional share aspiring to migrate and gross regional product



Note: Share of individuals that aspire to migrate based on Gallup (2024). GRP aggregated at the admin1 level based on Kummu, Kosonen and Masoumzadeh Sayyar (2025). Own calculations.

[10] As shown in Graph 4, employment itself is not strongly correlated with migration aspirations.

correlation is positive, with Nigerian regions clustering in the high-GRP, high-aspiration quadrant. This positive relationship also holds when the scatterplots are drawn separately for each country, thereby removing cross-country variation. Nonetheless, these patterns are descriptive only and may be driven by unobserved heterogeneity or omitted factors, such as differences in migration networks or ties to destination countries.

Empirical strategy

The stylized facts presented in Section IV revealed systematic variation in perceptions and aspirations across individual and contextual characteristics. In this section, we formalize those relationships using a set of probit regressions and mediation models. Our aim is not to establish causal effects, but to identify robust partial correlations that can inform the theoretical and empirical debate on the role of perceptions in migration decisions.

A. Probit regression

Our main analysis is based on a set of probit regressions. To understand how migration aspirations and subjective perceptions of macro-level factors differ between individuals with different micro-level characteristics, we begin by modelling perceptions as a function of micro-level characteristics:

$$(1) \qquad Perceptions_i^* = Micro_i\alpha + \delta_c + \epsilon_i$$

where $Perceptions_i^*$ is the latent (unobserved) likelihood of individual *i* to have a positive perception, based on the observed binary survey answers $Perceptions_i$. $Micro_i$ is a vector of individual-level (micro) characteristics. Finally, δ_c captures country-fixed effects and ϵ_i is an error term.

To understand whether the micro-level results are robust and to understand whether subjective perceptions correlate with measurable macro-level factors, we extend the model by adding $Macro_r$, which is a matching macro-level variable at the subnational (admin1) level *r*:

$$(2) \qquad Perceptions_i^* = Micro_i\alpha + Macro_r\beta + \delta_c + \epsilon_i$$

For example, when modeling perceptions of the local economy, $Macro_r$ includes the corresponding GRP measure. This specification allows us to examine how much of the variation in perceptions is associated with objectively measured regional conditions, conditional on individual characteristics.

We then turn to migration aspirations. The baseline model mirrors Equation (1), but with migration aspirations as the dependent variable:

$$(3) \qquad MigAsp_i^* = Micro_i\alpha + \delta_c + \epsilon_i$$

where $MigAsp_i^*$ represents the latent (unobserved) likelihood of individual *i* to have migration aspirations, based on migration aspirations $MigAsp_i$ as observed in the GWP. $Micro_i$ is the same vector of individual-level (micro) characteristics as before. Similar to our previous process, we begin to add extensions to the model. First, we add $Perceptions_i$ to the model to study if perceptions are significantly correlated with migration aspirations:

$$(4) \qquad MigAsp_i^* = Micro_i\alpha + Perceptions_i\theta + \delta_c + \epsilon_i$$

Due to collinearity between perceptions (Appendix Table A5), we generally include one perception at a time, but also estimate specifications with all perceptions jointly.

Finally, we extend the model by including macro-level variables $Macro_r$:

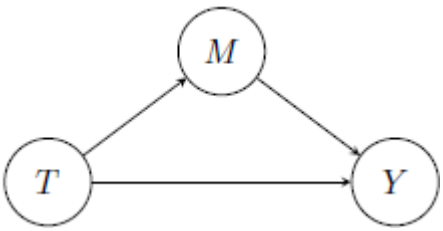
$$(5) \qquad MigAsp_i^* = Micro_i\alpha + Macro_r\beta + \delta_c + \epsilon_i$$

As with perceptions, we typically include one macro variable at a time (Appendix Table A6) to mitigate collinearity. For all probit models, we report marginal effects, as raw probit coefficients are difficult to interpret.

B. Mediation analysis

We expect that part of the association between contextual and individual factors and migration aspirations operates through subjective perceptions. To investigate this mechanism, we implement a mediation analysis. Graph 6 illustrates the conceptual framework. Let *T* denote a macro-level (or micro-level) factor, such as the state of the local economy, measured by GRP, *M* a mediating subjective perception, and *Y* migration aspirations. The macro factor *T* may influence *Y* migration aspirations directly and indirectly through its effect on subjective perceptions *M*, which are also correlated with migration aspirations *Y*.

Graph 6: Simple mediation DAG with *T*, *M*, and *Y*



We decompose the average treatment effect (ATE) of treatment *T* on migration aspirations into a average direct treatment effect (ADTE) and an average indirect treatment effect (AITE)[11] by using a (causal) mediation model that is based on the potential-outcomes framework[12] (Nguyen, Schmid and Stuart, 2021). Instead of using a classical approach with two simultaneous equations, the potential-outcome approach calculates decomposed effects via potential outcomes with and in the absence of treatment. Since we expect partial mediation, our main focus is on the AITE, defined as:

[11] Also referred to in the literature as total effect (TE), natural direct effect (NDE) and natural indirect effect (NIE).
[12] StataCorp (2025) provides an intuitive overview of the model and their software to implement causal mediation.

$$AITE = Y_{[1,M(1)]} - Y_{[1,M(0)]} \quad (6)$$

where $Y_{[1,M\,(1)]}$ is the expected outcome when individuals receive the treatment and experience the mediator under treatment, $Y_{[1,M\,(0)]}$ is the expected outcome when everyone is untreated but counterfactually experiences the value of the mediator associated with being treated (StataCorp, 2025).

In addition, following Dustmann and Okatenko (2014), we apply a Shapley decomposition (Shorrocks et al., 2013) to assess the relative contribution of microlevel factors, perceptions, and macro-level factors to the overall explained variation in migration aspirations. The Shapley approach computes the marginal contribution of each factor to the model's R^2R^2, averaging over all possible orderings of factor inclusion.

Finally, we stress that our research design does not identify causal effects. Limitations in the available data—such as the absence of direct measures of migration networks—mean that important confounders remain unobserved. We therefore interpret our results as robust correlations, while drawing on existing literature to discuss plausible causal pathways in the context of our theoretical framework.

Results

This section presents the empirical results in three steps, mirroring the structure of our empirical strategy (Section V). We begin by examining how micro- and macro-level characteristics are associated with individual perceptions of local conditions. We then assess the role of micro-level factors, perceptions, and macro-level variables in shaping migration aspirations. Finally, we turn to the mediation analysis, decomposing the relationship between contextual factors and migration aspirations into direct and indirect pathways through subjective perceptions. Throughout, we report marginal effects from probit models in graphical form, with full regression tables provided in Appendix A.A2.

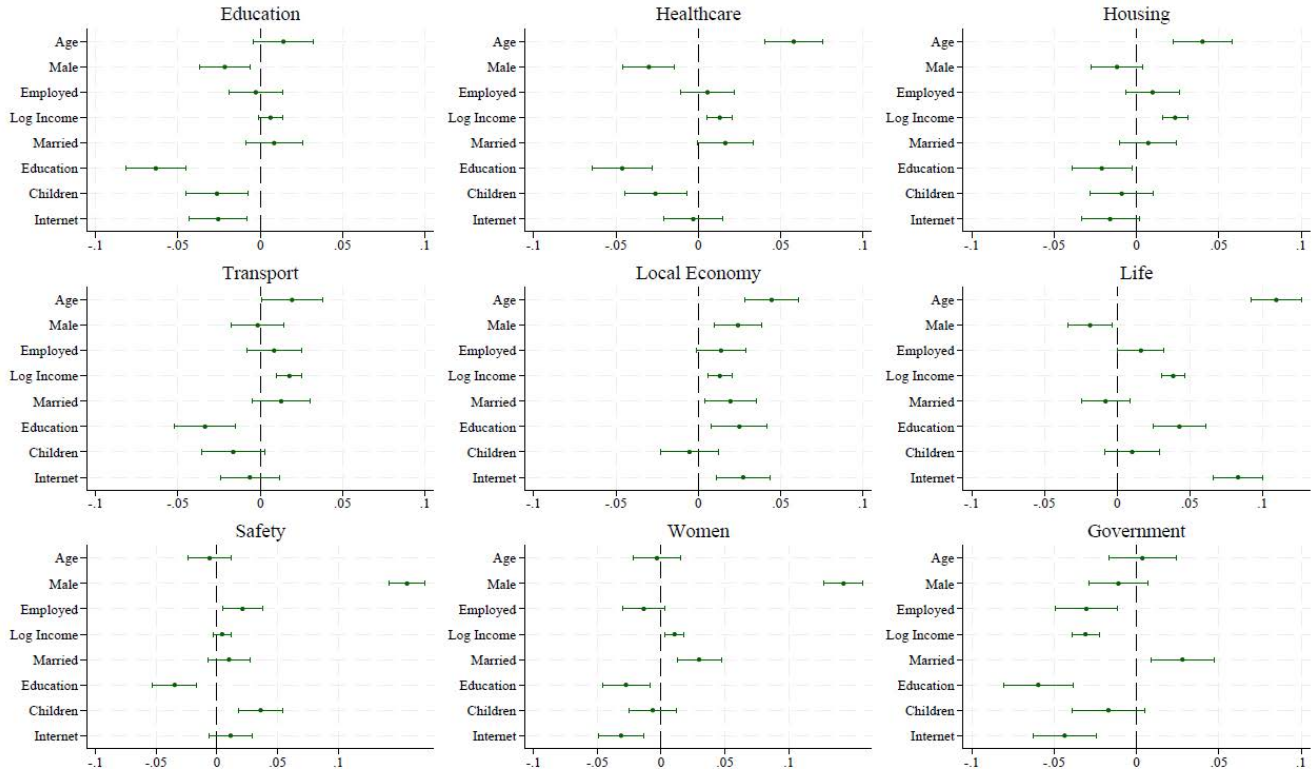
A. Micro-level and macro-level correlates of perceptions

Graph 7 plots the estimated marginal effects of our micro-level variables on nine selected perception dimensions, with each panel showing results for a separate dimension. Overall, we find numerous significant relationships between individual characteristics at the micro-level and perceptions, but the size and the sign of the marginal effects vary substantially across dimensions.

Younger people are more likely to be satisfied with healthcare (~ 6%), housing (~ 4%), and transport (~ 2%). On average, they also tend to perceive the local economy (~ 4%) and the standard of living (~ 11%) more positively than older individuals. For the remaining four perception dimensions, marginal effects are close to zero and insignificant. Gender effects are more nuanced. Men are less satisfied with education, healthcare, and the standard of living, but report more positive views of the local economy (~ 5%), feel safer, and perceive the treatment of women more

DYNAMIG

Graph 7: Marginal effects of micro variables on perceptions



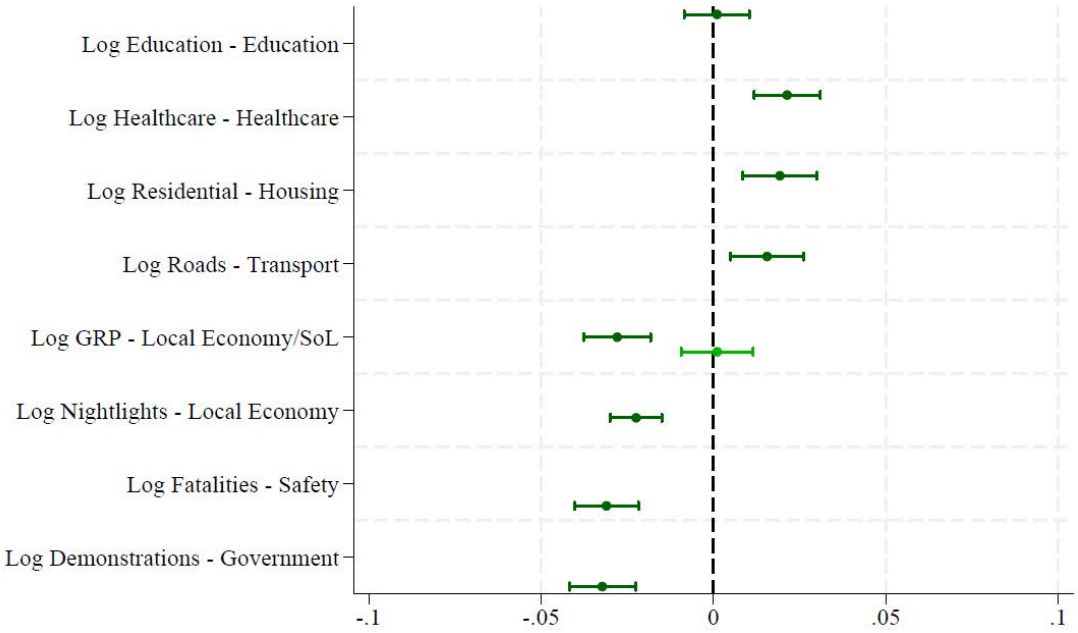
Note: Age coded as dummy that indicates individuals 35 or younger. Children indicates at least one child in the household. Confidence intervals at the 90 % level. All models include religion and country-fixed effects. Source: Gallup (2024), own calculations.

positively than women (both ~ 15%). The latter two effects are among the strongest estimated marginal effects across all perception and micro-level variables. Higher log income is positively correlated with positive perceptions of healthcare, housing, transport, the local economy, standard of living, and treatment of women. The only negative relationship with significance is with government confidence. A 1% increase in income correlates with a reduced probability of having confidence in the government by 5 percentage points. Employment status is generally unrelated to perceptions, except for small positive correlations with safety and standard of living. Education shows a significant negative association with all perception variables except the local economy and standard of living (~ 2%/~ 4%). Married individuals tend to perceive the local economy, treatment of women, and the government more positively. Parents are generally more likely to have negative perceptions, although some effects are insignificant. Only the perceived safety is positively correlated with having children (~ 4%). Internet access is positively correlated with economic perceptions (~ 3%/~ 8%) and negatively associated with satisfaction with education, perceptions of women's treatment, and confidence in the government.

After having established the linkage between individual characteristics and perceptions, we move to the results of the extended model. We add one matching macro-level variable to each model to assess whether perceptions are also shaped by objective regional conditions (Graph 8). Since no objective measure is available for women's treatment, we analyze eight perception dimensions. Micro-level estimates remain close to those in the baseline, so we focus here on the marginal effects of macro-level variables.

Macro-level variables that should benefit individuals, such as infrastructure or the economy, are expected to yield positive links, whereas the relationship should be

Graph 8: Marginal effects of macro variables on perceptions



Note: Confidence intervals at the 90 % level. Macro variables are regressed on their respective perception variables. All models include the full set of micro variables as well as religion and country-fixed effects. Source: Gallup (2024) and macro sources, own calculations.

negative for fatalities and demonstrations. We find that nearly all our perception variables at the regional level show significant correlations with individual perceptions of the local conditions. For infrastructure variables, three of the four show significant positive correlations with their respective perceptions. For example, an increase of healthcare points in a region by 1% is correlated with a likelihood increase of ~ 2% to have positive healthcare perceptions. Transport and Housing effects are similar, and education remains insignificant.

