



MIGNEX Background Paper

The indirect effects of migration on development

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MIGNEX

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MIGNEX Background Papers

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The indirect effects of migration on development

This Background Paper defines indirect effects of migration on development as the effects on specific outcomes of changes in norms, values and perceptions that are brought about by the migratory experience. Specifically, we estimate: (i) the indirect effects on girls' enrolment from changes in gender norms brought about by migration, and (ii) the effects on civic and political participation from changes in perception of the quality of governance brought about by migration.

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The number of migrants in an area has a positive effect on civic participation and girls' secondary enrolment.

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Migratory experiences affect norms and values, which, in turn, increase civic participation and girls' secondary enrolment.

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The true effects of migration at the community level are often underestimated, because effects extend beyond migrant households.

Introduction

Disparities in economic and social opportunities propel many individuals to migrate across borders. The last few decades have witnessed remarkable improvements in transportation and digital communications, which have facilitated massive movements of workers and remittances. In 2020, the number of international migrants stood at 281 million, up from 153 million in 1990 (IOM, 2021). Of these individuals, roughly two-thirds are labour migrants (ibid.), many of whom send remittances back to their country of

origin. In 2022, these financial flows stood at \$647 billion, making remittances the single largest source of external financing for low- and middle-income countries (World Bank, 2023).

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Given the importance of migration for millions of households, it is important and urgent that we understand the effect of these migratory experiences on those who have stayed back. We know, for example, that remittances can influence household spending in sizeable ways. A large body of literature finds, for instance, that remittances increase food security (Moniruzzaman, 2022; Mora-Rivera and van Gameren, 2021) and expenditure on food, clothing, education (Mishra et al., 2022) and health (Kapri and Jha, 2020), they reduce monetary poverty (Andersson and Siegel, 2020), increase living standards more generally (ibid.) and also contribute to macroeconomic growth (Benhamou and Cassin, 2021). MIGNEX Background Paper 7.1 (Marchand et al., 2023) gives a detailed analysis of the direct effects of migration.

However, much less is known about the effects of migration through social remittances, which are the changes in attitudes, behaviours and norms brought about by the migratory experience and transmitted to others (Levitt, 1998). These effects can be considered as *indirect effects* of migration (Andersson and Siegel, 2019) because, through these changes in attitudes, behaviours and norms, effects are felt even by those who have no direct connection to migration. When the effects of social remittances have been studied in the existing literature (Isaakyan and Triandafyllidou, 2017; Vari-Lavoisier, 2016; Goździak and Main, 2020; White and Grabowska, 2019), this has mainly been done qualitatively due to the difficulty of measuring social remittances quantitatively. While some papers assume that changes witnessed are due to social remittances (Roosen and Siegel, 2018), only a few papers have attempted to test whether migration (not specifically social remittances) has changed norms in countries of origin (Spilimbergo, 2009; Li and McHale, 2006; Batista and Vicente, 2011; Pfütze, 2012; Sasse, 2013; Beine and Sekkat, 2013). However, even many of these papers are not able to actually measure if norms changes are indeed what cause other changes in the area or country.

This MIGNEX Background Paper assesses these indirect effects – including norms changes – on a number of development indicators using a large-scale, multi-country survey. As such, our analysis provides a valuable opportunity to estimate these indirect effects in two areas that are important pillars of the European Union’s (EU) vision for Europe internally as well as for its global engagement – namely, girls’ education and participation in democratic processes.

Gender equality in access to education is a core value of the EU, and a key principle of the European Pillar of Social Rights (European Commission, 2020). Similarly, the EU’s approach to democracy is grounded in the Universal Declaration of Human Rights (United Nations, 1948). Since 2015, the EU has also been basing its support for democracy on the 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal (SDG) 16 on accountable institutions and inclusive and participatory decision-making (European Parliament, 2023). The MIGNEX dataset (Hagen-Zanker et al., 2024) contains information not only on girls’ school enrolment

and participation in community organisations and political activities, but also on gender norms and perceptions of the quality of governance. This makes the study of the following two questions possible and opportune.

In this Background Paper, we answer two main questions: (i) *Does migration from a community affect the civic and political participation of individuals who have stayed back by changing how they think about their government?* and (ii) *Does migration from a community affect the schooling of girls who have stayed back by changing how a member in their household thinks about the value of education?*

We use the unique, purposefully designed MIGNEX dataset covering more than 13,000 young adults in 25 local areas across ten countries. The dataset is representative of young adults aged 18–39 in these 25 local areas and our analysis focuses on these young adults and their households. We attempt to overcome the endogeneity inherent in migration by using an instrumental variable (IV) strategy, which allows us to identify causal effects with some degree of confidence.

The rest of this paper is structured as follows. In the next section we provide an in-depth conceptualisation of indirect effects from two perspectives – indirect effects as: i) *demonstration* effects and as ii) *mediating* effects. We also present our empirical strategy. Next, we provide a brief discussion of the relevant literature before discussing our dataset. This is followed by a section where we describe the dependent and independent variables included in the analysis. Next, we present and discuss our empirical findings. In the final, concluding section we draw out key findings, relate them back to the existing literature and identify areas for future research.

Conceptualising and estimating indirect effects

Despite decades of research on the effects of migration on a wide range of well-being and development outcomes in both origin and destination communities, the distinction between direct and indirect effects of migration remains largely underexplored. The existing literature shepherds us towards two main directions, considering indirect effects as either: (i) demonstration effects or (ii) mediation effects. We describe both in turn.

Indirect effects as demonstration effects

One way to think about the indirect effects of migration is to consider the effect that a migrant can have on non-migrants, particularly at the aggregate/collective level via a demonstration effect or a mediating effect. There are at least two streams of literature that discuss the idea of demonstration effects.

Firstly, the ‘brain gain’ literature suggests that when neighbours of migrants witness the benefits of remittances, they too are inspired to migrate. This can lead to additional investment in education if this is seen as a path to easier migration – neighbours want to gain the education and skills required to migrate, but not everyone can and will actually migrate. The net result is an

increase in the average level of human capital in the country of origin (Mountford, 1997; Beine et al., 2001).

However, demonstration effects can also work in the opposite direction (McKenzie and Rapoport, 2011). If more education is not seen as necessary to migrate, this could reduce the incentive to stay in education, possibly reducing educational attainment. This has been evidenced in certain parts of Mexico among male youth who plan to migrate to the United States (ibid.). Male youth have been found to leave school earlier as they will work in low-skilled jobs (i.e., construction, agriculture) that do not require a high school degree.

Secondly, demonstration effects have also been documented in relation to the impact migrants have on the labour force participation of non-migrants in sending communities. Posso (2012), for example, shows that while members of migrant-sending households may reduce their labour force participation, non-migrant households more than compensate for this reduction. In the aggregate, labour force participation actually increases in the regions of origin. Posso conjectures that this is due to a demonstration effect: men who realise the benefits of remittances are incentivised to join the labour market to accumulate skills and experience to find employment abroad.

If we think about the demonstration effect as migrants from a particular area inspiring the movements of their acquaintances, this means that a natural candidate to measure demonstration effects is the share of people in an area who are acquainted with migrants abroad. Another candidate to capture demonstration effects is the extent to which migrants from a research area are spread across different countries, showcasing the different possibilities of migration. The precise construction of both of these variables in the context of available data is discussed in the coming section, Migration variables (T).

Estimating demonstration effects

Consider a simple ordinary least squares (OLS) regression:

$$y_{ij} = \beta S_{ij} + \gamma X + \varepsilon_{ij}$$

where y_{ij} is the outcome of interest for household i in research area j . Depending on the specification, S_{ij} could be either the share of migrants or fractionalisation in a research area for the household i in research area j . X is a vector of covariates that depends on the outcome being studied. Finally, ε_{ij} is an idiosyncratic error term.

Depending on the context, i could be an individual or a household. We carefully differentiate between the two in the results section, but here, we readily switch between the two. Since S is calculated at the research area level, we follow Mishra et al. (2022) and generate variation across households in each research area by interacting it with a household-level variable. We expect that the effect of the share of migrants on enrolment, for example, would depend on the number of school-going children in a household. Similarly, the effect on civic participation would depend on the number of household members who could potentially participate. There is a

concern, however, that this interaction could contaminate the instrument if the interacted variable has an independent effect on the outcome of interest. As it turns out, there is a very weak negative correlation between the number of children in a household and the share of girls enrolled, and a statistically significant correlation, albeit very small in magnitude, between the number of adults and civic participation. Interpretation of the estimates thus warrants some caution.