Unexpectedly, a 1% increase of GRP is associated with a ~ −3% lower likelihood of positive perceptions of the local economy, and using nightlights as an alternative economic measure yields a similar result. This negative regional-level effect contrasts with the positive association between individual income and economic perceptions, suggesting a more complex relationship. One possible explanation is that individuals

in high-GRP regions compare themselves to a higher local standard or have elevated expectations, leading to less favorable evaluations despite better objective conditions. We examine this further during the mediation analysis.

For standard of living perceptions, also modeled with log GRP as the macro variable, the coefficient is insignificant and close to zero. As expected, fatalities from violent events are negatively associated with perceived safety, and additional demonstrations in a region are negatively correlated with confidence in the government.

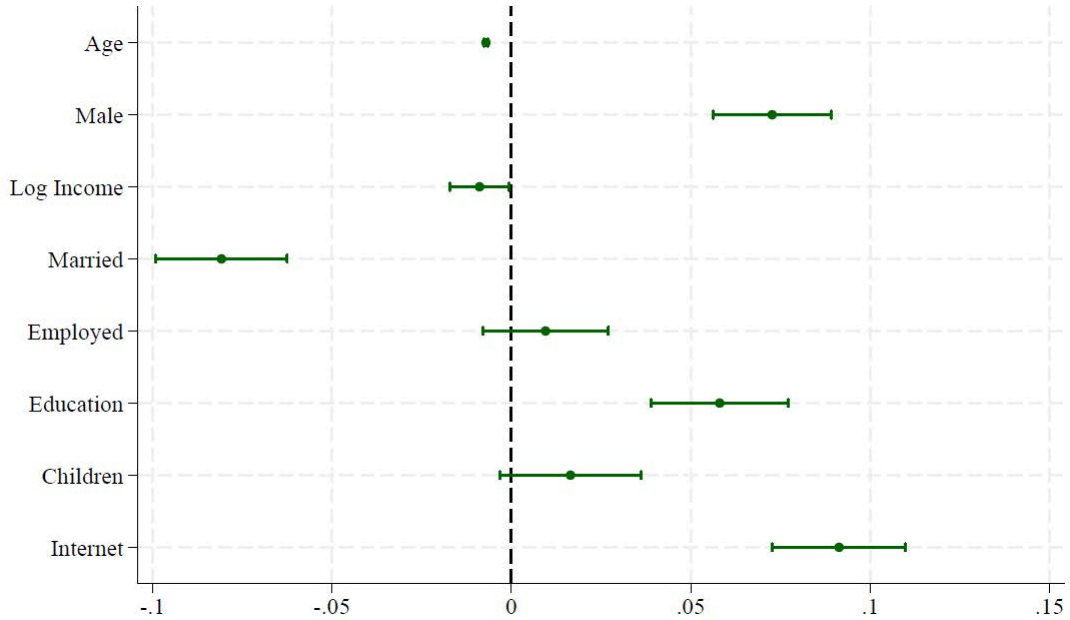
B. Micro-level and macro-level factors, subjective perceptions and migration aspirations

We now turn to the determinants of migration aspirations. We begin with the baseline specification in Equation (3), regressing migration aspirations on the full set of micro-level variables. Graph 9 plots the corresponding marginal effects. Consistent with previous studies such as Migali and Scipioni (2019) and Aslany et al. (2021), we find significant negative associations with age, log income, and marital status, and a positive correlation with being male, highly educated, and having internet access. On average, being ten years older is associated with a 7% lower likelihood of aspiring to migrate.[13] A 1% increase in individual income is associated with a 0.9% lower likelihood of aspiring to migrate, and being married reduces the probability by 8.1 percentage points. Men (7.3%), highly educated individuals (5.8%), and those that have access to the internet (9.1%) are on average more likely to express migration aspirations. Employment status and having one or

[13] Average marginal effects mask possible heterogeneity, with effects potentially strongest for the youngest cohorts and weakest for the oldest, as suggested by Graph 9. Since our primary research interest lies elsewhere, we do not explore this further.

more children are positively correlated with aspirations, but the effects are statistically insignificant.

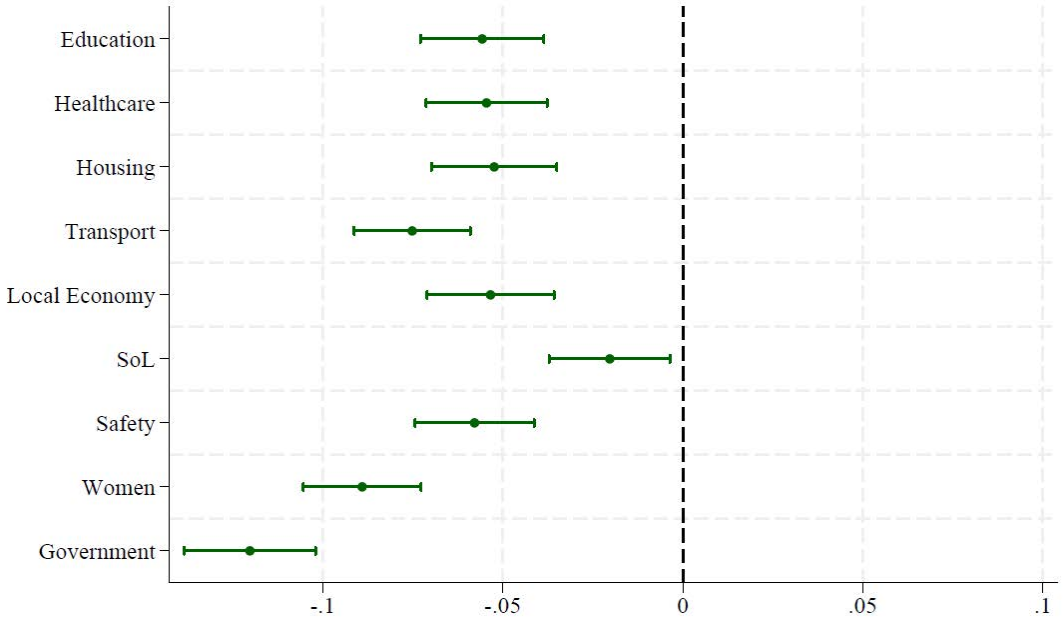
Graph 9: Marginal effects of micro variables on migration aspirations



Note: Confidence intervals at the 90 % level. Children is a dummy that indicates one or more children in the household. All models include religion and country-fixed effects. Source: Gallup (2024), own calculations.

We next extend the specification by adding one perception variable at a time (Equation 4). Graph 10 shows that across all nine specifications, having a positive perception significantly reduces the likelihood of aspiring to migrate. This finding aligns with Helbling and Morgenstern (2023), who use Afrobarometer data to show that positive perceptions lower migration aspirations. The smallest effect is observed for standard of living perceptions (~ −2%). Perceptions of infrastructure quality, such as education or transport, reduce aspirations by ~ 5−7%, similar in magnitude to safety and local economy perceptions. Satisfaction with the treatment of women is associated with an (~ −8%) lower likelihood of aspiring to migrate, while the largest effect is found for confidence in the government. Respondents with positive views of the government are (~ 12%) less likely to aspire to migrate.

Graph 10: Marginal effects of perceptions on migration aspirations

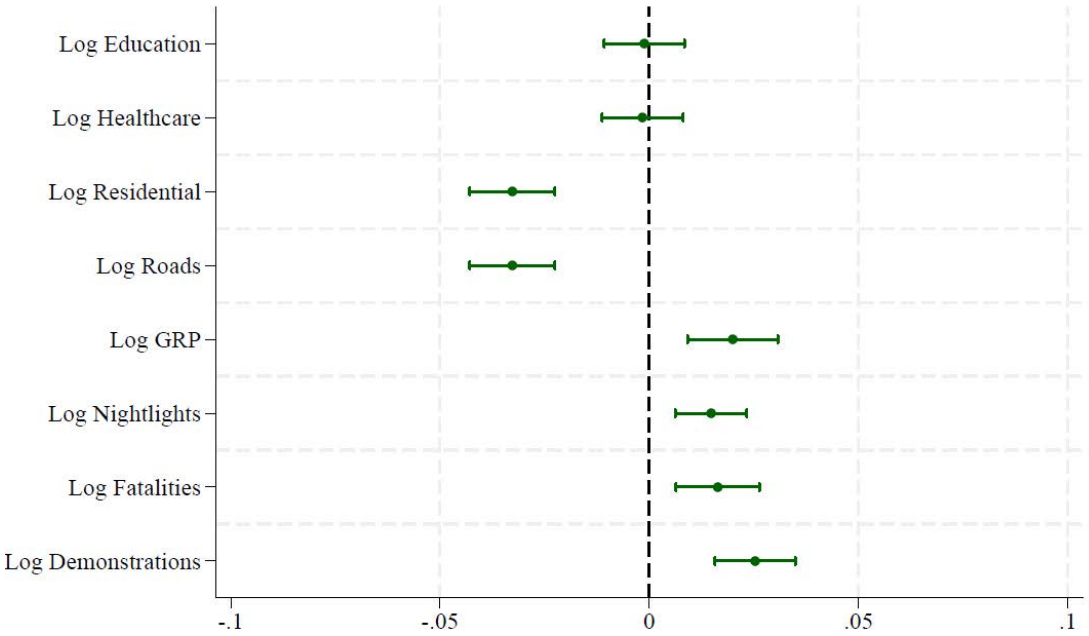


Note: Confidence intervals at the 90 % level. Green estimates are based on a specification that includes only a single perception variable. Grey estimates are based on an extended specification with all perception variables. All models include the full set of micro variables as well as religion and country-fixed effects. Source: Gallup (2024), own calculations.

Finally, we drop the perception variables and include one objective macro-level variable at a time (Equation 6). In general, we expect a negative link with migration aspirations. A healthy macro environment in an origin country should serve as a pull factor that lowers migration aspirations and vice versa for variables that indicate a fragile environment, such as demonstrations or violence fatalities. Graph 11 reveals substantial variation across variables. As expected, demonstrations and fatalities from violent events are correlated with an increased likelihood of aspiring to migrate (~ 2−3% for a 1% increase). Given that several high-fatality regions lack data on aspirations, these estimates likely understate the true relationship (see Graphs 1 and A7). Two infrastructure variables—education and healthcare—are insignificant, whereas residential infrastructure points and paved roads are both negatively associated with aspirations. An additional 1% of residential infrastructure points is

associated with migration aspiration being lowered by 4 percentage points. The effect is of a similar size for an increase in paved roads.

Graph 11: Marginal effects of macro variables on migration aspirations



Note: Confidence intervals at the 90 % level. Green estimates are based on a specification that includes only a single perception variable. Grey estimates are based on an extended specification with all perception variables. All models include the full set of micro variables as well as religion and country-fixed effects. Roads and Nightlights are dropped from the extended specification due to collinearity. Source: Gallup (2024) and macro sources, own calculations.

Contrary to our expectations, GRP is positively correlated with migration aspirations, a finding that is robust to using nightlights as a proxy. One possible explanation lies in the earlier finding of a negative relationship between GRP and perceptions of the local economy. Residents of more prosperous regions may still perceive local economic conditions as unfavorable, increasing their propensity to migrate. The finding also fits the correlation at the subnational level, that we presented in Graph 5.

Appendix Table A11 reports results from models including multiple macro variables simultaneously. Due to strong correlations among GRP and infrastructure measures, we generally prefer single-variable specifications to avoid collinearity issues.

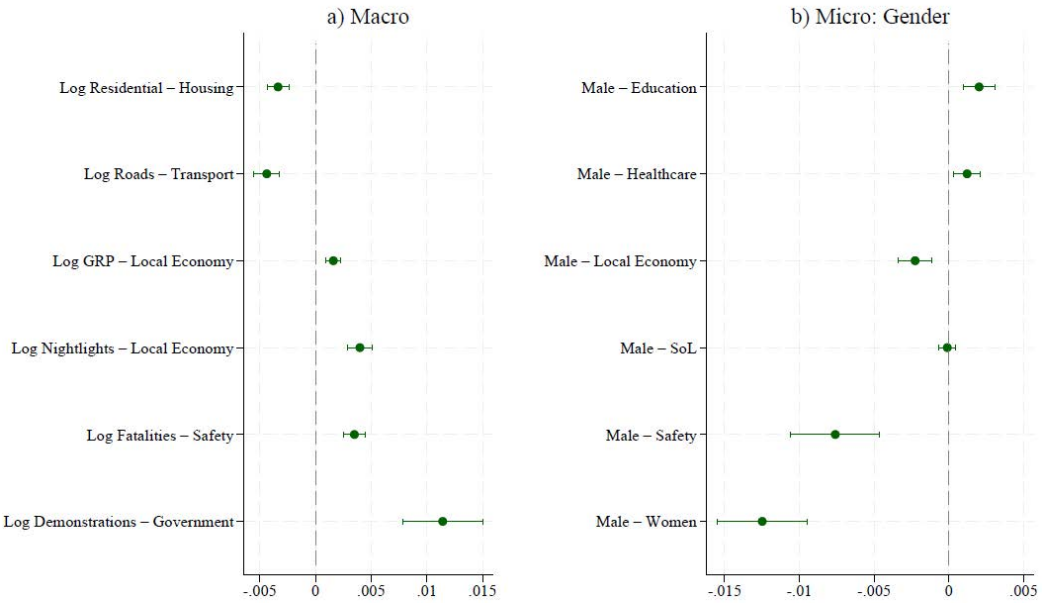
C. Mediation

The preceding analyses show that certain micro- and macro-level variables are correlated with both perceptions and migration aspirations, and that perceptions themselves are significantly associated with aspirations (Graph 12). This pattern raises the possibility of indirect effects, whereby contextual or individual characteristics influence migration aspirations partly through their impact on perceptions.

We test this hypothesis using mediation analysis. We run mediation models only for those relationships where our previous analysis suggested significant links between treatment *T* (micro- or macro-level variables), mediating perception *M* and migration aspirations *Y*. In the case of micro variables, we focus on the effect of gender as treatment *T*. For binary model components, such as gender *T*, perception *M*, and migration aspirations *Y*, we specify probit models. We draw on GWP survey data to include more than 13,000 observations from the years 2020 to 2023. All models include the full set of micro-level controls and country fixed effects.

We discuss briefly how we expect the mediation estimation to unfold. In the case of a micro-variable such as gender being the treatment *T*, we would expect that the gender effect on migration aspirations is partially mediated because of the systematic difference in how men and women perceive their domestic environment. If men perceive their environment differently from women, this could contribute to shaping the difference in their migration aspirations.

Graph 12: Mediation: Average indirect treatment effects of macro variables and gender through perceptions on migration aspirations



Note: Confidence intervals at the 90 % level. All models include the full set of micro variables as well as religion and country-fixed effects. Panel a) depicts the estimated average indirect treatment effect of a one standard deviation change in a log macro variable through a respective perception on migration aspirations. Panel b) depicts the estimated average indirect treatment effect of being male, compared to being female through different perceptions on migration aspirations. We only include variables, where previous models indicated significant relations between the explanatory variable (macro-level variable or gender), the mediator (perception) and the dependent variable (migration aspirations). Source: Gallup (2024) and macro sources, own calculations.

For macro variables, the effect should depend on the previously estimated relations. Additional demonstrations were associated with lower government confidence and higher migration aspirations, and thus, we expect a part of the total effect should be attributed to how demonstrations and confidence in the government are connected (a simultaneous relationship is very likely here). The correlations for roads work vice versa. Additional roads were associated with a better perception and lower migration aspirations. Now we expect that a part of the negative relationship between roads and migration aspirations can be attributed to the increase in the perception of roads and the connected negative association of the road perception with migration aspirations.

MACRO-LEVEL MEDIATION

The left panel of Graph 12 and the first section of Table 1 report the proportion of the total effect (AITE) mediated by the matching perception for macro-level variables. All six macro-level effects examined are significantly mediated in the expected direction. Given the continuous nature of macro variables, the estimated coefficients are related to a deviation of 1 σ in the log macro variable. Using demonstrations as an example, earlier regressions showed that demonstrations are negatively correlated with confidence in the government and migration aspirations. Because both effects are negative, the AITE is positive, with 29.7% of the total effect of the total effect mediated through government confidence. In marginal-effect terms, this translates to ~ 1 percentage point of the ~ 3 percentage point total effect (Graph 11).

For fatalities from violent events, 12.2% of the total effect is mediated by perceived safety. GRP and local economy perceptions yield an 8.4% mediated share, rising to 17.8% when GRP is replaced with nightlights. For residential infrastructure and housing perceptions, as well as roads and transport perceptions, the mediation effect is negative: additional infrastructure both directly lowers migration aspirations and indirectly reinforces this effect via more positive perceptions. The mediated shares are 6.7% for housing and 8.9% for transport. Across variables, macro-level mediation averages around 10%, with the largest share for demonstrations and the smallest for residential infrastructure.

MICRO-LEVEL MEDIATION

The left panel of Graph 12 and the lower part of Table 1 present mediation estimations at the micro-level for gender. Men are more likely to have migration aspirations (ATE), but the effect on perceptions varies. They are less satisfied with education, healthcare, the local economy, and SoL but they feel safer and they have

a more positive view of the treatment of women. Our estimates suggest a positive mediation through education and healthcare of 2.8% and 1.7%. as their negative perceptions correlate with their increased migration aspirations. In the case of perceived safety and the treatment of women, the mediation effect indicates a suppression of the total effect. Men are more likely to migrate but because they (compared to women) feel safer and think better of the situation of women, the total effect is dampened by proportion of 10,7% and 17.6%. Men are more likely to have positive economic perceptions (local economy and standards of living). Thus, our model estimates a suppression of the total gender effect through the better perception of the local economy by 3.2%. Standards of living yield no significant mediation effect.

The results suggest that the direct effects of gender on migration might be over-estimated, as part of the total gender effect captures how men have systematically different perceptions in certain dimensions.

Both the macro- and micro-level analyses indicate that perceptions systematically mediate the link between observed characteristics and migration aspirations. For macro factors, the mediated share is generally positive and substantial for variables such as demonstrations and fatalities. For micro factors such as gender, mediation effects can either amplify or suppress the total effect, depending on whether the perception gap between groups aligns with or counteracts the direct association with aspirations.

While these results are suggestive of underlying mechanisms, we refrain from causal claims due to data limitations and potential unobserved confounding. Instead, the findings highlight the importance of perceptions as a pathway linking both individual characteristics and objective macro conditions to migration aspirations.

Table 1: Mediation proportions

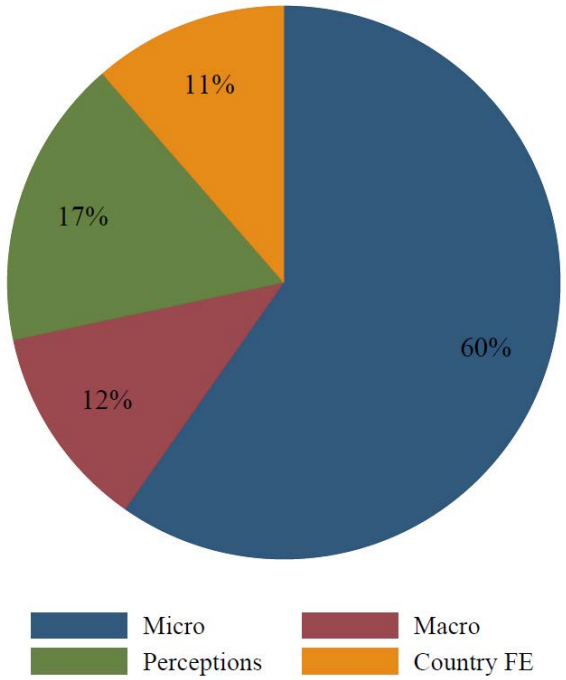
Name	AITE	ADTE	ATE
Macro			
Log Demonstrations - Government	0.297 (0.011)	0.703 (0.027)	1.000 (0.039)
Log Fatalities - Safety	0.122 (0.003)	0.878 (0.025)	1.000 (0.029)
Log GRP - Local Economy	0.084 (0.002)	0.916 (0.018)	1.000 (0.019)
Log Nightlights - Local Economy	0.178 (0.004)	0.822 (0.018)	1.000 (0.022)
Log Residential - Housing	0.067 (-0.003)	0.933 (-0.047)	1.000 (-0.050)
Log Roads - Transport	0.089 (-0.004)	0.911 (-0.045)	1.000 (-0.049)
Micro			
Male - Education	0.028 (0.002)	0.972 (0.070)	1.000 (0.072)
Male - Healthcare	0.017 (0.001)	0.983 (0.069)	1.000 (0.070)
Male - Local Economy	-0.032 (-0.002)	1.032 (0.073)	1.000 (0.070)
Male - Safety	-0.107 (-0.008)	1.107 (0.079)	1.000 (0.071)
Male - SoL	-0.002 (-0.000)	1.002 (0.071)	1.000 (0.070)
Male - Women	-0.176 (-0.012)	1.176 (0.084)	1.000 (0.071)

Notes: AITE (indirect), ADTE (direct) and ATE (total) are given as proportions of ATE. Estimated coefficients are displayed in brackets.

D. Shapley

Having established that micro-level variables, perceptions, and objective macro-level conditions are each associated with migration aspirations, we next assess their relative explanatory importance. Following Dustmann and Okatenko (2014), we employ a Shapley decomposition to apportion the model's explained variation (R^2R^2) across four groups of factors, (i) micro-level characteristics (e.g., age, gender, income), (ii) macro-level indicators (e.g., regional GRP, infrastructure), (iii) perceptions of these macro-level conditions, and (iv) country fixed effects. Whereas mediation quantifies how macro and micro factors transmit through perceptions, the Shapley decomposition shows how much each block contributes to overall explanatory power. We implement the decomposition using a basic OLS model, as this specification retains more variables under collinearity constraints than the probit model. As shown in earlier models with multiple macro variables, collinearity primarily affects country fixed effects, GRP, and infrastructure measures (notably paved roads).

Graph 13: Shapley decomposition



Note: OLS model with all micro, macro and perception variables. Own calculations.

Graph 13 presents the results as a simple pie chart. Micro-level factors account for the largest share of explained variation in migration aspirations, contributing approximately 60%. Perceptions constitute the second-largest share at 17%, followed by macro-level indicators at 12%. Country fixed effects account for the remaining 11%. The estimates underscore the central role of individual-level characteristics in shaping migration aspirations, consistent with our earlier regression findings. Perceptions, however, emerge as more influential than objective macro-level conditions, reinforcing the view that subjective interpretations of the environment are a key intermediate layer between structural factors and migration intentions. Second, these findings complement our mediation results, which identified perceptions as a partial transmission channel between contextual factors and aspirations. Taken together, the two approaches highlight that perceptions are

not only an important mechanism but also a major source of overall explanatory power in migration intention models.

Conclusion

This study examined (i) how subjective perceptions of contextual factors differ between individuals in the same environment, (ii) how these perceptions are associated with migration aspirations, and (iii) to what extent perceptions mediate the relationship between objective macro conditions, micro-level characteristics, and migration intentions. We combined Gallup World Poll microdata for five African countries (2020–2023) with granular subnational macro indicators, extending previous work on perceptions and migration by adding broader perception domains and a finer spatial scale.

First, we find that perceptions vary systematically across micro-level characteristics, such as age, gender, education, and internet access. In several domains—including safety, treatment of women, and local economic conditions—these gaps are substantial. In contrast, objective macro-level indicators (e.g., GRP, infrastructure measures) show weaker and less consistent correlations with perceptions. This aligns with Helbling and Morgenstern (2023), who, using Afrobarometer data, argue that perceptions are relatively independent of objective circumstances. Our results extend their findings by using more granular subnational data, covering a broader range of perceptions (including amenities such as healthcare, housing, and transport), and demonstrating that micro-level characteristics, rather than macro indicators, are the primary drivers of perception heterogeneity.

Second, perceptions are robustly and negatively associated with migration aspirations. Across all nine perception dimensions, individuals with more positive evaluations of local conditions are significantly less likely to express a desire to

migrate, with the strongest associations for government confidence, safety, and the treatment of women. This suggests that perceptions operate as a distinct pull factor, shaping migration intentions over and above measurable structural conditions. Our results also confirm the negative perception–aspiration link found in Migali and Scipioni (2019) and Aslany et al. (2021), but extend these studies by showing that the relationship holds for a broader set of perception dimensions beyond economic and governance measures, and in a more recent, post-2020 African sample.

Third, our mediation analysis reveals that perceptions account for a modest but non-negligible share of the association between contextual factors and migration aspirations. For macro-level variables such as demonstrations, fatalities, and infrastructure, mediated shares range from roughly 7–30%, indicating partial transmission through perceptions. For micro-level factors such as gender, mediation can either amplify or suppress total effects, depending on whether perception gaps align with or counteract direct associations with aspirations. While these results cannot be interpreted causally, they illustrate how perceptions form part of the connective tissue linking objective circumstances and migration intentions. This nuanced role of perceptions partly contrasts with Helbling and Morgenstern (2023), who do not find robust mediation effects for macro conditions; our more granular data reveal some evidence of partial mediation, although the magnitude remains modest.

Fourth, the Shapley decomposition underscores the dominant role of micro-level factors in explaining variation in migration aspirations, accounting for around 60% of explained variance. Perceptions contribute more to explanatory power than objective macro-level indicators (17% vs. 12%), reinforcing the idea that subjective interpretations are not merely secondary reflections of structural realities but central elements in the decision-making process. This finding echoes the emphasis in

Dustmann and Okatenko (2014) on the dominant role of individual-level attributes, but also highlights that perceptions—often omitted from quantitative migration models—are a more powerful predictor than many structural indicators traditionally used in the literature.

Taken together, these findings offer several implications. From a theoretical standpoint, our findings strengthen the case for incorporating subjective evaluations into migration models. While classic push–pull frameworks emphasize structural differentials between origin and destination, our evidence shows that these differentials must be filtered through the lens of individual perception to influence intentions. The modest mediation shares suggest that improving objective origin conditions alone may not translate into lower aspirations unless such improvements are visible, trusted, and personally experienced.

From a policy perspective, interventions aimed at reducing involuntary migration pressures could consider not only the delivery of services and infrastructure but also the transparency, accessibility, and communication of these improvements. Information campaigns, community engagement, and inclusive governance could help narrow perception gaps across population groups, potentially influencing migration intentions.

Still, limitations remain. Our cross-sectional design and limited control over unobserved confounding preclude strong causal claims. Moreover, the absence of direct measures for migration networks in the GWP prevents us from capturing an important determinant of aspirations. Future research could address these constraints by combining individual-level panel data with high-resolution contextual measures, enabling stronger causal inference and more precise mapping of perception–aspiration dynamics.

In sum, our study underscores the importance of perceptions as both outcome and mechanism in the migration process. They are shaped more by who people are than by where they live, and they exert independent, measurable influence on whether individuals wish to leave. Recognizing and addressing this subjective dimension is essential for both migration theory and policy.

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Appendix

A1. Summary Tables—Micro, Macro and Perceptions

This subsection presents full summary tables of our data. First, Table A1 provides definitions and sources of our variables. Second, Table A2 presents summary statistics for our micro variables from the Gallup World Poll. Third, Table A3 contains our macro variables. Fourth, Table A4 summarizes our perception variables. Afterwards, we also include correlation matrices.