It is also reasonable to expect that unobservable household-specific characteristics captured in the error term could be correlated with both the knowledge of migrants (and the household interaction) as well as household-level welfare outcomes. For example, ‘ambition’, which cannot be readily observed, could be expected to correlate both with the network that an individual respondent is a part of, which could include migrants, as well as decisions to participate in political and civic activities. We resolve the resultant endogeneity by using instrumental variables, the construction of which is detailed in the section Instrumental variables (IV).

Indirect effects as mediation effects

In an earlier MIGNEX Background Paper, Andersson and Siegel (2019) suggest disentangling the direct and indirect effects of migration by considering the impact migration has: (a) directly through remittances and (b) indirectly through changes in attitudes and behaviour. For example, migration may lead to changes in attitudes towards corruption and, through that change, lead to changes in political and civic participation. Similar ideas have been proposed by Deng and Law (2020) and Lu et al. (2019), who attempt to understand the mechanisms through which the effects of migration are realised. Deng and Law (2020), for example, find that the positive association between migration and psychological distress among rural-urban migrants in China is mediated by the discrimination rural migrants face in cities. Similarly, Lu et al. (2019) find that the health disadvantage of children whose parents have migrated was mediated by children’s nutritional intake. These papers draw our attention to ‘mediation analysis’ (MA) as a formal framework for disentangling direct and indirect effects.

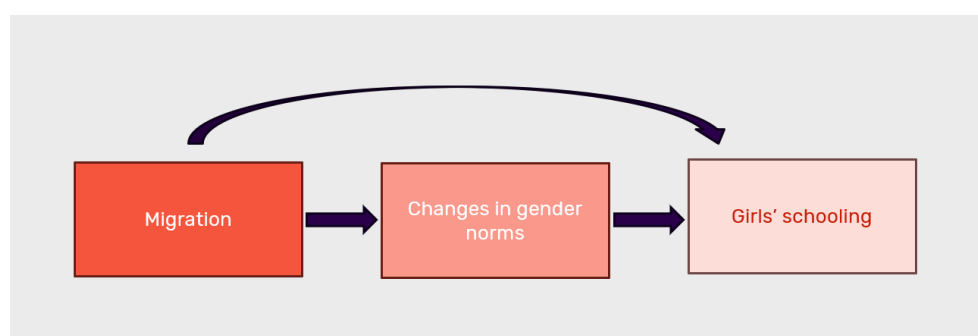


Figure 1. Direct and indirect effects of migration on schooling

Source: The authors.

MA proposes that other intermediate or mediating variables inhabit the path from a cause to an effect. In the immediate context of this paper, this suggests that the path from migration status of a household and welfare outcome measured at the household level may be mediated by some other variable, and Figure 1 shows one possibility. We hypothesise that migration experience can change a household's attitudes towards gender, which then impacts girls' schooling. This is defined as the indirect effect of migration through gender norms and stands independently of any direct effect that migration status may have on girls' schooling. In Figure 1, the direct effect is represented by the long arrow from migration straight to schooling. The indirect effect, on the other hand, operates through changes in gender norms.

Causal inference and mediation analysis

From an estimation perspective, the immediate question that arises is about causal inference. In traditional estimation, if we ignore the mediating variable, we only have to worry about the endogeneity of migration status. In a mediation framework, we have additional concerns about the endogeneity of norms.

Earlier literature dealing with MA predates the 'causal revolution'. While it provided a framework for understanding the role of mediating variables (see Baron and Kenny (1986) for an influential paper and Huber (2019) for a recent review), this work did not take endogeneity as seriously and was built upon mathematical structures and statistical assumptions that made general applicability and sensitivity analysis difficult (Imai et al., 2010).

The causal inference literature, on the other hand, while investing immense intellectual capital on causality, did not initially pay attention to mediation or mechanisms of causality. A critique of early randomised experiments targeted the inability of these studies to peer into the black box between cause and effect (ibid.). This was a severe drawback because, as Gelman and Imbens (2013) emphasised, policy requires identifying not only the effect of the cause but also the cause of the effect.

Causal mediation analysis (CMA) strove to overcome the limitations of both standard MA and standard causal inference by weaving the conceptual ideas of MA into the counterfactual framework of causal inference. Arithmetically, CMA typically involves decomposing the average treatment effect of a treatment (T) on an outcome (Y) into an indirect effect operating through a mediator (M) and a residual direct effect which includes any causal mechanism not operating through the mediator(s) of interest.

Causal MA with instrumental variables

As alluded to earlier, the dataset we rely on does not randomise treatment (migration status) as it is rarely possible to randomise migration status, with the exception of rare migration lotteries. We must instead rely on instrumental variables (IVs) for identification. For recent reviews of IVs in CMA, see Frölich and Huber (2017) and Celli (2022).

The estimation presented in this paper is based on Dippel et al. (2018) and Dippel et al. (2020). The primary reason for relying on the work of Dippel

and coauthors is that they propose a solution to the identification problem using a single instrument. Finding reliable instruments is difficult in the best of conditions, and, as we discuss below, we were able to find instruments for migration status but not for the mediator variables. However, using one instrument imposes its own costs regarding assumptions required for causal inference. In particular, sequential ignorability (SI) is no longer sufficient (see Appendix 1, Assumption 2: Sequential ignorability (SI)).

To see the additional requirements imposed by this method, consider Figure 2. Model 1 concerns the causal effect of non-random treatment T (migration status) on the mediating variable (gender norms). The IV method for estimating this effect accepts that migration is endogenous in a regression of norms on migration (i.e., ϵ_T and ϵ_M are correlated) but that the IV is exogenous ($Z \perp (\epsilon_T, \epsilon_M)$). Similarly, Model 2 is the standard IV model to estimate the causal impact of migration on household outcomes such as enrolment. In our context, this gives the total effect of migration on enrolment. However, together, Models 1 and 2 still leave unidentified the extent to which the effect on the norm leads to changes in enrolment.

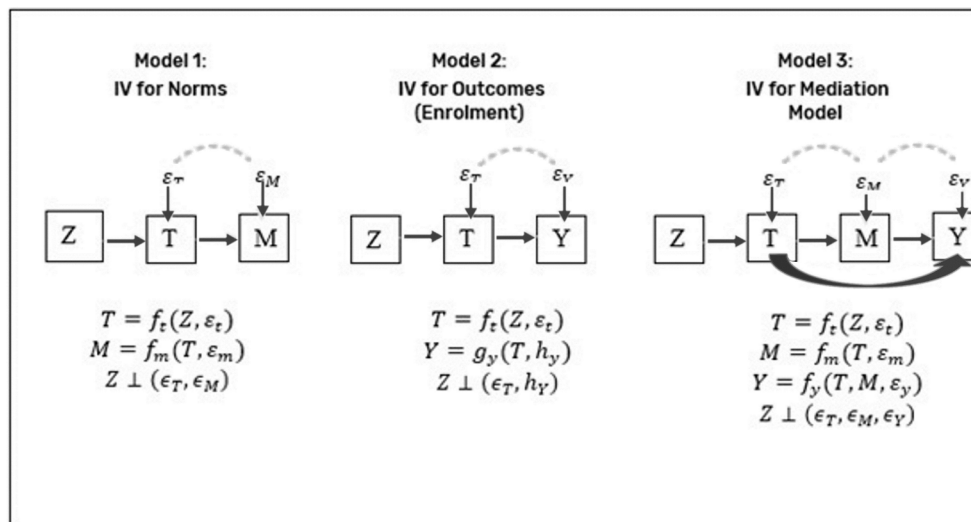


Figure 2. Assumptions as a result of using a mediation model

Source: Dippel et al. (2020: 2).

This mediation effect is presented in Model 3. The identification challenge in this model involves the fact that T causes Y directly *and* indirectly through M . In a regression of enrolment on both migration and norms, for example, there will be two endogenous regressors but only one instrument to address this endogeneity. There are additional assumptions required regardless of whether one IV or two are used, but Dippel et al. (2018) argue that the assumptions required for two IVs are more restrictive. Their own additional assumption is that unobserved variables that affect both the mediator (norms) and the treatment (migration) do not directly affect the outcome (enrolment). This is discussed formally as Assumption 3 in Appendix 1.