Table A1: Definition of variables

Name	Question	Note	Source
Migration			
Migration Aspiration	*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?*	Yes = 1, No = 0	WP1325
Micro			
Age	*Please tell me your age.*		WP1220
Male	*Gender*	Male = 1, Female = 0	WP1219
Income	*Per Capita Annual Income in International Dollars*	Gallup calculated: household income (INCOME_2) divided by members	INCOME_4
Married	*What is your current marital status?*	Married = 1, Others = 0	WP1223
Employed	*Employment Status*	1 = Employed (self, full- and part-time), 2 = Unemployed or out of Workforce	EMP_2010
City	*Urban/Rural*	1 = A (suburb of a) large city	WP14
Education	*Education Level*	1 = high (secondary and tertiary, 9 or more years), 0 = low (elementary, below 8 years)	WP3117
Hunger	*Have there been times in the past 12 months when you did not have enough money to buy food that you or your family needed?*	dropped	WP40
Children	*How many children under 15 years of age are now living in your household?*	dummy = 1 if one or more	WP1230
Internet	*Do you have access to the internet in any way, whether on a mobile phone, a computer, or some other device?*		WP16056
Religion	*Could you tell me what your religion is?*	Transformed into Christian, Muslim and others	WP1233
Perceptions			

Table continued on next page

Table A1: Definition of variables (continued)

Name (cont.)	Question	Note	Source
Education	*In the city or area where you live, are you satisfied or dissatisfied with the educational system or schools?*	1 = Yes, 0 = No	WP93
Healthcare	*In the city or area where you live, are you satisfied or dissatisfied with the availability of quality healthcare?*	1 = Yes, 0 = No	WP97
Housing	*In the city or area where you live, are you satisfied or dissatisfied with the availability of good affordable housing?*	1 = Yes, 0 = No	WP98
Transport	*In the city or area where you live, are you satisfied or dissatisfied with the public transportation systems*	1 = Yes, 0 = No	WP91
Local Economy	*Do you feel safe walking alone at night in the city or area where you live?" 6"Right now, do you think that economic conditions in the city or area where you live, as a whole, are getting better or getting worse?*	1 = better, 0 = worse or same	WP88
SoL	*Right now, do you feel your standard of living is getting better or getting worse?*	1 = better, 0 = worse or same	WP31
Women	*Do you believe women in (Country) are treated with respect and dignity, or not?*	1 = Yes, 0 = No	WP9050
Safety	*Do you feel safe walking alone at night in the city or area where you live?*	1 = Yes, 0 = No	WP113
Government	*Do you have confidence in each of the following, or not? How about the national government*	1 = Yes, 0 = No	WP139
Macro			
Education	Count of education infrastructure points	Aggregated to Admin1	Krantz (2024)
Healthcare	Count of healthcare infrastructure points	Aggregated to Admin1	Krantz (2024)
Residential	Count of residential infrastructure points	Aggregated to Admin1	Krantz (2024)
Roads	Length of paved roads in km	Aggregated to Admin1	Krantz (2024)
GRP	Gross regional product in 2017 international $ PPP	Aggregated from admin2 to admin1 level; averaged 2019–2022	Kummu, Kosonen and Masoumzadeh Sayyar (2025)
Nightlights	Annual average sum of radiance in a region	Averaged: 2022-2023	VIIRS nightlights (Elvidge et al., 2021)
Women (Mean)			
Demonstrations	Count of demonstration events from 2020–2023		Armed Conflict Location and Event Data (ACLED) (Raleigh, Kishi and Linke, 2023)
Fatalities	Estimated total fatalities (*best*) from 2019–2023	GED 24.1	UCDP (Sundberg and Melander, 2013; Davies et al., 2024)
Population	Total population per region in 2020	Sourced from AidData	(CIESIN, 2018*a*)
Population Density	Average number of persons per square kilometer in 2020	Sourced from AidData	(CIESIN, 2018*b*)

Table continued on next page

Table A1: Definition of variables (continued)

Name (cont.)	Question	Note	Source
GRP per capita	GRP divided by population		Kummu, Kosonen and Masoumzadeh Sayyar (2025) and CIESIN (2018*a*)
GRP Growth	Annual change in GRP in percent		Kummu, Kosonen and Masoumzadeh Sayyar (2025)

Note: **GWP questions based on Gallup (2024).**

Table A2: Summary statistics—Micro variables

	Kenya	Morocco	Nigeria	Senegal	Tunisia	Total
N	4,010 (20.0%)	4,037 (20.1%)	4,004 (20.0%)	4,000 (19.9%)	4,003 (20.0%)	20,054 (100.0%)
Age	33.176	37.741	32.518	34.322	40.080	35.571
Male	0.488	0.496	0.501	0.468	0.498	0.490
Income p.c.	1,030.987	2,743.605	955.263	898.970	4,462.629	2,019.290
Married	0.482	0.546	0.476	0.591	0.484	0.516
Education (<9)	0.306	0.637	0.366	0.753	0.445	0.501
Education (9-15)	0.617	0.290	0.617	0.241	0.449	0.443
Education (>15)	0.076	0.073	0.017	0.007	0.106	0.056
Highly Educated	0.692	0.362	0.630	0.246	0.554	0.497
Employed	0.723	0.375	0.693	0.540	0.440	0.554
Children	2.050	1.274	2.188	4.422	0.910	2.165
Children (Dummy)	0.756	0.603	0.706	0.929	0.468	0.692
Islam	0.096	1.000	0.445	0.968	1.000	0.703
Christian	0.904	0.000	0.555	0.032	0.000	0.297
Internet	0.584	0.712	0.438	0.511	0.678	0.585
Migration Aspirations	0.350	0.446	0.523	0.369	0.387	0.415
City	0.181	0.443	0.409	0.491	0.642	0.433
Hunger	0.709	0.527	0.741	0.602	0.297	0.575

Note: Sample from 2020–2023. Source: Gallup (2024).

Table A3: Summary statistics—Macro variables

	Kenya	Morocco	Nigeria	Senegal	Tunisia	Total
N	48 (35.3%)	13 (9.6%)	37 (27.2%)	14 (10.3%)	24 (17.6%)	136 (100.0%)
Education per 1000	0.259	0.353	0.074	0.224	1.039	0.353
Healthcare per 1000	0.215	0.414	0.178	0.190	0.685	0.303
Residential per 1000	1.471	2.869	2.707	24.223	7.378	5.411
Paved Roads (mil km)	8.725	46.544	49.274	6.710	5.035	116.287
GRP in billion 2017$ PPP	236.743	249.491	781.070	63.473	85.204	1,415.981
GRP Growth (%)	2.155	-0.154	-0.603	1.429	-0.956	0.564
Nightlights 22/23 (1000)	247.700	1,172.300	848.758	116.564	641.736	3,027.059
Fatalities	139.200	3.800	3,060.400	0.000	11.200	3,214.600
Women (Mean)	0.533	0.476	0.577	0.659	0.505	0.547
Population 2020 (mil)	52.099	30.540	179.276	16.947	9.525	288.387
Demonstrations	2,890.000	5,061.000	4,128.000	595.000	4,263.000	16,937.000

Note: Different Sources. Education, Healthcare, Residential, Roads are taken from Krantz (2024). GRP and GRP Growth is calculated based on Kummu, Kosonen and Masoumzadeh Sayyar (2025). Nightlights are taken from Elvidge et al. (2021). Population data is taken from CIESIN (2018a). Fatalities are based on UCDP (Sundberg and Melander, 2013; Davies et al., 2024). Demonstrations are taken from ACLED (Raleigh, Kishi and Linke, 2023).

Table A4: Summary statistics—Perception variables

	Kenya	Morocco	Nigeria	Senegal	Tunisia	Total
N	4,010 (20.0%)	4,037 (20.1%)	4,004 (20.0%)	4,000 (19.9%)	4,003 (20.0%)	20,054 (100.0%)
Education	0.632	0.432	0.513	0.666	0.263	0.506
Healthcare	0.517	0.301	0.496	0.483	0.294	0.419
Housing	0.501	0.439	0.567	0.550	0.207	0.456
Transport	0.503	0.571	0.510	0.505	0.364	0.491
Local Economy	0.361	0.301	0.300	0.473	0.170	0.321
Safety	0.513	0.678	0.532	0.558	0.606	0.577
Women	0.528	0.494	0.605	0.631	0.522	0.557
Standard of Living	0.445	0.442	0.440	0.641	0.329	0.459
Government	0.530	.	0.306	0.535	0.377	0.438

Note: Sample from 2020–2023. Source: Gallup (2024).

Table A5: Correlation matrix perceptions

	Education	Healthcare	Housing	Transport	Local Economy	Safety	Women	SoL	Government
Education	1.000								
Healthcare	0.413***	1.000							
Housing	0.315***	0.361***	1.000						
Transport	0.330***	0.302***	0.266***	1.000					
Local Economy	0.219***	0.220***	0.222***	0.191***	1.000				
Safety	0.120***	0.121***	0.128***	0.134***	0.108***	1.000			
Women	0.211***	0.188***	0.157***	0.174***	0.149***	0.209***	1.000		
SoL	0.147***	0.147***	0.182***	0.115***	0.352***	0.053***	0.086***	1.000	
Government	0.237***	0.217***	0.139***	0.183***	0.180***	0.131***	0.214***	0.116***	1.000

Note: Sample from 2020–2023. Source: Gallup (2024).

Table A6: Correlation Matrix Macro Variables

	Education	Healthcare	Residential	Paved Roads	GRP $ PPP	GRP Growth	Nightlights	Fatalities	Women	Population	Demonstrations
Education/1000	1.000										
Healthcare/1000	0.963***	1.000									
Residential/1000	0.294***	0.318***	1.000								
Paved Roads (mil km)	-0.073	0.013	-0.042	1.000							
GRP in billion 2017PPP	-0.125	-0.033	-0.109	0.634***	1.000						
GRP Growth (Nightlights 22/23 (1000)	0.130	0.164	-0.038	0.702***	0.596***	-0.285***	1.000				
totaldeath	-0.053	-0.015	-0.010	0.080	0.107	-0.093	-0.049	1.000			
Women (Mean)	-0.042	-0.035	0.153	0.023	0.003	0.022	-0.163	0.056	1.000		
Population 2020 (mil)	-0.230**	-0.110	-0.107	0.533***	0.842***	-0.383***	0.299***	0.223*	0.140	1.000	
Demonstrations	0.356***	0.381***	-0.000	0.659***	0.561***	-0.289***	0.806***	-0.062	-0.165	0.219*	1.000

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Different Sources. Education, Healthcare, Residential, Roads are taken from Krantz (2024). GRP and GRP Growth is calculated based on Kummu, Kosonen and Masoumzadeh Sayyar (2025). Nightlights are taken from Elvidge et al. (2021). Population data is taken from CIESIN (2018a). Fatalities are based on UCDP (Sundberg and Melander, 2013; Davies et al., 2024). Demonstrations are taken from ACLED (Raleigh, Kishi and Linke, 2023).

Table A7: Correlation Matrix Micro Variables

	Age	Male	Income p.c.	Married	Education (<9)	Education (9-15)	Education (>15)	Highly Educated	Employed	Children	Children (Dummy)	Islam	Christian	Internet	Migration Aspirations	City
Age	1.000															
Male	0.025***	1.000														
Income p.c.	0.015*	0.040***	1.000													
Married	0.392***	-0.050***	-0.029***	1.000												
Education (<9)	0.303***	-0.094***	-0.061***	0.187***	1.000											
Education (9-15)	-0.286***	0.066***	-0.020**	-0.182***	-0.815***	1.000										
Education (>15)	-0.009	0.042***	0.132***	0.002	-0.246***	-0.361***	1.000									
Highly Educated	-0.303***	0.094***	0.061***	-0.187***	-1.000	0.815***	0.246***	1.000								
Employed	-0.044***	0.236***	0.015*	0.047***	-0.131***	0.073***	0.088***	0.130***	1.000							
Children	-0.034***	-0.038***	-0.102***	0.186***	0.145***	-0.071***	-0.115***	-0.146***	0.025***	1.000						
Children (Dummy)	-0.086***	-0.103***	-0.118***	0.272***	0.083***	-0.025***	-0.092***	-0.083***	0.039***	0.597***	1.000					
Islam	0.157***	0.011	0.058***	0.099***	0.261***	-0.263***	0.020**	-0.260***	-0.227***	0.090***	0.019**	1.000				
Christian	-0.157***	-0.011	-0.058***	-0.099***	-0.261***	0.263***	-0.020**	0.260***	0.227***	-0.090***	-0.019**	-1.000	1.000			
Internet	-0.227***	0.097***	0.083***	-0.130***	-0.341***	0.208***	0.202***	0.341***	0.089***	-0.133***	-0.081***	-0.006	0.006	1.000		
Migration Aspirations	-0.292***	0.092***	-0.013	-0.210***	-0.197***	0.181***	0.019*	0.196***	0.045***	-0.058***	-0.028***	-0.088***	0.088***	0.168***	1.000	
City	0.068***	0.002	0.089***	-0.017*	-0.107***	0.045***	0.097***	0.105***	-0.019**	-0.126***	-0.102***	0.192***	-0.192***	0.165***	0.031***	1.000

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Sample from 2020–2023. Source: Gallup (2024).

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A2. Regression Tables

Table A8: Micro—Perceptions

	Education	Healthcare	Housing	Transport	Local Economy	Life	Safety	Woman	Government
Age	0.014	0.058***	0.040***	0.019*	0.044***	0.109***	-0.006	-0.003	0.004
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male	-0.022**	-0.030***	-0.012	-0.002	0.024***	-0.019**	0.157***	0.143***	-0.011
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Employed	-0.003	0.006	0.010	0.008	0.014	0.016*	0.021**	-0.014	-0.030***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	0.006	0.013***	0.023***	0.018***	0.013***	0.039***	0.004	0.011**	-0.031***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Married	0.008	0.016	0.007	0.013	0.020**	-0.008	0.010	0.030***	0.028**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	-0.063***	-0.046***	-0.021*	-0.034***	0.025**	0.043***	-0.035***	-0.028**	-0.060***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	-0.026**	-0.026**	-0.009	-0.016	-0.005	0.010	0.036***	-0.007	-0.017
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Internet	-0.026**	-0.003	-0.016	-0.006	0.027***	0.083***	0.011	-0.031***	-0.044***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
No. of Obs.	17875	18240	17798	18088	18604	18604	18344	17848	14320
Pseudo R^2	0.069	0.038	0.060	0.022	0.045	0.064	0.036	0.032	0.050
χ^2	1143.352	578.102	895.818	345.746	674.098	977.638	550.178	449.181	595.488
Prob>χ^2/F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include country- and religion-fixed effects.

Table A9: Macro—Perception

	Education	Healthcare	Housing	Transport	Local Economy	Local Economy	Life	Safety	Woman	Government
Age	0.014	0.061***	0.039***	0.019*	0.042***	0.041***	0.110***	-0.005	-0.006	-0.000
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male	-0.021**	-0.028***	-0.011	-0.001	0.023***	0.022**	-0.020**	0.156***	0.136***	-0.014
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	0.006	0.011**	0.023***	0.018***	0.016***	0.016***	0.039***	0.006	0.009**	-0.027***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Married	0.008	0.017*	0.006	0.012	0.019*	0.019*	-0.008	0.009	0.027***	0.026**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Employed	-0.003	0.004	0.009	0.008	0.015	0.016*	0.016*	0.019**	-0.006	-0.029**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	-0.063***	-0.048***	-0.020*	-0.034***	0.024**	0.024**	0.044***	-0.034***	-0.032***	-0.058***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	-0.027**	-0.026**	-0.009	-0.017	-0.008	-0.009	0.010	0.034***	-0.016	-0.021
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Internet	-0.026**	-0.005	-0.016	-0.007	0.030***	0.031***	0.083***	0.015	-0.026**	-0.037***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Education	0.000									
	(0.01)									
Log Healthcare		0.028***								
		(0.01)								
Log Residential			0.019***							
			(0.01)							
Log Roads				0.016**						
				(0.01)						
Log GRP					-0.032***		-0.005			
					(0.01)		(0.01)			
Log Nightlights						-0.026***				
						(0.00)				
Log Fatalities								-0.034***		
								(0.01)		
Women (Mean)									0.969***	
									(0.05)	
Log Demonstrations										-0.036***
										(0.01)
No. of Obs.	17823	18185	17740	18031	18549	18575	18549	18344	17848	14295
Pseudo R^2	0.070	0.039	0.061	0.023	0.047	0.047	0.064	0.039	0.056	0.054
χ^2	1141.936	598.662	900.885	351.530	699.815	696.693	979.177	573.437	795.817	629.423
Prob>χ^2/F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include the same fixed effects as our previous regressions.

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Table A10: Micro and perceptions—Migration

	No Perceptions	Education	Healthcare	Housing	Transport	Local Economy	Life	Safety	Woman	Government	All Perceptions
Age	0.156***	0.156***	0.158***	0.159***	0.156***	0.158***	0.158***	0.156***	0.154***	0.155***	0.153***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male	0.068***	0.067***	0.066***	0.066***	0.066***	0.069***	0.068***	0.081***	0.082***	0.063***	0.079***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	-0.010*	-0.009*	-0.008*	-0.008	-0.009*	-0.009*	-0.009*	-0.009*	-0.009*	-0.009	-0.005
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Married	-0.114***	-0.115***	-0.114***	-0.111***	-0.112***	-0.113***	-0.115***	-0.112***	-0.113***	-0.104***	-0.098***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Employed	0.006	0.001	0.008	0.005	0.008	0.006	0.007	0.006	0.004	-0.003	-0.002
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.069***	0.064***	0.068***	0.069***	0.068***	0.071***	0.070***	0.065***	0.068***	0.079***	0.078***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	0.040***	0.041***	0.040***	0.037***	0.039***	0.040***	0.040***	0.044***	0.040***	0.033**	0.040***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Internet	0.108***	0.103***	0.105***	0.102***	0.107***	0.109***	0.109***	0.108***	0.106***	0.102***	0.096***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education		-0.056***									0.001
		(0.01)									(0.01)
Healthcare			-0.049***								0.016
			(0.01)								(0.01)
Housing				-0.055***							-0.024*
				(0.01)							(0.01)
Transport					-0.075***						-0.056***
					(0.01)						(0.01)
Local Economy						-0.057***					-0.019
						(0.01)					(0.01)
SoL							-0.022**				0.028**
							(0.01)				(0.01)
Safety								-0.068***			-0.043***
								(0.01)			(0.01)
Women									-0.096***		-0.066***
									(0.01)		(0.01)
Government										-0.123***	-0.090***
										(0.01)	(0.01)
No. of Obs.	13890	13370	13685	13282	13585	13890	13890	13741	13422	10733	9849
Pseudo R^2	0.104	0.104	0.105	0.103	0.108	0.107	0.105	0.108	0.111	0.122	0.123
χ^2	1227.604	1145.729	1211.999	1154.432	1232.791	1233.645	1231.018	1260.151	1248.943	1092.730	996.512
Prob>χ^2/F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include country- and religion-fixed effects.

Table A11: Macro—Migration

	Education	Healthcare	Residential	Roads	GRP	Nightlights	Fatalities	Population	Demonstrations	All	Region FE
Age	0.156***	0.157***	0.158***	0.158***	0.158***	0.157***	0.155***	0.157***	0.158***	0.158***	0.166***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male	0.067***	0.067***	0.068***	0.068***	0.069***	0.070***	0.068***	0.071***	0.070***	0.071***	0.074***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	-0.009*	-0.009*	-0.009*	-0.009*	-0.012**	-0.011**	-0.011**	-0.009*	-0.012**	-0.011**	-0.016***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Married	-0.114***	-0.113***	-0.113***	-0.113***	-0.113***	-0.113***	-0.114***	-0.114***	-0.112***	-0.112***	-0.110***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Employed	0.006	0.006	0.007	0.007	0.005	0.005	0.007	0.003	0.005	0.004	0.007
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.070***	0.070***	0.069***	0.069***	0.070***	0.070***	0.069***	0.071***	0.069***	0.070***	0.069***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	0.041***	0.041***	0.042***	0.042***	0.041***	0.041***	0.042***	0.044***	0.042***	0.047***	0.056***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Internet	0.108***	0.108***	0.107***	0.107***	0.106***	0.106***	0.106***	0.106***	0.105***	0.103***	0.087***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Education	-0.003									-0.023*	
	(0.01)									(0.01)	
Log Healthcare		-0.003								0.005	
		(0.01)								(0.01)	
Log Residential			-0.034***							-0.033***	
			(0.01)							(0.01)	
Log Roads				-0.034***						0.000	
				(0.01)						(.)	
Log GRP					0.019***					-0.001	
					(0.01)					(0.01)	
Log Nightlights						0.014***					
						(0.01)					
Log Fatalities							0.017***			0.018***	
							(0.01)			(0.01)	
Women (Mean)								-0.351***		-0.289***	
								(0.06)		(0.06)	
Log Demonstrations									0.023***	0.031***	
									(0.01)	(0.01)	
No. of Obs.	13876	13876	13876	13876	13876	13888	13890	13890	13885	13876	13881
Pseudo R^2	0.105	0.105	0.107	0.107	0.105	0.105	0.105	0.108	0.106	0.112	0.142
χ^2	1227.774	1227.739	1248.848	1248.848	1237.205	1235.368	1223.823	1247.483	1244.222	1285.339	1652.982
Prob>χ^2/F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include the same fixed effects as our previous regressions.

A3. Robustness Checks

Table A12: Robustness: Economic macro variables on local economy perception and migration aspiration

	Local Economy	Local Economy	Local Economy	Local Economy	Migration	Migration	Migration	Migration
Age	0.041***	0.042***	0.041***	0.044***	0.158***	0.161***	0.157***	0.157***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Male	0.026***	0.026***	0.026***	0.027***	0.070***	0.072***	0.071***	0.068***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	0.017***	0.016***	0.017***	0.013***	-0.012**	-0.016***	-0.011**	-0.009*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Married	0.020**	0.020**	0.020**	0.020**	-0.112***	-0.111***	-0.113***	-0.113***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.024**	0.024**	0.023**	0.024**	0.070***	0.069***	0.070***	0.069***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	-0.008	-0.009	-0.008	-0.007	0.042***	0.045***	0.042***	0.041***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Internet	0.032***	0.032***	0.032***	0.028***	0.106***	0.101***	0.106***	0.108***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log GRP	-0.032***				0.019***			
	(0.01)				(0.01)			
log GRP pc		-0.051***				0.095***		
		(0.01)				(0.01)		
Log Nightlights			-0.025***				0.014***	
			(0.00)				(0.01)	
GRP Growth (%)				0.004				0.014***
				(0.00)				(0.01)
No. of Obs.	18549	18549	18575	18549	13876	13876	13888	13876
Pseudo R^2	0.047	0.046	0.047	0.045	0.105	0.108	0.105	0.105
χ^2	700.497	683.017	697.187	675.279	1232.623	1260.954	1231.237	1238.557
Prob>χ^2/F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include the same fixed effects as our previous regressions. Based on Elvidge et al. (2021), Gallup (2024) and (Kummu, Kosonen and Masoumzadeh Sayyar, 2025).

Table A13: Robustness: Women dignity perception mean by region and women dignity perception deviation of means by gender on local economy perception and migration aspiration

	Women	Women	Migration	Migration
Age	-0.006	-0.003	0.157***	0.155***
	(0.01)	(0.01)	(0.01)	(0.01)
Male	0.135***	0.140***	0.072***	0.070***
	(0.01)	(0.01)	(0.01)	(0.01)
Log Income	0.009**	0.011**	-0.009*	-0.009*
	(0.00)	(0.00)	(0.00)	(0.00)
Married	0.027***	0.028***	-0.113***	-0.114***
	(0.01)	(0.01)	(0.01)	(0.01)
Education	-0.031***	-0.027**	0.071***	0.069***
	(0.01)	(0.01)	(0.01)	(0.01)
Children	-0.017	-0.007	0.045***	0.041***
	(0.01)	(0.01)	(0.01)	(0.01)
Internet	-0.027**	-0.033***	0.106***	0.108***
	(0.01)	(0.01)	(0.01)	(0.01)
Women (Mean)	0.971***		-0.352***	
	(0.05)		(0.06)	
Women (Deviation)		0.070		0.067
		(0.05)		(0.05)
No. of Obs.	17848	17847	13890	13890
Pseudo R^2	0.056	0.032	0.108	0.105
χ^2	794.177	446.032	1243.784	1229.440
Prob>χ^2/F	0.000	0.000	0.000	0.000

Note: *p < 0.10, **p < 0.05, ***p < 0.010. Average marginal effects. Robust standard errors in parentheses. All models include the same fixed effects as our previous regressions. Women (Mean) is the mean women dignity perception by subnational region. Women (Deviation) is the difference between the mean women dignity perception by women and men (women-men). A positive deviation in a region means that women perceived their dignity more positive than men. Based on Gallup (2024).

A4. Macro data maps

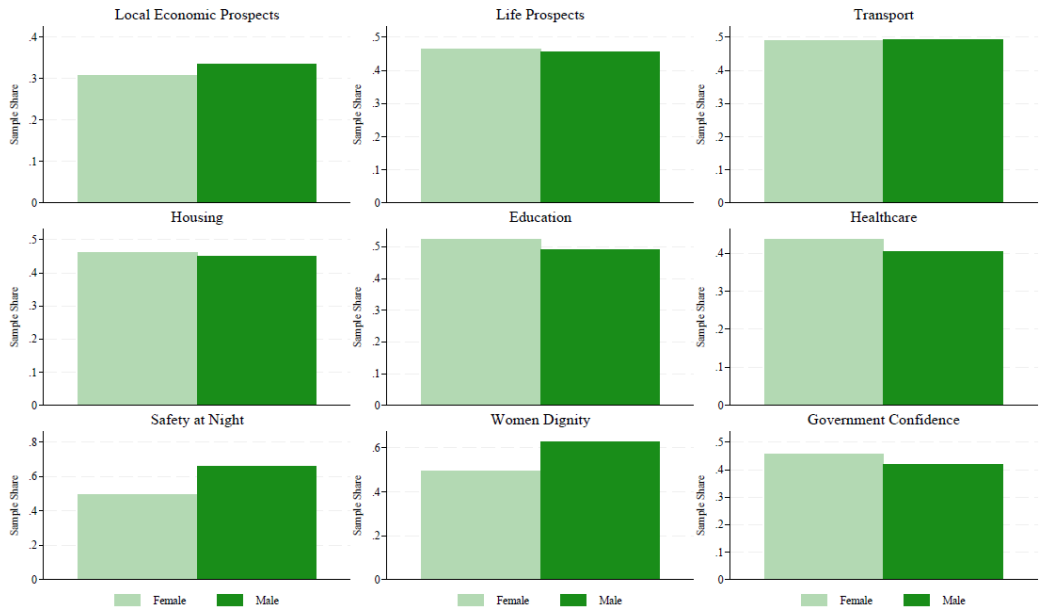
This subsection presents a series of descriptive maps that visualize the spatial patterns of our macro-level variables. The figures provide an overview of regional variation across our sample. Specifically, the maps include: Gross Regional Product (Graph A1), nightlights (Graph A2), demonstrations (Graph A3), fatalities from organized violence (Graph A7), healthcare (Graph A5), education (Graph A4), paved roads (Graph A6).

These visualizations serve to complement the main analysis by offering geographic context and highlighting spatial heterogeneity in the underlying data. As shown in Table A6, simple visual comparison confirms that many of our macro variables are positively correlated, e.g., nightlights, GRP, and infrastructure measures. Macro variables also concentrated around regions containing capitals or other major cities. Furthermore, higher concentrations seem to be correlated with distance to oceans, a pattern that could be explained with stronger economic activity around port cities.

A5. Additional descriptive graphs

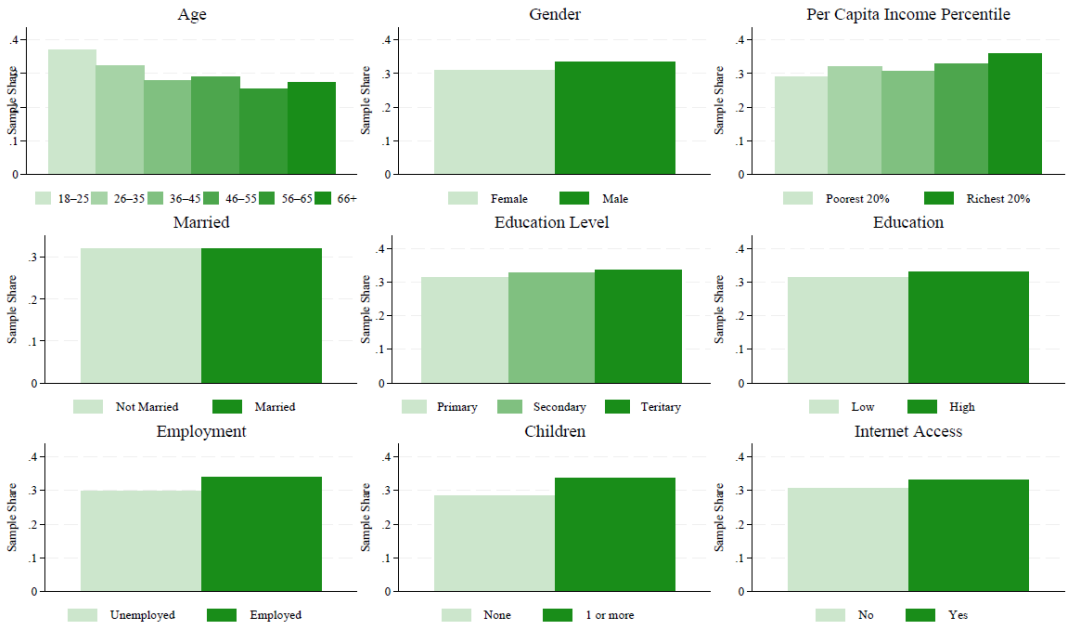
Lastly, we present additional descriptive graphs. These graphs provide additional details, such as per-country statistics and time series.