For a concrete example of this assumption, we can consider the research context of Dippel et al. (2018): They study the impact of import exposure on

political populism directly as well as indirectly through the adverse impact of imports on labour market outcomes. The authors argue that the main source of endogeneity in their context is that unobserved demand shocks affect both the import exposure (T) and employment (M). But, they argue, demand shocks should not affect voting (Y) directly but only through employment (M). This lack of relation between the outcome and the source of endogeneity in Treatment and Mediation allows for identification.

Estimation

Under linearity, the framework can then be estimated using three separate two-stage least squares (2SLS) estimations: (i) effect of Migration on Norms (ii) Migration on Outcomes (School/Participation) and (iii) Norms on Outcomes conditional on Migration, as outlined below. Model 1 can be estimated as follows:

$$\text{First Stage: } Mig = \beta_{Mig}^{IV} IV + \varepsilon_T$$

$$\text{Second Stage: } Norms = \beta_{Norm}^{Mig} \widehat{Mig} + \varepsilon_M$$

where \widehat{Mig} stands for the estimated values of Mig in the first stage.

Model 3 can be estimated as follows:

$$\text{First Stage: } Norms = \gamma_{Norm}^{IV} IV + \gamma_{Norm}^{Mig} = Mig + \varepsilon_T$$

$$\text{Second Stage: } Y = \beta_Y^{Norm} \widehat{Norms} + \beta_Y^T Mig + \varepsilon_Y$$

Where \widehat{Mig} is estimated in the first stage.

The direct effect is given by β_Y^T and the indirect effect is $\beta_Y^{Norm} * \beta_{Norm}^{Mig}$. To see the intuition behind this, note that β_Y^{Norm} is the change in outcome due to a unit change in the norm and β_{Norm}^{Mig} is the change in the norm due to a change in migration. Their product will then give the change in outcome due to β_{Norm}^{Mig} units of change in the norm. We use the Stata routine `ivmediate` as discussed in Dippel et al. (2020) to generate these estimates.

Discussion of related literature

The multiple effects of migration on development outcomes have been widely evidenced across disciplines. The breadth of these studies ranges from the socioeconomic impacts of migration on countries of origin and destination (see Ratha et al. (2011) and Andersson and Siegel (2020) for a review of the literature) to the effects of return migrants (see Bilecen (2022) for a review). However, the question of ‘how’ these patterns can be explained, so the mediating factors or mechanisms through which these effects occur, are frequently understudied.

The analysis of mediating factors in this framework allows us to simultaneously estimate the direct effect of migration on development outcomes and the indirect effects through various mediators while allowing for some mediators to influence other mediators. Only a handful of migration studies have tackled the analysis of mediating effects. Lu et al. (2019) estimate the effect of migration on the health of children left behind

in China, employing multiple mediator models under a structural equation modelling framework. Ma and Wu (2019) use a random-intercept mediation model to evaluate education inequities of migrant children in rural China and find that the educational outcomes of migrant children are significantly worse than urban peers, an effect that is mediated by the hukou-related school quality and social capital. Other studies aim to examine the effects of gender norms on labour force participation (Xiao and Asadullah, 2020) and that of gender identity on earnings (Bertrand et al. (2015), who have also employed MA to disentangle mechanisms).

The present analysis follows a similar methodological approach as these studies. This is one of the key contributions of this study: the ability to shed light on both the effects between migration on development outcomes as well as the mediating factors causing this aggregated effect.

In the following sections we describe the existing literature that pertains to each component of the causal chain: 1) the effects of migration on the relevant development outcomes, 2) the effects of migration on mediating factors, and 3) the effects of mediating factors on development outcomes. In our empirical analysis, we seek to link all these components to provide evidence of the causal chain from migration measures to the resulting development outcomes, while at the same time identifying the mechanisms behind each effect.

Effects of migration on relevant development outcomes

Effects of migration on schooling

There is a large literature discussing the effects of migration on education outcomes of children who stay back in origin countries. On one hand, several studies evidence the positive effect of remittances in increasing school attendance and lowering school dropout (Acosta, 2006; Cox Edwards and Ureta, 2003; Lopez-Cordova, 2005; Bouoiyour and Miftah, 2016). For instance, in El Salvador, young boys and girls who live in remittance-recipient households are more likely to be enrolled in school than those living in non-remittance-recipient households (Acosta, 2006); and remittances are found to have a significant impact on lowering their hazard of dropping out of school (Cox Edwards and Ureta, 2003). Children in remittance-recipient households in Morocco are more likely to attend school, and less likely to drop out (Bouoiyour and Miftah, 2016).

Conversely, parental absence due to migration is evidenced to have several adverse consequences on children's well-being. Parental migration leads to labour adjustments within the household which can have a negative impact on children's health and education (Antman, 2011; McKenzie and Rapoport, 2011; Amuedo-Dorantes and Pozo, 2010). In Mexico, children reduce study hours and increase work hours due to the immediate financial hardship after the father leaves (Antman, 2011). Likewise, in rural Mexico, living in a household with at least one migrant parent decreases the likelihood of boys and girls completing high school by 13% and 15%, respectively, due to increased migration of boys and increased housework for girls (McKenzie and Rapoport, 2011).

Another strand of the literature moves back from the migrant in the household and looks at the ‘aggregate’ effect of migrants in a society. This literature draws attention to the fact that the presence of migrants in the immediate society of an individual may reduce the costs of migration and allow access to an international labour market. Migration aspirations can then potentially align schooling decisions with returns to schooling in those international markets.

Theoretically, these incentive effects can go either way – if recipient countries have high returns to education, aspiring migrants will be induced to increase schooling. But if recipient countries do not have high returns to education, or if recipient countries do not value schooling attained in origin countries, the incentive effects may well reduce schooling.

Empirical studies of aggregate-level effects support a positive association between emigration and education. Using a sample of 37 low-income countries (including three MIGNEX countries – Ghana, Pakistan and Tunisia), Beine et al. (2001) find a positive and significant correlation between migration prospects and education decisions. Later work by Beine et al. (2008) also finds similar results; doubling a country’s emigration rate of highly skilled workers is associated with a 5% increase in the long-run stock of human capital in the country. Country-level evidence – by Chand and Clemens (2023) for Fiji, by Gibson and McKenzie (2011) for Tonga and Papua New Guinea, by Dinkelman and Marriotti (2016) for Malawi, by Shrestha (2017) for Nepal and by Theoharides (2018) for Philippines – is also consistent with a positive impact of emigration on the net stock of human capital in the origin country.

Effects of migration on political participation

There is now an emerging literature exploring the effects of emigration, particularly of skilled migrants, on political institutions in countries of origin. Generally, the literature on the effects of migration on political participation has mixed findings. International migration has been associated with increased demand for political change in Morocco (Tuccio et al., 2019), increased demand for accountability in Cabo Verde (Batista and Vicente, 2011), reduction in bribe giving in eastern Europe (Ivlevs and King, 2017) and political participation in Mexico (Perez-Armendariz and Crow, 2010). Cross-country analysis also supports similar conclusions. Spilimbergo (2009) offers evidence that foreign-educated individuals foster democracy at home when education is acquired in a democratic foreign country. Moreover, Li et al. (2017), Docquier et al. (2016), and Escribà-Folch et al. (2022) find that emigration has a positive effect on common indices of democracy (such as the Polity IV index). However, the choice of indicator may affect findings. Beine and Sekkat (2013), for instance, find a negative effect of emigration on ‘voice and accountability’, but they also find positive effects on five other indicators.

According to Kapur (2010), there are four ways that migration affects the political participation of the family staying behind: through absence, prospective migration, return, and diaspora channels. Firstly, the absence channel influences the political participation of the family at home because the political actions and opinions of one of the family members are missed.

This is likely to produce effects on the electoral participation of citizens remaining behind. Secondly, the prospective migration channel includes the way that political behaviour is influenced by the possibility that family members might also migrate and follow the already migrated person. Thirdly, the return channel includes the various ways in which a returning migrant has gained new skills, resources, networks and ideas that influence the political participation of the family at home. Lastly, the diaspora channel includes the social and political remittances and ideas that are sent back to the family at home that might influence their political actions and ideas.