Graph A8: Perceptions by gender



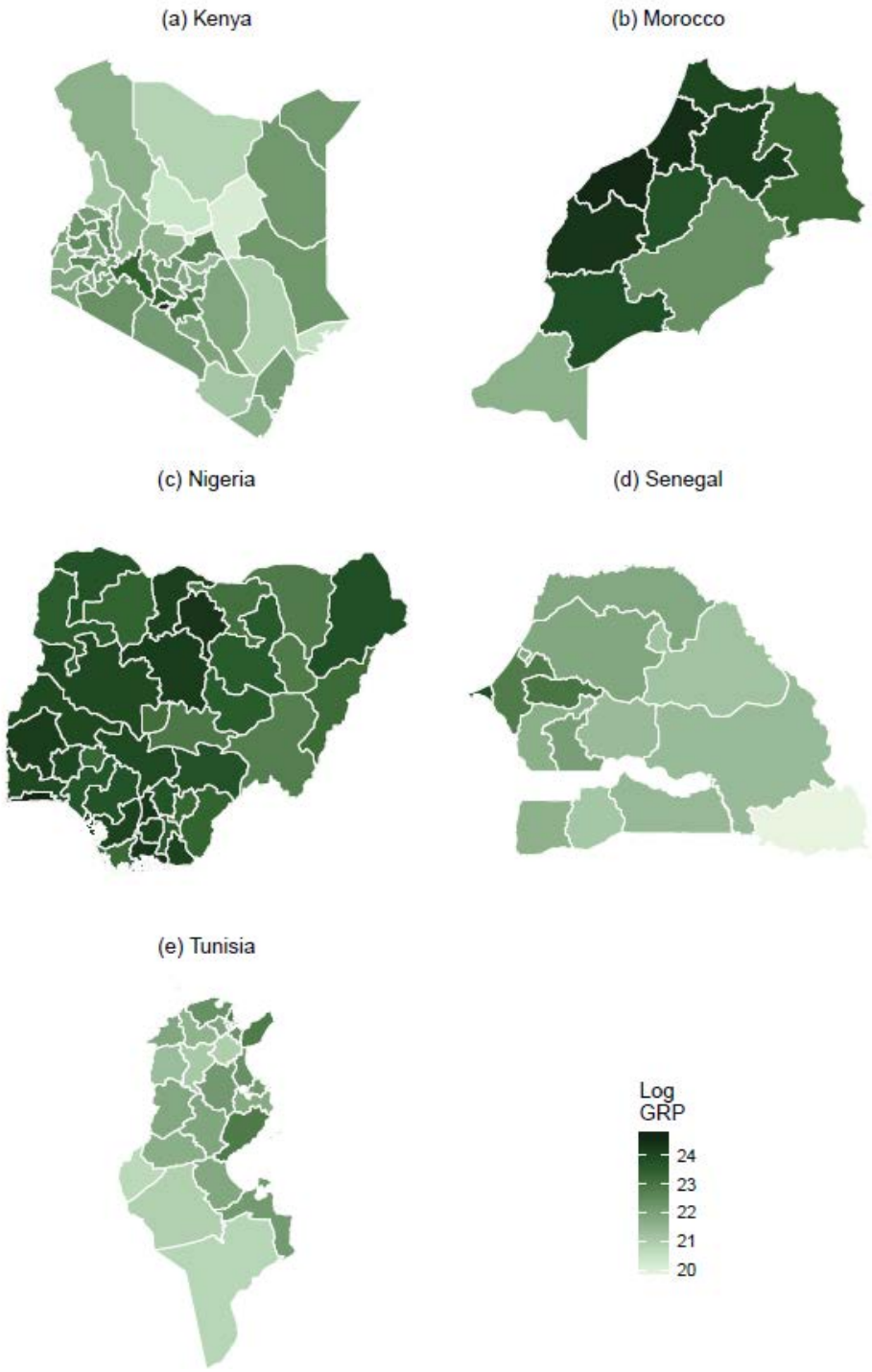
Note: Sample shares of positive perceptions (”Yes”). Similar for prospects (”getting better”) and subjective income (”comfortably” or ”getting by”). Source: Gallup (2024), own calculations.

Graph A9: Local economy perception by micro variables



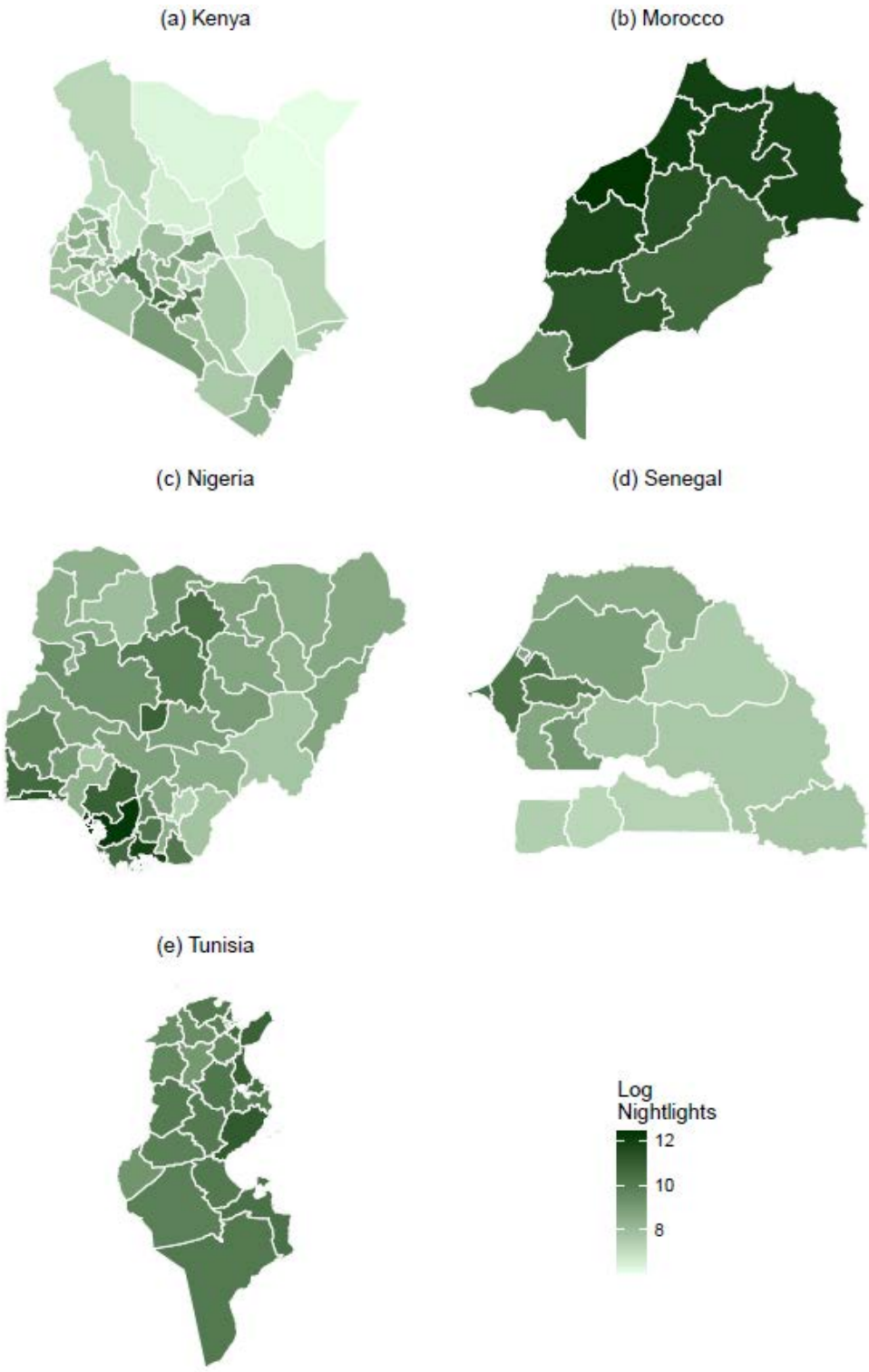
Note: Sample shares of positive perceptions (”Yes”). Similar for prospects (”getting better”) and subjective income (”comfortably” or ”getting by”). Source: Gallup (2024), own calculations.

Graph A1: Gross regional product



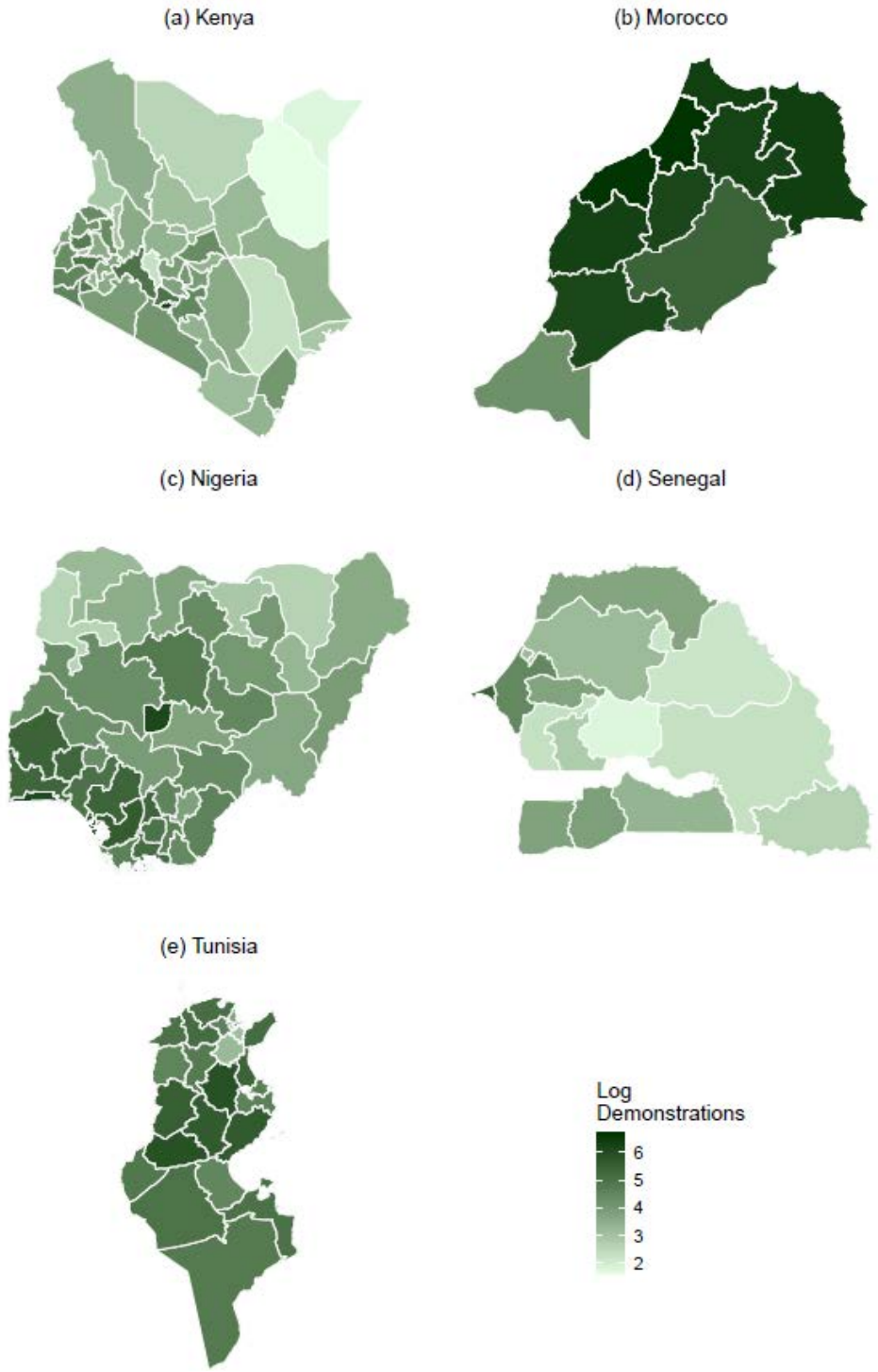
Note: **Logged Gross Regional Product in 2017 international $ PPP, averaged over 2019–2022. Regional level data (admin1) aggregated in four countries based on admin2 data by Kummu, Kosonen and Masoumzadeh Sayyar (2025).**

Graph A2: VIIRS nightlights



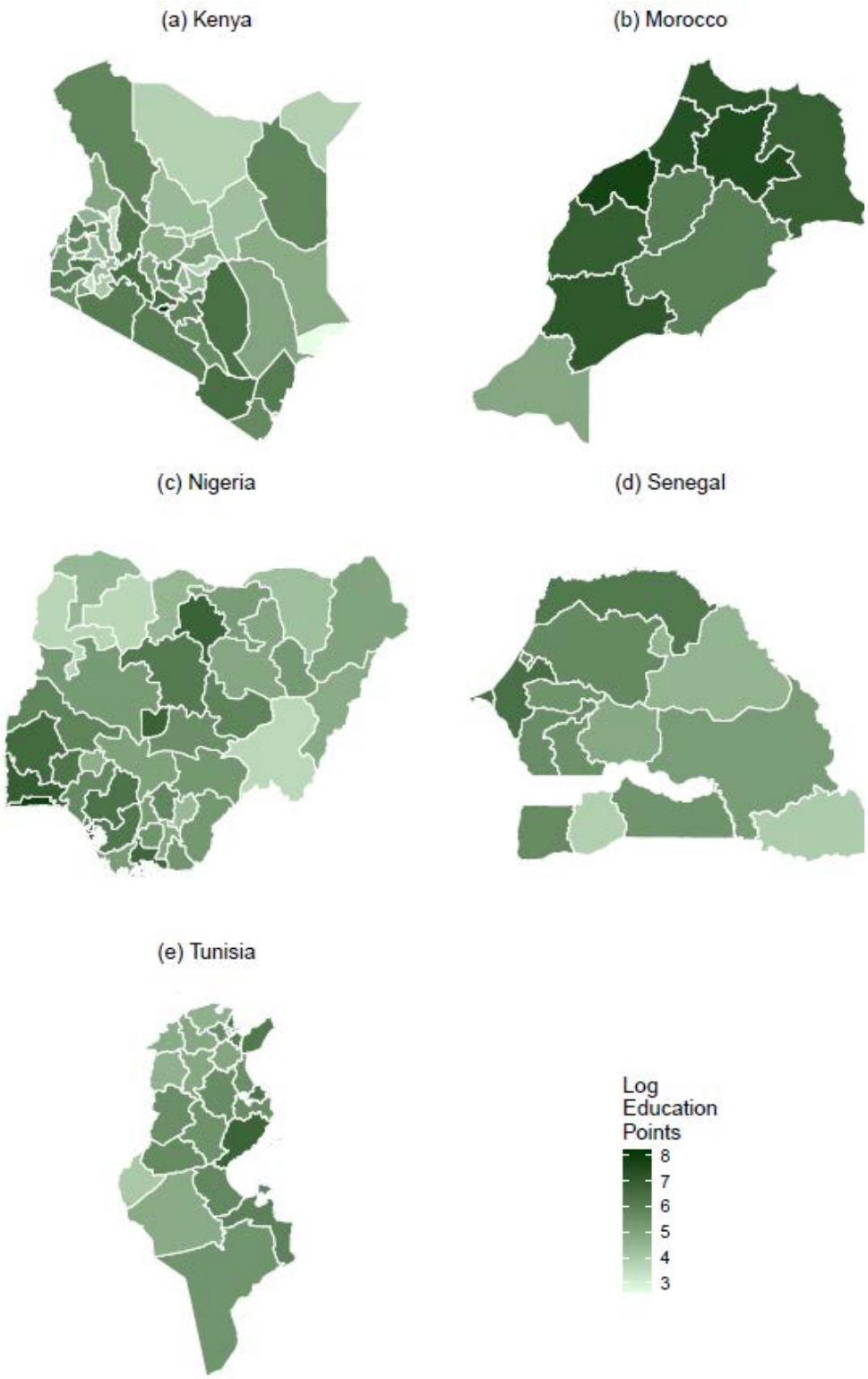
Note: Logged annual average sum of nightlights measured by VIIRS (Elvidge et al., 2021). Average from 2022 and 2023.