Perez-Armendariz and Crow (2010) find that, in regions where many people have emigrated, there are higher rates of non-electoral political participation, there is a greater tolerance of political and social differences, and there are more critical evaluations of democracy rights. This is caused by a diffusion of attitudes and behaviour from more to less democratic countries through social and political remittances.

Goodman and Hiskey (2008) also find that there is less political participation in high-migration municipalities in Mexico and they identify two processes that might explain this effect. First, the people who migrate are more likely to be active in politics. Thus, if those people migrate and all else remains equal, this means that the people who stay back are less inclined to participate in formal politics. Secondly, the people who remain in the high-migration municipalities in Mexico are likely to receive remittances from the people who have migrated and may become more and more dependent on these remittances and the accompanying transnational community that it creates. This might mean that these people become increasingly disengaged from their formal political system, and less politically active.

Effects of migration on community participation

There are a number of ways in which migration of a household or family member can influence the civic and community participation of those who stay behind. Fransen (2015) finds that remittances generally affect social capital in three ways: 1) by enabling households staying back to invest more in those around them in the community; 2) by increasing income of the household which can increase civic engagement; and 3) through social remittances that can lead to the transfer of ideas and values which can increase civic engagement. The author finds that remittance-receiving households invest more in social capital and structural social capital by donating time to organisations and being involved in associations, but they make fewer monetary donations compared to households who do not receive remittances. Remittance-receiving households also invest more in bonding social capital but only when their network is comprised of family members.

Nikolova et al. (2017) find that if a family member or friend had migrated, people remaining were more likely to engage in pro-social behaviour (donating, volunteering and helping strangers) in the central and eastern European context after the fall of the Soviet Union.

Households who stay behind can use remittances to invest in social capital, as well as in human and productive capital. Remittances thus reinforce and produce social capital. This effect may be even stronger in countries where

public social security provision is weak (Gerber and Torosyan, 2013). Levitt (1998) finds that the social capital that migrants have built up in the country of origin by making community contributions could have positive spillover effects on the social capital of their family members staying back. The opposite is also true. If a migrant family member could contribute back to the community of origin but did not, this could have a negative impact on the social capital of their family staying back. On the more negative side, in their study based on children who stay back in China, Guo et al. (2019) find that children whose parents have migrated experienced significantly lower social capital levels than other children.

Effects of migration on mediating factors

The subsection above discusses the literature studying the effect of migration on the outcomes of interest – schooling and civic/political participation. Recall now that we are interested in the indirect effects, which require us to also think about how migration affects norms/attitudes/perceptions that could, in turn, affect the outcomes discussed above. Below, we discuss first the effects of migration on attitudes towards gender (to later link with schooling), before discussing the effects of migration on perceptions of governance and corruption (to later link with civic and political participation).

Effects of migration on attitudes towards gender

Social remittances of migration can transform societal norms, including those around gender attitudes, through the transmission of values and social dynamics from countries of destination to origin. However, the literature on the effects of migration on gender norms is still quite limited. Earlier work has focused on how international migration can influence fertility decisions at origin by changing incentives (Mountford and Rapoport, 2011) and by exposing migrants to fertility norms at destination (Fargues, 2011; Bertoli and Marcheta, 2015). Return male migrants are seen to change gender norms by having more egalitarian gender behaviours including becoming more respectful of women and being more willing to share domestic and work responsibilities (Barett, 2014). Also, migrant fathers who return can exhibit a more equitable treatment between daughters and sons, for instance through the equal allocation of resources between them (Mangiavacchi and Piccoli, 2022).

The receptiveness of changes in gender norms in origin countries and the direction of change of values transmitted can also depend on the country of destination and the transmitter's social status. Emigration to the EU and member countries of the Organisation for Economic Co-operation and Development (OECD) has been shown to have a positive impact on women's empowerment (Akkoyunlu, 2013), whereas migration to Arab countries has a lower impact comparatively on empowerment (ibid.) and a stronger influence in promoting more traditional gender norms (Tuccio and Wahba, 2018). In Yemen, the impact of social remittances on gender norms depends largely on the social status of a returnee where norms and ideas shared by those with higher education or economic status receive higher receptiveness (Christiansen, 2012). Similarly, Joseph et al. (2022) find that migrants returning to Kerala, India, from Saudi Arabia exhibit conservative values

regarding gender-based violence, while those returning from other Gulf countries are less conservative. Mitra et al. (2021) provide even stronger results suggesting that remittances, by themselves, regardless of origin country, can have a transformative effect (for Pakistan), with women receiving remittances being less tolerant of domestic violence.

In addition, migrant women themselves can change gender norms through their own migration experience. They can do this by transmitting new values associated with women's identity including independence and alternatives to a life solely dedicated to family (Vianello, 2013). As a result of migration, they also have more knowledge about different traditions, customs and languages, which can create expectations around gender equality and roles within the family, particularly on receiving respect and support from family with their career decisions and providing equal opportunities to daughters and sons (Bhadra, 2007). Through financial remittances, migration can also change social norms by giving a higher bargaining power to women and by influencing their confidence and decision-making ability (UNDP, 2014).

The overall effects of social remittances on attitudes towards gender can vary depending on the gender of the migrant, the destination country, the experience of the migrant abroad, the frequency and length of stay in the country of origin upon return, and other factors. Given the scope of our analysis, which includes 25 diverse research areas, the aggregated effect can go in both directions.

Effects of migration on perceptions of corruption and governance

Migrants can transfer a wide range of ideas, skills, knowledge and values to countries of origin, including those promoting democratic values and governance. There is a small body of literature exploring the links and mechanisms through which migration and remittances can influence political participation and attitudes, governance and corruption behaviour, and attitudes in origin countries (Abdih et al., 2012; Beine and Sekkat, 2013; Berdiev et al., 2013; Tyburski, 2012). Beine and Sekkat (2013) provide cross-country theoretical and empirical evidence in support of the transfer of institutional norms from migrants' host country to their home around governance, accountability, regulation and control of corruption.

At the country level, Tyburski (2012) finds that financial remittances mitigate corruption by increasing government accountability and by providing other incentives to reform in Mexico. In Cabo Verde, Batista and Vicente (2011) identify a positive effect of international migration on increased political accountability in countries of origin, where the effect is larger for return migrants and for migrants in destination countries with better governance.

Closer to this analysis, a few recent studies evidence how migration to states with more democratic values can influence migrants' attitudes towards bribes and corruption as well as political preferences, which can also extend to their family and networks in countries of origin (Barsbai et al., 2017; Ivlevs and King, 2017). Barsbai et al. (2017) employ quasi-experimental methods and investigate the impact of labour migration on democratisation and voting behaviour in Moldova, a former Soviet Republic. They find large and robust effects of migration patterns on electoral preferences, namely a

decrease in the Communist vote share, and show that this effect takes place through information transmission and cultural diffusion channels. Qualitative interviews carried out also allows them to identify corruption as one of the key political issues, where respondents attribute their lower tolerance to corruption and bribes to their experience of living in western Europe.

Likewise, Ivlevs and King (2017) explore the impacts of emigration on experience of bribery and attitudes towards corruption in migrants' countries of origin in the context of the former Yugoslavian countries. The authors find that having relatives abroad reduces the probability of exhibiting three corruption-related behaviours: bribing public officials, finding bribe-taking behaviour by public officials acceptable, and being asked for bribes by public officials. These findings also provide evidence in support of the important role of social remittances in transferring norms and practices from destination to origin countries.

By evaluating the relationship between migration and political participation through the mediating effect of perceptions of corruption and governance, the present analysis is also contributing to this nascent and growing literature on the links between emigration, social remittances and politics.

Effect of mediating factors on outcomes

Having discussed the literature on (i) the effects of migration on outcomes of interest and (ii) the effects of migration on norms and perceptions, we can now turn to a third and last link – the relationship between norms/perceptions and the outcomes of interest.

The effect of gender norms on girls' schooling

Discriminatory gender norms shaped by cultural, economic, religious and other factors can influence the value attributed to education, particularly for girls, which can lead to considerations for alternatives to education. In low-income contexts where families cannot afford to send all children to school, they often choose the boys (Bhadra, 2007). Likewise, domestic work, attributed predominantly to girls, can hinder girls' education by lowering their school attendance and performance (Ghimire and Samuels, 2014).

In addition, we know from a large body of literature on low-income countries that the age for secondary schooling is when women's marital roles may obstruct their access to schooling. Early marriage can have a direct effect on educational attainment and school dropout for girls through multiple channels. Cultural values can push parents to have their daughters married at a young age if they are unable to afford the costs of schooling, while dowry systems in place can create economic incentives for early marriage (Brown, 2012). Alternatively, the anticipation of marriage can undermine girls' school experience and lead them to question the benefits of an education they might not be able to apply, which can in turn lead to them dropping out of school (Greene and Stiefvater, 2019). Norms around marriage, education and work, therefore, constitute the structure of opportunities within which individuals and households pursue their interests and decide whether education is desirable.

The effect of perceptions of governance and corruption on civic and political participation

MIGNEX
Background
Paper

The link between perceptions of corruption and governance on political participation is well-documented across fields. On the whole, there are two contrasting views on the overall effect of corruption on political participation, one side suggesting that corruption has a deterrent effect (Stockemer et al., 2013), while another side proposes that it has a mobilising effect (Karahan et al., 2006; Bratton et al., 2005).

Most of the existing literature evidences a negative association between corruption and voter turnout (Stockemer et al., 2013). This strand of the literature shows that corruption lowers voter turnout by reducing citizens' trust in the political process and institutions (Kostadinova, 2009; McCann and Dominguez, 1998; Clausen et al. 2011), increasing the belief that elections are fraudulent (Simpser, 2005) or producing a feeling of exhaustion and withdrawal in the citizenship (Kostadinova, 2009). For instance, in the case of Mexico, corruption and fraudulent elections had a detrimental impact on citizen trust in political processes leading to voter absenteeism and preference for 'staying at home on Election Day' (McCann and Dominguez, 1998). Similarly, Simpser (2005) also shows that electoral corruption in the form of fraudulent elections are negatively associated with voter turnout. Kostadinova (2009) evidences a temporality component of the effect of corruption where, at its early stage, corruption may act as an incentive for citizens to vote and overthrow corrupt politicians, but, over time, corruption can lead to political alienation, withdrawal and lack of trust.

Conversely, other scholars suggest that corruption can act as a strong mobilising agent for voter turnout either because citizens have a stronger incentive to demand a transparent and accountable government (Bratton et al., 2005) or because of incentives or bribes (Karahan et al., 2006). For instance, in Senegal, when faced with government corruption, citizens turn out to vote instead of becoming apathetic or engaging in corrupt behaviour themselves (Inman and Andrews, 2010). Likewise, in the United States context, Johnston (1983) suggests that voter turnout may increase when corruption is more prevalent. Alternatively, when corruption is highly prevalent, citizens can also turn out to vote at higher rates because of promises or delivered favours made by politicians (Karahan et al., 2006).

Perceptions around corruption can influence political participation through multiple channels including creating mistrust in the political process and institutions and by propagating a culture that lacks transparency and accountability. In turn, perceptions of corruption and governance can influence voter turnout and engagement in protests and other manifestations. Although most literature supports a negative relationship between corruption and political participation, there is no general consensus on the direction of this effect as the impact is largely context-specific. And it is to the context of our own dataset that we turn to next.

Data

MIGNEX
Background
Paper

In this paper, we draw heavily on the MIGNEX survey. This in-person survey was conducted between October 2020 and February 2022 with more than 13,000 young adults (aged 18–39) across 26 local areas in ten countries¹ (Figure 3). The survey covers a range of topics related to migration and development and it was designed to allow for comparison across local areas, with more than 95% of survey items directly comparable, both in terms of wording of the survey item and response options.



Figure 3. The MIGNEX local areas

The survey is approximately representative of the 18–39-year-old population in each research area, having applied a three-stage probability-proportional-to-size (PPS) cluster sampling strategy with systematic random walks. In the analysis we use weights calculated at the individual level.

We use the MIGNEX survey dataset restricted-access variant, Version 1 (Hagen-Zanker et al., 2024). A detailed discussion of the survey’s implementation, data cleaning and preparation of weights and other variables can be found in Hagen-Zanker et al. (2023).

Descriptive statistics

In this section, we provide an overview of the variables used in the regression analysis. We first discuss outcome variables, or following the methodology laid down above, the ‘Y’ variables. We then discuss migration or ‘T’ (treatment) variables, Mediating or ‘M’ variables, Instrumental Variables (IV) and then control variables ‘X’.

¹ We exclude the data for Kumbolcha (ETH1), where we did not reach the target sample of 500 respondents for this area as data collection had to be halted prematurely due to insecurity.

Outcome variables (Y)

MIGNEX
Background
Paper

Girls' schooling

The MIGNEX survey collected information on whether all secondary-aged children in the household are enrolled in school.² We can then calculate the share of children of appropriate age who are in school. For this analysis, we limit ourselves to only girls. Since not all households have girls of the appropriate age, the analysis is limited to the sub-sample of those who do. This is done based on survey items A19 through A24, which ask about the number of secondary school-aged boys and girls in the household as well as their enrolment.

Table 1 presents the share of girls (and boys as well) in a research area that are of a (secondary) school-going age and enrolled. Across all research areas, the average percentage of all secondary-aged girls in a household enrolled in school is 64%, while the same figure for boys is 66%. Girls' enrolment shares range from a minimum of 19% in Dialakoro (GIN2) to a maximum of 96% in Redeyf (TUN2) and Hopa (TUR1). These figures highlight significant disparities in educational enrolment rates among the research areas studied.

² A pilot survey conducted prior to the main survey showed that there was not much difference in primary enrolment across sites so we decided to collect information only on secondary enrolment.

Table 1. Summary statistics, share of girls and boys enrolled by research areaMIGNEX
Background
Paper

Research area	Girls' enrolment share (%)	Boys' enrolment share (%)
São Nicolau (CPV1)	91	76
Boa Vista (CPV2)	95	90
Boffa (GIN1)	25	28
Dialakoro (GIN2)	19	30
Gbane (GHA1)	66	57
Golf City (GHA2)	56	59
New Takoradi (GHA3)	29	33
Down Quarters (NGA1)	77	73
Awe (NGA2)	72	70
Ekpoma (NGA3)	77	88
Batu (ETH2)	79	80
Moyale (ETH3)	51	69
Erigavo (SOM1)	69	81
Baidoa (SOM2)	63	71
Enfidha (TUN1)	94	92
Redeyef (TUN2)	96	90
Hopa (TUR1)	96	94
Yenice (TUR2)	94	87
Kilis (TUR3)	79	74
Shahrake Jabrael (AFG1)	89	78
Behsud (AFG2)	53	77
Shahrake Mahdia (AFG3)	93	86
Chot Dheeran (PAK1)	73	60
Youhanabad (PAK2)	77	72
Keti Bandar (PAK3)	18	34
Total sample	64	66
Minimum	19	28
Maximum	96	94
N	3,451	4,079

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-d72-rashid-master-enr-2023-10-02.do.

Civic and political participation

The MIGNEX questionnaire, within the context of social and political institutions, asked respondents whether they had voted in the last election (if eligible) and if they had participated in: (a) demonstrations and protests, (b) political party meetings or rallies, and (c) community groups. For our quantitative analysis we look at each participation question separately.

Summary statistics are presented in Table 2. These constitute dummy variables which take the value of ‘1’ if a respondent had participated and ‘0’ otherwise.

Participating in protests

The survey items J1 and J2 relate to demonstrations or protest marches that the respondent may have heard about and participated in. In our case, we construct a binary variable that considers those who participated in a protest as well-off, in contrast to those who did not know about a protest or knew about one and did not participate. Overall, 109 responses are missing for this indicator.

The average participation rate in protests is approximately 8% across the 25 research areas. Moyale (ETH3) shows the highest level of participation in protests at 20%, suggesting a more active civil society in that region. Meanwhile, Kilis (TUR3), Chot Dheeran (PAK1), and Youhanabad (PAK2) report the lowest rates at 1%, 2% and 2%, respectively, indicating comparatively limited protest engagement.

Voting

Items J4 and J5 of the survey asked the respondents whether they were eligible to vote in the most recent national or local location and, subsequently, if the answer was yes, whether they did in fact vote. Based on these two indicators, we built a binary variable that considers those who were eligible to vote and did so. We have 50 missing values in this case.