Graph A3: Demonstrations: 2020–2023



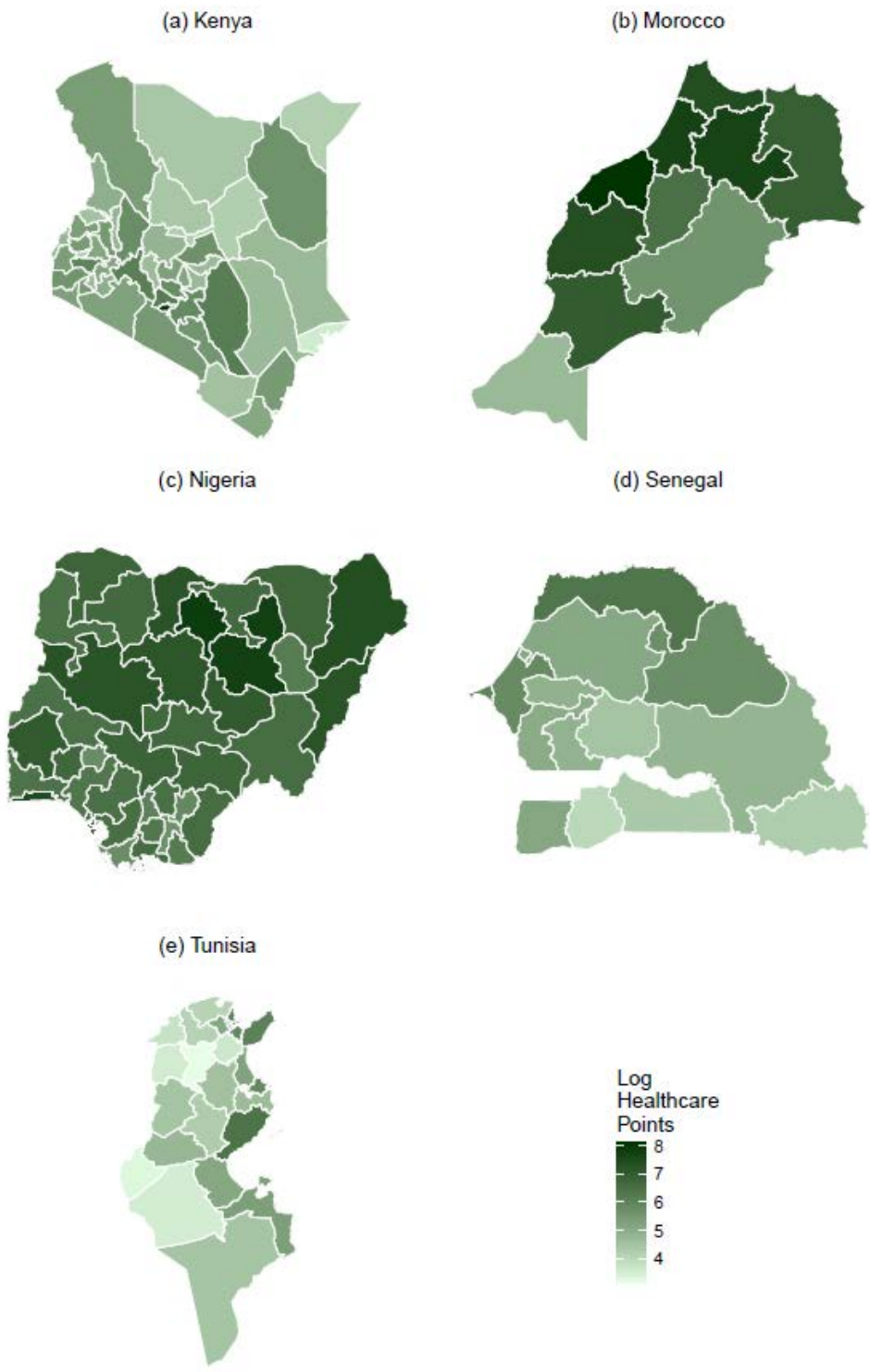
Note: Logged count of demonstration events recorded from in each region based on the Armed Conflict Location and Event Data (ACLED) by (Raleigh, Kishi and Linke, 2023).

Graph A4: Education infrastructure points



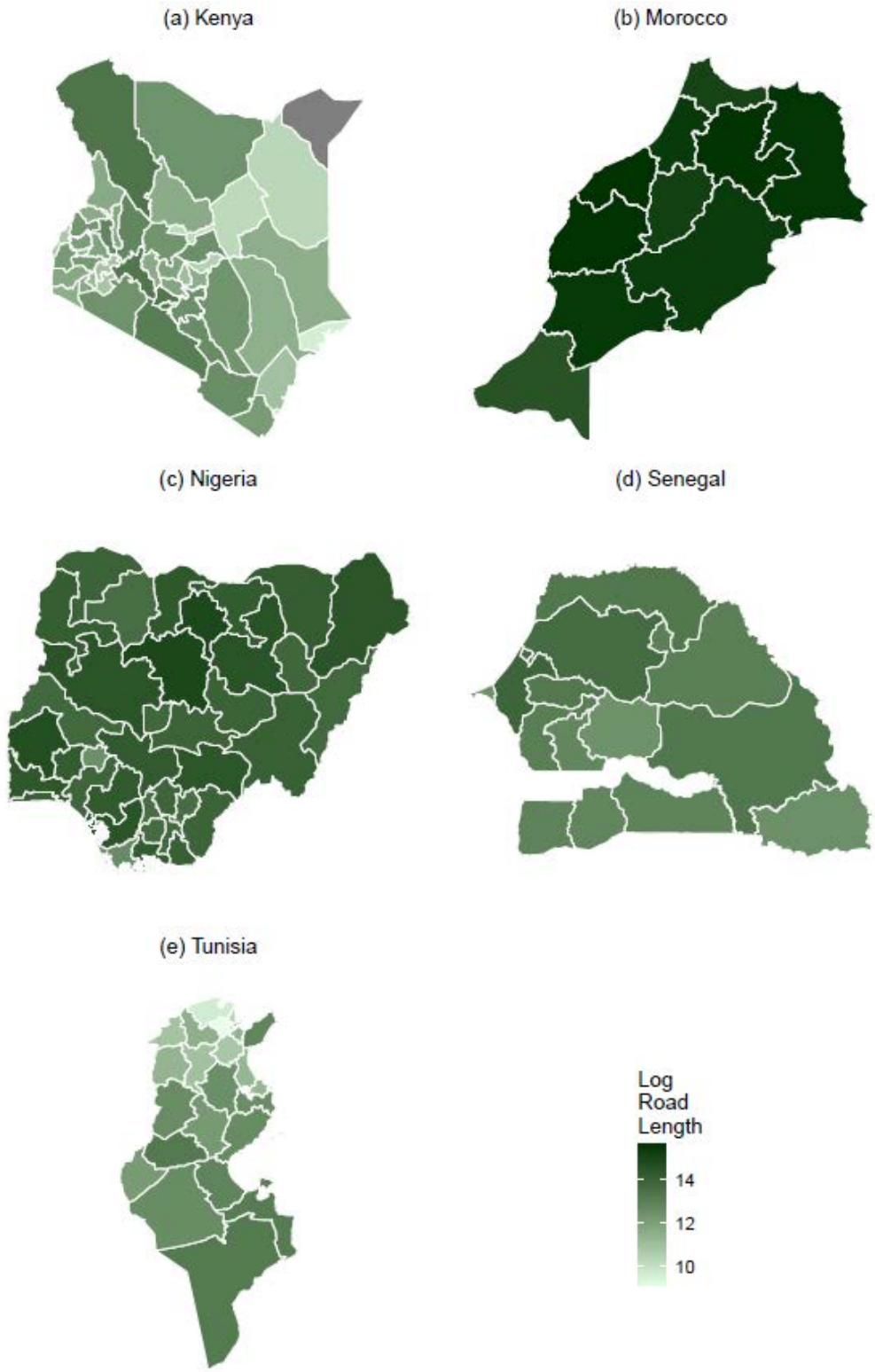
Note: Logged count of education related infrastructure points from the Africa Infrastructure Database by Krantz (2024).

Graph A5: Healthcare infrastructure points



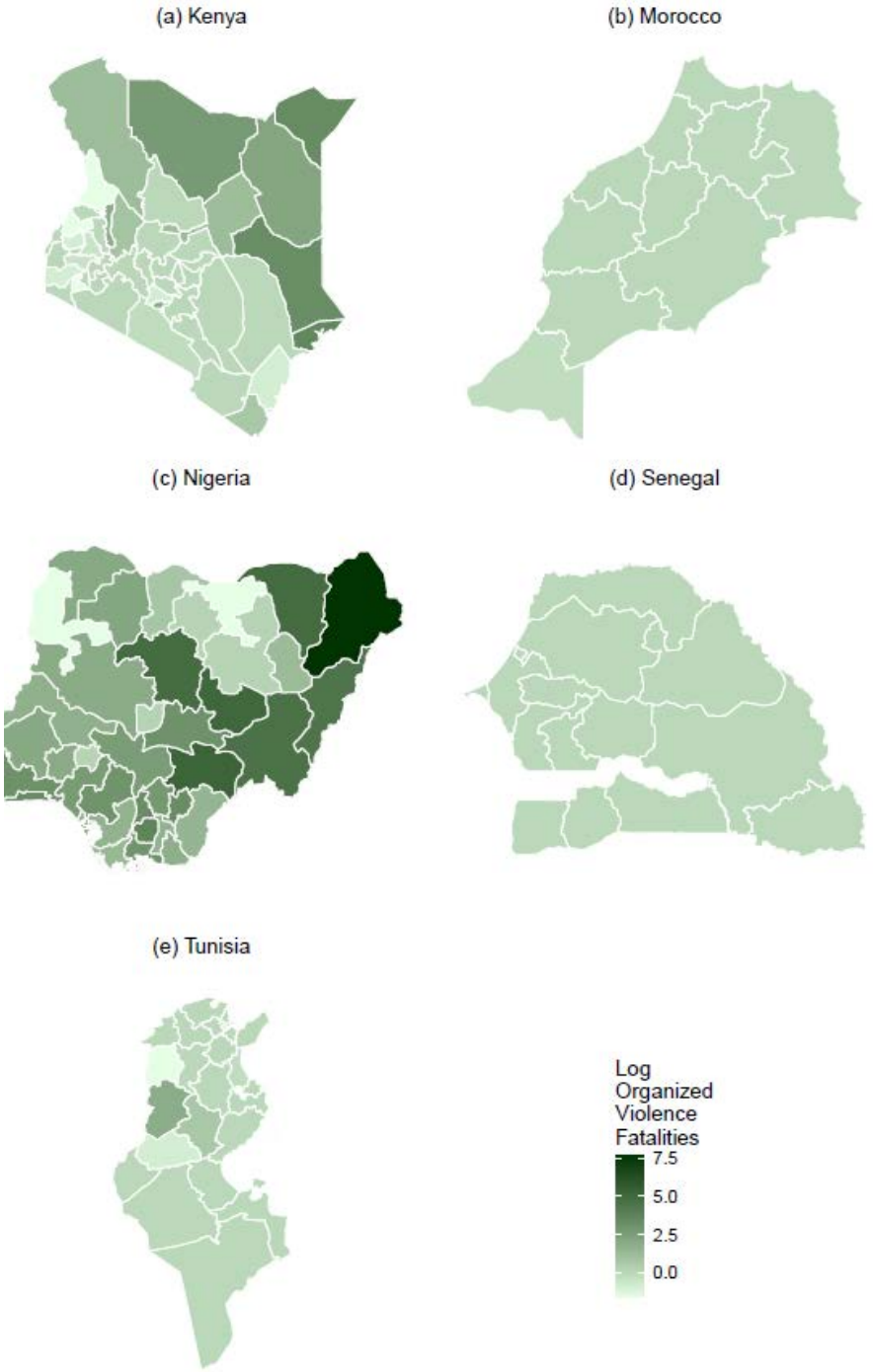
Note: Logged count of health-related infrastructure points from the Africa Infrastructure Database by Krantz (2024).

Graph A6: Paved roads



Note: Logged total length of paved roads in kilometers from the Africa Infrastructure Database by Krantz (2024).

Graph A7: Organized violence fatalities: 2019–2023



Note: Logged count of estimated organized violence fatalities from 2019 to 2023 from the Geo-referenced Event Dataset (GED) version 24.1 by the Uppsala Conflict Data Program (UCDP) (Sundberg & Melander, 2013; Davies et al., 2024). The high number of zero fatalities is likely driven by (UCDP) inclusion threshold of 25 annual battle related deaths per event.

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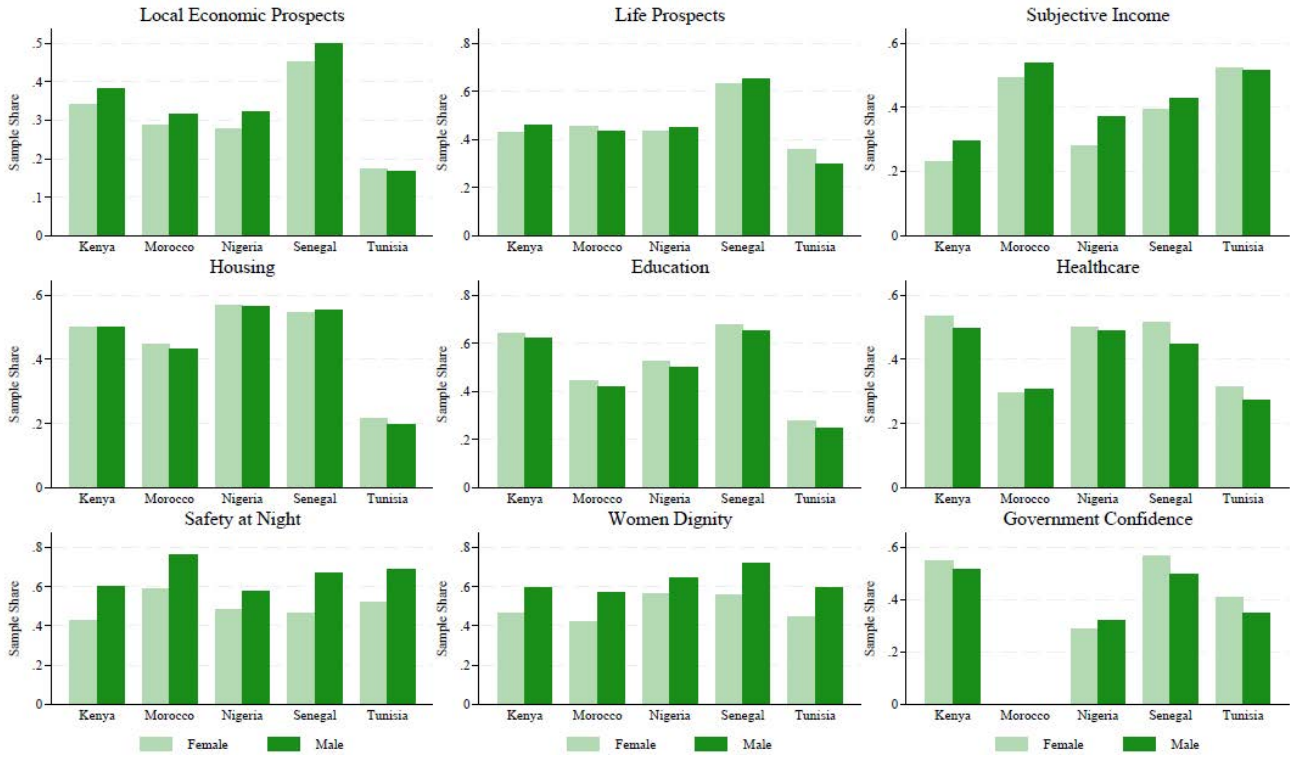
Graph A10: Perceptions by gender



Note: Sample Shares of positive perceptions (“Yes”). Similar for prospects (“getting better”) and subjective income (“comfortably” or “getting by”).
Source: Gallup (2024), own calculations.