The descriptive statistics indicate that, on average, approximately 57% of respondents were eligible to vote and participated in the last election across the research areas. Dialakoro (GIN2) stands out with the highest percentage at 86%, showcasing active political engagement in this research area. Conversely, Baidoa (SOM2) reports the lowest participation at 2%, reflecting potential challenges in exercising voting rights.

Participation in a community group

Respondents were asked in survey item E12 about potential engagement in a community group: ‘During the past year, have you participated in any kind of volunteering or community group?’. We use this variable in its original form and have 25 missing values.

The indicator therefore shows the average percentage of individuals who participated in voluntary or community groups in the past year, which is approximately 20% across the research areas. Gbane (GHA1) leads with the highest participation rate at 46%, reflecting active community involvement in the region. In contrast, Youhanabad (PAK2) reports the lowest participation at 4%, possibly reflecting limited community engagement opportunities.

Table 2. Summary statistics, civic and political participationMIGNEX
Background
Paper

Research area	Voting (%)	Protest (%)	Community group (%)
São Nicolau (CPV1)	81	5	14
Boa Vista (CPV2)	64	18	14
Boffa (GIN1)	65	8	45
Dialakoro (GIN2)	86	6	25
Gbane (GHA1)	61	10	46
Golf City (GHA2)	56	3	27
New Takoradi (GHA3)	57	5	43
Down Quarters (NGA1)	62	6	10
Awe (NGA2)	68	5	15
Ekpoma (NGA3)	38	10	13
Batu (ETH2)	65	14	42
Moyale (ETH3)	69	20	30
Erigavo (SOM1)	81	7	23
Baidoa (SOM2)	2	6	21
Enfidha (TUN1)	35	8	20
Redeyef (TUN2)	43	14	18
Hopa (TUR1)	71	17	16
Yenice (TUR2)	77	6	10
Kilis (TUR3)	33	1	7
Shahrake Jabrael (AFG1)	50	5	10
Behsud (AFG2)	49	3	28
Shahrake Mahdia (AFG3)	53	4	12
Chot Dheeran (PAK1)	50	2	6
Youhanabad (PAK2)	39	2	4
Keti Bandar (PAK3)	63	11	10
Total	57	8	20
Minimum	2	1	4
Maximum	86	20	46
N	12,923	12,864	12,948

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-d72-rashid-Main-master-2023-10-02.

Migration variables (T)

We use several ways to measure migration. As discussed above, we use share of migrants and fractionalisation to analyse demonstration effects. These variables are defined as follows:

- Share of migrants: This is the share of households in a research area that know a migrant. Since this variable will be constant across households in a research area, we interacted it with the number of

working-age adults (between 18 and 39 years) in the household to generate variation (as discussed above).

- Fractionalisation of destination: This is a measure that attempts to capture the diversity of destinations in a research area. For regressions, this variable is also interacted with the number of working-age adults in the household to generate variation across households in a research area.

For the MA, however, we follow Marchand et al. (2023), and our main independent variables of interest are those capturing different aspects of migration that can impact development at the micro-level:

- Current migrant: Household has family members, relatives or friends who live in another country.
- Return migrant: Household has returnee migrant family/relatives/friends.
- Remittances: Household has received remittances (in past year).

Table 3 presents descriptive statistics for the migration-related variables, including the mean value by research area, and the mean, minimum and maximum values across the 25 research areas of analysis. We describe the operationalisation process of each variable and descriptive statistics separately below.

Current migrant

Whether the household has a current migrant is captured in survey item F1, ‘Do you have any family members, relatives or friends who live in another country?’, and is recorded as a binary variable. In our analysis, we employ the variable in this binary form to differentiate between those households who have a current migrant acquaintance and those who do not. The number of missing values is low at 14 cases across the entire sample.

Table 3 shows that about 55% of the households across the 25 MIGNEX research areas have a current migrant. There is quite some variation. Some research areas have very high shares of having a current migrant, for example, both research areas in Cabo Verde with (close to) 100%. While many others have values between the extremes; Keti Bandar (PAK3) has the lowest share at 4%.

Return migrant

The return migrant variable is captured in the survey item F4, ‘Do you have other family members, relatives or friends who left [COUNTRY], lived abroad for at least one year and later moved back to [COUNTRY]?’. The responses are coded in a binary way and used in the analysis as such to differentiate between households who have a return migrant and those who do not. The number of missing values in this case is a bit higher at 54 across all research areas.

Compared to the current migrant variable, the share of households with a return migrant is lower. The average across all 25 research areas is 17%. In this case, Shahrake Mahdia (AFG3) has the highest share with 34%, while Keti Bandar (PAK3) again has the lowest share with only 1%.

Table 3. Summary statistics of migration variablesMIGNEX
Background
Paper

Research area	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
	%	%	%	Mean	Mean
São Nicolau (CPV1)	98	20	59	0.98	0.84
Boa Vista (CPV2)	100	20	46	0.99	0.86
Boffa (GIN1)	75	26	30	0.71	0.83
Dialakoro (GIN2)	45	12	9	0.47	0.90
Gbane (GHA1)	27	9	8	0.26	0.90
Golf City (GHA2)	74	16	32	0.72	0.89
New Takoradi (GHA3)	82	19	42	0.81	0.88
Down Quarters (NGA1)	29	9	10	0.26	0.93
Awe (NGA2)	6	4	2	0.06	0.84
Ekpoma (NGA3)	64	15	28	0.63	0.90
Batu (ETH2)	51	26	15	0.52	0.86
Moyale (ETH3)	32	10	10	0.32	0.72
Erigavo (SOM1)	54	9	26	0.53	0.81
Baidoa (SOM2)	32	18	19	0.29	0.87
Enfidha (TUN1)	87	26	41	0.87	0.81
Redeyef (TUN2)	78	26	28	0.79	0.75
Hopa (TUR1)	58	18	8	0.58	0.84
Yenice (TUR2)	51	14	5	0.54	0.82
Kilis (TUR3)	43	6	4	0.41	0.80
Shahrake Jabrael (AFG1)	72	32	18	0.70	0.78
Behsud (AFG2)	70	33	10	0.66	0.91
Shahrake Mahdia (AFG3)	84	34	14	0.83	0.83
Chot Dheeran (PAK1)	37	13	14	0.34	0.79
Youhanabad (PAK2)	14	5	5	0.13	0.91
Keti Bandar (PAK3)	4	1	0	0.04	0.85
Total	55	17	19	0.53	0.85
Minimum	4	1	0	0.04	0.19
Maximum	100	34	59	0.99	0.93
N	12,959	12,919	12,919	12,973	12,973

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-d72-rashid-master-enr-2023-10-02.do.

Remittances

In the survey, households who indicated having a current migrant were subsequently asked ‘Has anyone who lives abroad sent money to you or anyone in your household during the past year?’ in survey item F9. For the analysis, we use a binary variable for all households who answered no or who were not asked because they did not know a current migrant. As such, it captures the entire sample across the research areas, with the exception of 54 missing values.

On average, across the 25 research areas, 19% of households received remittances in the year prior to participating in the survey. In this case, the highest share of remittance-receivers is in São Nicolau (CPV1) with 59%. Keti Bandar (PAK3) is again the lowest, with 0%.

Share of population acquainted with migrants

This variable is based on the summation of the current migrant variable at the research area level followed by a calculation of the share of people in a research area who know someone abroad. In this way, we accommodate for the fact that even if members of a household do not personally know someone abroad, they live in an area where others do know people abroad. Note that this variable is constant across all households in a research area. For regression analysis, therefore, we interact the share with different household variables (depending on the outcome being discussed) to generate intra-household variation in a research site. For education, we interact with the share of school-aged children and for civic participation we interact with number of adults aged 18 and above.

Fractionalisation index for direction of migration

We move beyond simple knowledge of migrants abroad by noting that acquaintances in different countries could present more opportunities for migration than if all acquaintances are in the same country. We explore this idea by constructing a measure to capture the diversity of destination countries.

The fractionalisation index is a well-known index that measures diversity. Often used in the context of ethnic diversity, it gives the probability that two people chosen randomly from a population belong to two different ethnic groups. In our context, we are interested in the probability that two people chosen randomly from a population will have acquaintances in two different countries. A possible drawback of this measure is that it treats different countries equally. For example, a research area with migrants in two countries with gender progressive norms will have the same fractionalisation index as a research area with similar migrant numbers in two different countries with less progressive norms.