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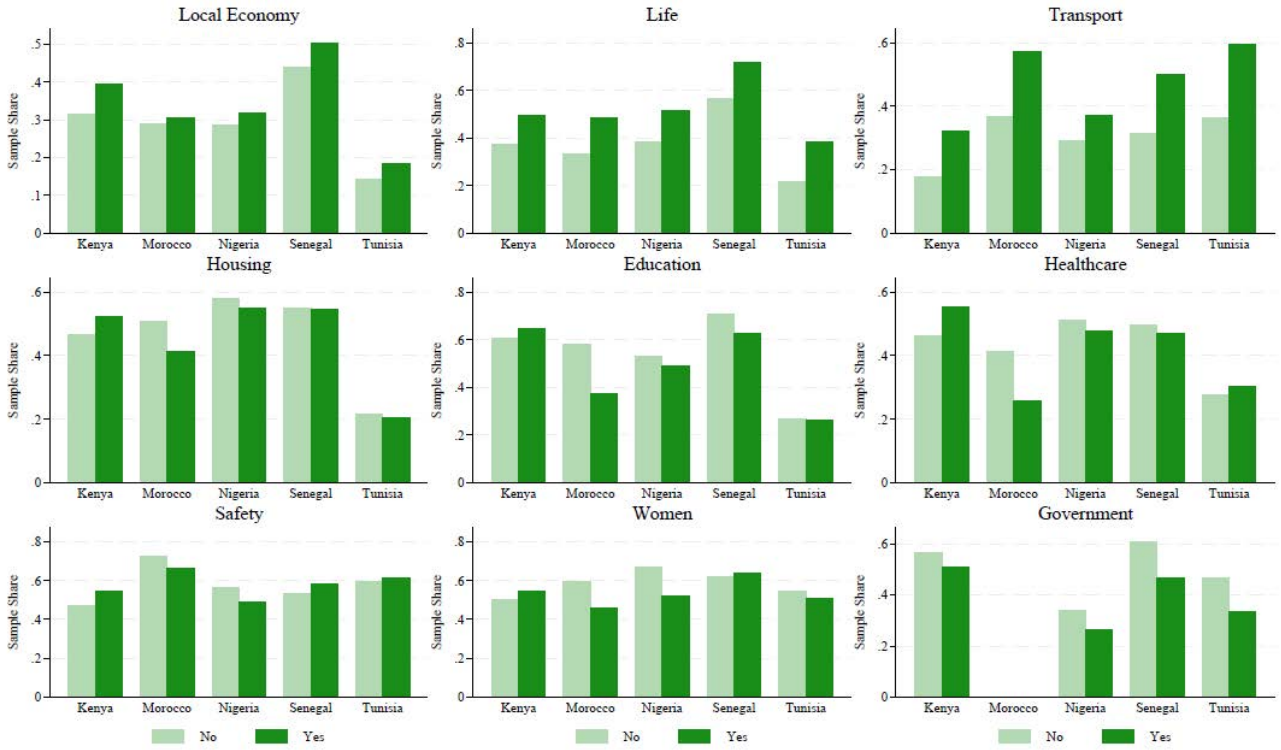
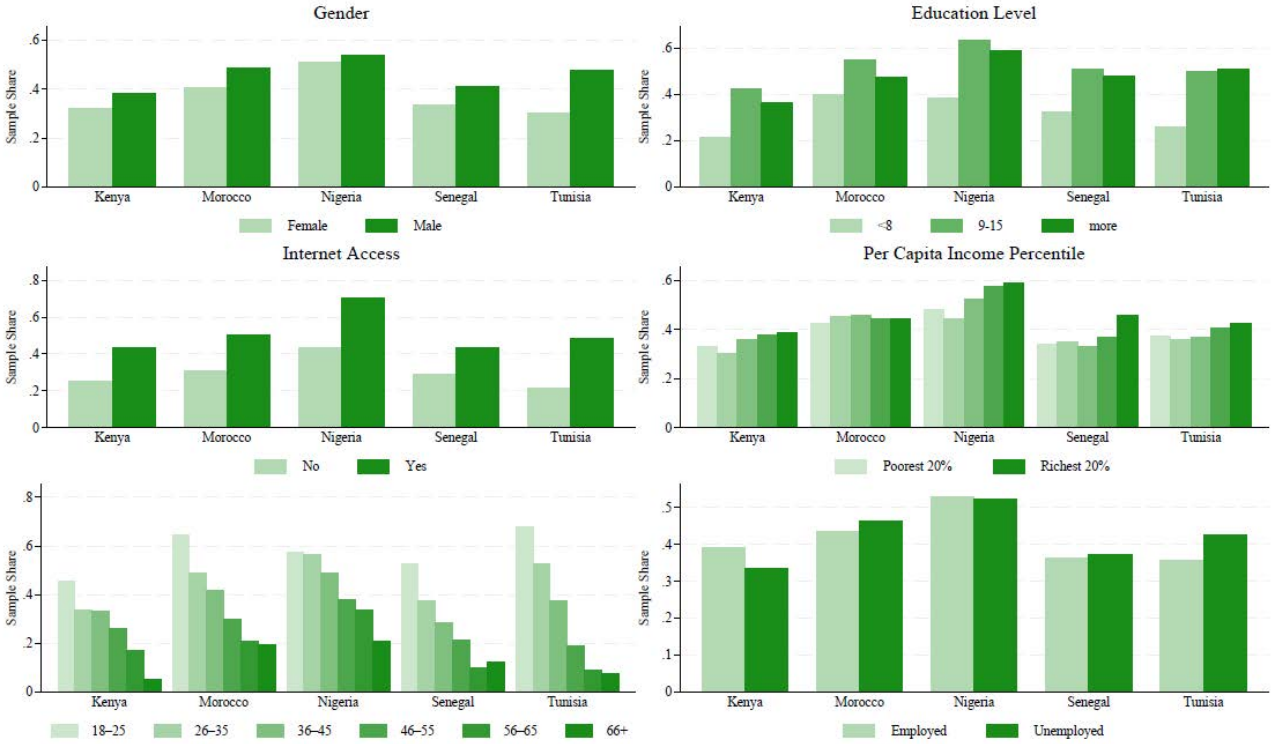
Graph A11: Perceptions by internet access



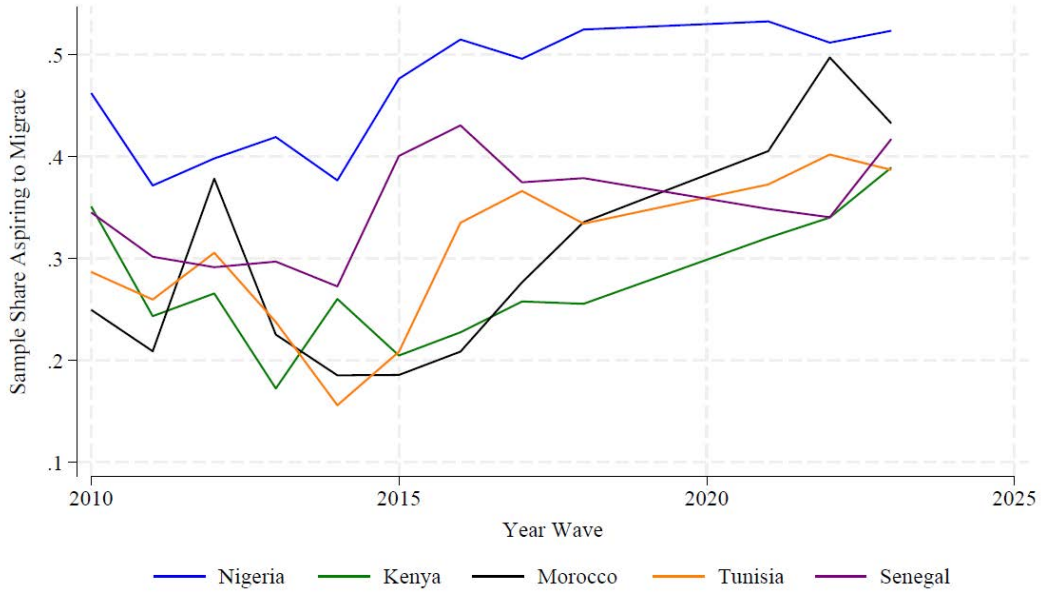
Note: Sample Shares of positive perceptions (“Yes”). Similar for prospects (“getting better”) and subjective income (“comfortably” or “getting by”).
Source: Gallup (2024), own calculations.

Graph A12: Migration aspirations by micro-level characteristics by country



Note: Sample shares of individuals with migration aspirations by gender, age, internet access, per capita income percentile, employment status and education level. Grouped by country. Gallup (2024), own calculations.

Graph A13: Migration aspirations by country: 2010–2023



Note: Share of individuals that aspire to migrate by country based on Gallup (2024). The corresponding question "WP1325" has not been asked in 2019 and 2020.

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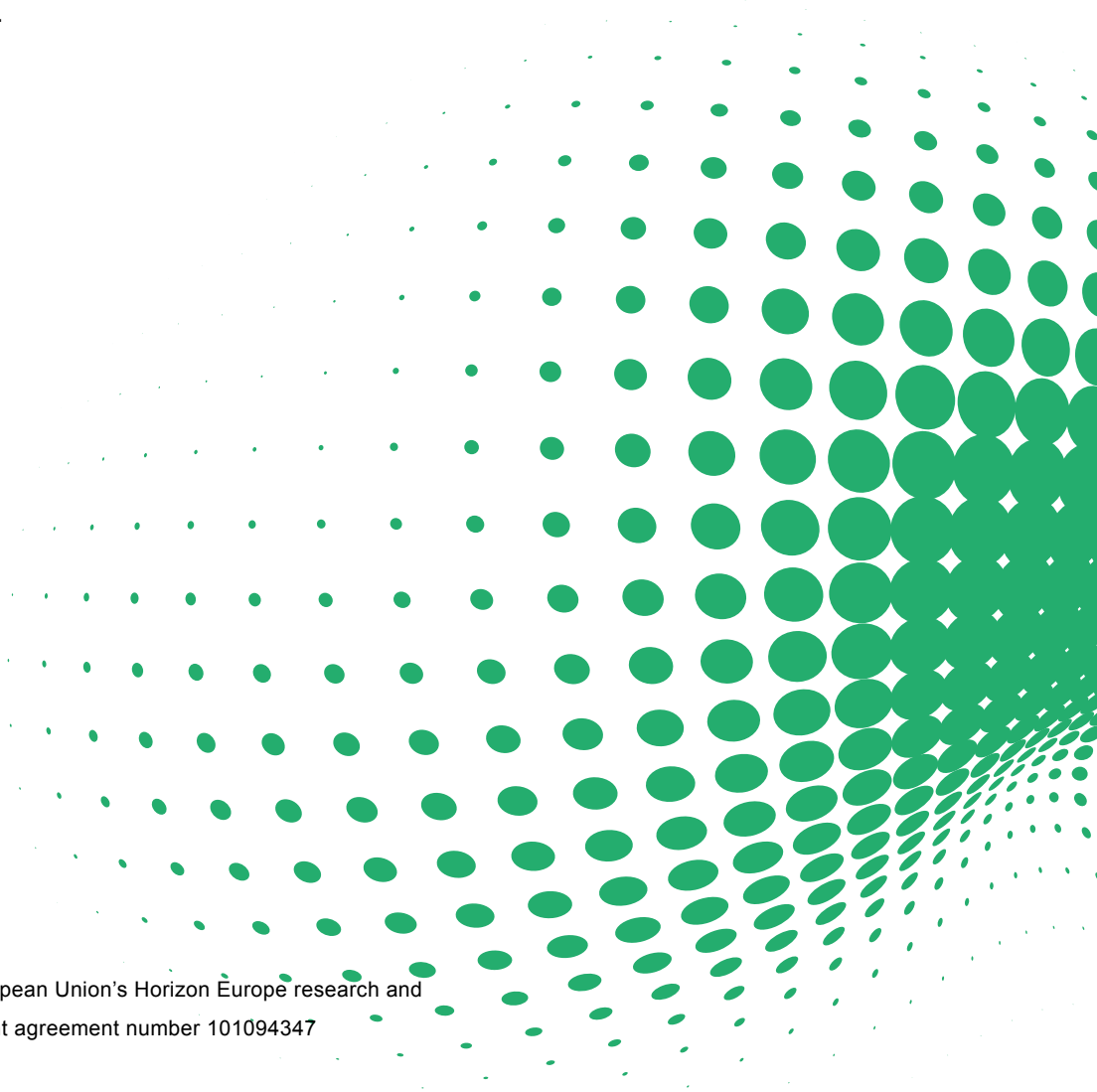
About DYNAMIG

DYNAMIG is a three-year project that aims to create a more thorough understanding of how people make decisions on whether and how to migrate. Focusing on Africa and Europe, we will analyse to what extent the diverse experiences of migrants are taken into consideration when migration policies – or policies that impact migration – are made. We will also look at how effective these policies are in shaping migrants' decisions and behaviour.

Website

dynamig.org



Funded by the European Union

This project is funded by the European Union's Horizon Europe research and innovation programme under grant agreement number 101094347