We have been able to construct the fractionalisation index since the MIGNEX questionnaire asks respondents where their migrant acquaintances reside. In case these reside in more than one country, all countries are listed, and for this reason, the translation of the fractionalisation index in our context is not seamless. The fractionalisation index exactly measures probability if each respondent is associated with one country. We treat a person as two (three) observations if they know people in two (three) countries. So, the meaning of the index as a probability is not strictly true. But since higher values of the index imply a higher diversity, we can still use the index as a measure of diversity. The formula for the index is given below:

$$F_j = 1 - \sum_i s_{ij}^2$$

where F_j is the fractionalisation index for research area j and s_{ij} is the share of respondents who know acquaintances in country i .

Instrumental variables (IV)

Given the potential for endogeneity associated with the treatment and mediation variables (migration and norms/perceptions respectively), we

instrument for migration (recall that under the assumptions made in MA, we only need to instrument for migration). We therefore instrument for the five migration variables.

Existing literature often uses economic indicators such as gross domestic product (GDP) growth rates, oil prices and unemployment rates (McKenzie and Rappoport, 2007; Asatryan et al., 2017). We have followed a similar approach and have used a weighted average of the GDP growth rates in the destination countries. For each research site, we have computed the share of acquaintances that reside in each destination country and have used that share to weight the GDP growth rates of the destination country in 2021 (the year preceding the survey). We have also constructed a weighted unemployment rate in destination countries (in 2021). The data in both instances were taken from World Bank Economic Indicators.

The rationale for using economic variables in destination countries has an established pedigree (see McKenzie and Sasin (2007) for a detailed discussion and references). The basic premise is that economic conditions in destination countries represent shocks to labour demand and affect migration and remittances but not household welfare directly. For example, we found from Chot Dheeran (PAK1) that the construction boom in Spain provided an opportunity for young men to migrate there, but we expect that the boom, by itself, did not affect the schooling of girls in Chot Dheeran (PAK1), i.e., whatever effect the boom had on schooling occurred through either remittances or changes in norms (or another migration-related variable).

The requirement that changes in economic variables be meaningful, i.e., cause a change in migration or remittances, has both theoretical validity and can be tested empirically. For any given immigration regime, an increase in economic activity will increase the demand for labour, including migrant labour, by definition. But whether this happens in practice in our case is easily tested (and discussed in the Results section).

In our particular context, however, this is still not a perfect solution. Firstly, our migration variables do not contain information on when the migrant acquaintance actually migrated, while the economic data from destination countries has a clear time dimension. Economic data from 2021 would be irrelevant for those who migrated 20 years ago, and economic data from 20 years ago would only be weakly relevant for those migrating in 2021. The instrument is, however, expected to be better for remittances, since the MIGNEX remittance measure as well as the instrument pertain to the same time period (one year prior to the survey).

A second source of concern is that growth rates in different countries are treated equally, i.e., a growth rate of 5% in a gender liberal or more democratic country is treated the same way as a growth rate of 5% in a less progressive, less democratic country. But, if our analysis still finds that gender norms are becoming more liberal, this would be an underestimation of the true effect.

A third, and more serious, threat, however, arises from a possible selection by migrants of more liberal countries. If high-income countries have liberal values as well as high growth rates, and if people with a liberal outlook towards life self-select into those destinations, the instrument's exogeneity

assumption will be violated. As it happens, growth rates in the US, United Kingdom, France and Germany were indeed higher in 2021 than in Saudi Arabia and the United Arab Emirates. But we do not have evidence to suggest that migrants with more progressive ideas about gender are self-selecting into western countries. Our findings are primarily that people preferred western countries over Gulf countries because of the possibility of citizenship and not because of gender or democratic norms per se. By way of example, one of our key respondents in Chot Dheeran (PAK1), a migrant visiting from Spain, had relocated his family from Spain to the UK because he thought it was easier for his children to follow their religion in the UK. Nevertheless, we cannot completely deny the association between gender/political views at the individual level and destination selection.

Additionally, we use a separate instrument for fractionalisation. We constructed a fractionalisation index for each site based on the actual stock of migrants from the country in which the research area is located to the destinations that we find in the research area for the year 2000. Here, we used a measure for the year immediately prior to 2001 (given that events of the year possibly resulted in structural changes in migration streams). So, for example, the instrument for São Nicolau (CPV1) is a fractionalisation index calculated for stocks of migrants from Cabo Verde, in 2000, in all the destination countries that we found in our São Nicolau (CVP1) sample. The data on stocks were taken from the World Bank migration database.

Mediating variables (M)

As outlined above, we are interested in understanding the role of mediating variables through which migration has an indirect effect on outcomes of interest. The mediating variables are obviously specific to each outcome and are outlined below.

Mediating variable for girls' schooling: attitudes towards gender

The MIGNEX survey collected data on four gender-related attitudes – whether people believe that: (i) only men should be responsible for providing income (survey item A36), (ii) children suffer when women work (survey item A38), (iii) only women should be responsible for household chores (survey item A39), and (iv) education is more important for boys than girls (survey item A37). Data on each attitude were collected as a dummy variable which returned a 1 if the respondent agreed with the statement. We invert these codes so that a 1 implies a less gender-conservative attitude.

For secondary schooling, we use attitudes towards girls' education as the mediator. As shown in Table 4 below, which presents the variable before inversion, on average 19% of respondents thought that education was more important for boys. There was significant dispersion across research areas though, with only 1% in Boa Vista (CPV2) but 59% in Keti Bandar (PAK3) agreeing with this statement.

Table 4. Summary statistics, attitudes towards genderMIGNEX
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Research area	Only men responsible for earning (%)	Education more important for boys (%)	Children suffer when women work (%)	Only women responsible for chores (%)
São Nicolau (CPV1)	4	3	45	2
Boa Vista (CPV2)	4	1	47	1
Boffa (GIN1)	49	32	30	47
Dialakoro (GIN2)	58	38	19	59
Gbane (GHA1)	22	7	12	23
Golf City (GHA2)	9	4	38	6
New Takoradi (GHA3)	8	7	21	10
Down Quarters (NGA1)	21	11	16	13
Awe (NGA2)	48	26	28	22
Ekpoma (NGA3)	11	9	14	2
Batu (ETH2)	5	3	41	5
Moyale (ETH3)	26	12	73	21
Erigavo (SOM1)	49	23	69	32
Baidoa (SOM2)	62	15	68	22
Enfidha (TUN1)	72	12	78	20
Redeyef (TUN2)	68	18	58	22
Hopa (TUR1)	7	3	35	6
Yenice (TUR2)	16	14	48	24
Kilis (TUR3)	33	20	46	33
Shahrake Jabrael (AFG1)	29	18	68	32
Behsud (AFG2)	50	25	83	35
Shahrake Mahdia (AFG3)	28	10	78	20
Chot Dheeran (PAK1)	33	19	61	22
Youhanabad (PAK2)	29	36	80	20
Keti Bandar (PAK3)	81	59	69	52
Total	36	19	51	25
Minimum	4	1	12	1
Maximum	81	59	83	59
N	12,912	12,913	12,748	12,913

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-d72-rashid-Main-Master-2023-10-02.do.

Mediating variables for civic and political participation: perceptions of corruption and governance

The MIGNEX survey asked respondents how well they perceive the local and central government to be working (J11 and J12). Answers were recorded on a 10-item Likert scale with 1 being ‘terrible’ and 10 being ‘excellent’. For regression analysis, we converted each variable into a dummy variable that returned a 1 if the answer to the question above is less than 5 (less than median because there is significant mass at the median). A value of 1 implies that a person does not perceive the government to be doing a good job.

The question on corruption (J13) asked for an assessment of corruption in the research area and answers were recorded on a 3-item Likert scale with 1 being ‘not a problem at all’ and 3 being ‘a serious problem’. For regression

analysis, we converted this variable into a dummy variable that took a value of 1 if the respondent considers corruption to be a serious problem.

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It is immediately clear that there is very significant (and interesting) variation across sites. Yenice (TUR2) has the lowest score for local government with only 17% of respondents thinking that the local government is not doing a good job, while, interestingly, the lowest score for central government was not Yenice but Erigavo (SOM1) at 20%. Only 7% in Chot Dheeran (PAK1) think corruption is a serious problem, the lowest score. But 85% in Moyale (ETH3) think that corruption is a serious problem.

Table 5. Summary statistics, attitudes towards perceptions of governance

Research area	Local government not doing a good job (%)	Central government not doing a good job (%)	Perceptions of Corruption (%)
São Nicolau (CPV1)	46	40	29
Boa Vista (CPV2)	51	46	48
Boffa (GIN1)	59	55	80
Dialakoro (GIN2)	72	54	38
Gbane (GHA1)	69	59	47
Golf City (GHA2)	73	29	22
New Takoradi (GHA3)	46	26	35
Down Quarters (NGA1)	90	75	63
Awe (NGA2)	62	54	53
Ekpoma (NGA3)	87	89	68
Batu (ETH2)	34	23	65
Moyale (ETH3)	60	38	85
Erigavo (SOM1)	26	20	38
Baidoa (SOM2)	45	20	65
Enfidha (TUN1)	53	77	79
Redeyef (TUN2)	60	77	79
Hopa (TUR1)	53	58	46
Yenice (TUR2)	17	36	12
Kilis (TUR3)	35	21	53
Shahrake Jabrael (AFG1)	42	63	58
Behsud (AFG2)	35	24	69
Shahrake Mahdia (AFG3)	77	77	54
Chot Dheeran (PAK1)	49	53	7
Youhanabad (PAK2)	37	40	46
Keti Bandar (PAK3)	43	60	31
Total	52	46	51
Minimum	17	20	7
Maximum	90	89	85
N	12,780	12,772	11,737

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-d72-rashid-Main-Master-2023-10-02.do.

Control variables (X)

We also account for other characteristics at the individual and research area level that could have an effect on our different development outcomes and

composite measure. In this section, we describe the control variables used in the analysis, including its operationalisation, when applicable, and summary statistics.

Individual-level controls

For consistency, we include the same set of control variables for all regression models. The characteristics we control for at the individual level (answered by the survey respondents) include:

- Gender
- Age
- Cohabital status
- Household size
- Female-headed household
- Dependency ratio
- Linguistic minority status
- Respondent is working
- Life satisfaction
- COVID-19 impact
- Environmental problems
- Household owns land
- Earning a living and feeding a family is easy or manageable in research area
- Educational attainment of parents

Table 6 presents descriptive statistics for these 15 individual-level characteristics, including the mean value by research area, and the mean, minimum and maximum values across the 25 research areas of analysis. We describe the operationalisation process of each variable and descriptive statistics separately.

Table 6. Summary statistics, individual-level controlsMIGNEX
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Research area	Respondent is female	Age	Is married or cohabiting	Household size	Head of household is female	Dependency ratio
	%	Mean	%	Mean	%	Mean
São Nicolau (CPV1)	55	28	31	5.5	51	0.6
Boa Vista (CPV2)	60	29	49	4.4	40	0.7
Boffa (GIN1)	43	26	49	12.4	11	0.7
Dialakoro (GIN2)	38	28	90	29.0	8	1.0
Gbane (GHA1)	58	26	75	7.8	12	0.9
Golf City (GHA2)	42	28	34	6.5	22	0.5
New Takoradi (GHA3)	59	27	32	5.8	35	0.6
Down Quarters (NGA1)	45	27	34	6.0	12	0.6
Awe (NGA2)	54	28	65	8.3	10	0.7
Ekpoma (NGA3)	56	25	24	5.0	30	0.3
Batu (ETH2)	43	27	64	5.6	27	0.7
Moyale (ETH3)	63	27	73	6.0	22	0.9
Erigavo (SOM1)	73	25	46	7.8	31	0.9
Baidoa (SOM2)	63	28	70	8.4	20	1.1
Enfidha (TUN1)	48	26	26	4.9	19	0.3
Redeyef (TUN2)	49	28	24	4.9	16	0.3
Hopa (TUR1)	48	27	34	4.2	14	0.3
Yenice (TUR2)	53	28	51	4.1	12	0.4
Kilis (TUR3)	54	28	64	5.6	11	1.0
Shahrake Jabrael (AFG1)	64	27	70	6.8	13	0.8
Behsud (AFG2)	41	26	53	13.3	3	1.1
Shahrake Mahdia (AFG3)	57	27	59	7.2	8	0.8
Chot Dheeran (PAK1)	77	28	63	6.2	8	0.6
Youhanabad (PAK2)	42	27	58	7.1	4	0.5
Keti Bandar (PAK3)	34	29	72	8.2	19	0.8
Total	53	27	52	7.6	18	0.7
Minimum	34	25	24	4.1	3	0.30
Maximum	77	29	90	29.0	51	1.10
N	12,973	12,970	12,969	12,973	12,950	12,973

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-desc-d071-marcela-v1-2023-10-19.do.

Table 6: Summary statistics, individual-level controls (continued)MIGNEX
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Research area	Linguistic minority status	None / no formal education	Incomplete or complete primary	Lower or upper secondary	Tertiary education	Respondent is working
	%	%	%	%	%	%
São Nicolau (CPV1)	2	0	39	49	12	56
Boa Vista (CPV2)	14	1	24	69	7	58
Boffa (GIN1)	37	33	33	27	8	61
Dialakoro (GIN2)	9	71	15	11	4	82
Gbane (GHA1)	36	25	34	34	6	57
Golf City (GHA2)	71	2	3	68	26	67
New Takoradi (GHA3)	36	2	9	67	21	55
Down Quarters (NGA1)	58	1	6	66	27	67
Awe (NGA2)	34	14	21	53	12	73
Ekpoma (NGA3)	58	0	3	69	28	46
Batu (ETH2)	53	4	25	43	28	66
Moyale (ETH3)	50	35	31	24	10	44
Erigavo (SOM1)	3	23	7	44	26	28
Baidoa (SOM2)	4	46	14	30	9	40
Enfidha (TUN1)	2	0	5	69	26	39
Redeyef (TUN2)	0	1	6	65	27	36
Hopa (TUR1)	22	0	5	57	38	52
Yenice (TUR2)	1	0	14	55	30	61
Kilis (TUR3)	49	7	16	63	13	43
Shahrake Jabrael (AFG1)	5	29	15	43	13	35
Behsud (AFG2)	39	47	6	33	14	45
Shahrake Mahdia (AFG3)	0	31	18	32	18	38
Chot Dheeran (PAK1)	9	40	28	26	6	26
Youhanabad (PAK2)	35	15	33	42	10	51
Keti Bandar (PAK3)	2	57	24	14	5	80
Total	25	19	17	46	17	52
Minimum	0	0	3	11	4	26

Maximum	71	71	39	69	38	82
N	12,972	12,967	12,967	12,967	12,967	12,967

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Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-desc-d071-marcela-v1-2023-10-19.do.

Table 6: Summary statistics, individual-level controls (continued)

Research area	Respondent has high level of life satisfaction	Household negatively affected by COVID	Household affected by an environmental problem (past 5 years)	Anyone in the household receives support from at least one of the SP programmes	Earning a living and feeding a family is easy or manageable in RA
	%	%	%	%	%
São Nicolau (CPV1)	76	3	68	32	29
Boa Vista (CPV2)	71	4	58	18	24
Boffa (GIN1)	41	63	74	27	18
Dialakoro (GIN2)	20	33	68	13	49
Gbane (GHA1)	38	1	94	84	36
Golf City (GHA2)	63	1	54	77	63
New Takoradi (GHA3)	66	1	24	78	48
Down Quarters (NGA1)	24	33	26	14	46
Awe (NGA2)	42	43	46	47	52
Ekpoma (NGA3)	31	40	26	5	46
Batu (ETH2)	61	33	30	52	32
Moyale (ETH3)	44	66	66	32	30
Erigavo (SOM1)	90	24	46	7	68
Baidoa (SOM2)	55	35	62	9	56
Enfidha (TUN1)	65	37	21	35	47
Redeyef (TUN2)	67	35	62	11	39
Hopa (TUR1)	71	52	63	17	67
Yenice (TUR2)	82	38	32	21	78
Kilis (TUR3)	62	57	16	50	26
Shahrake Jabrael (AFG1)	63	84	67	6	16
Behsud (AFG2)	62	89	54	12	10
Shahrake Mahdia (AFG3)	65	88	85	1	11
Chot Dheeran (PAK1)	66	31	13	15	50
Youhanabad (PAK2)	71	30	6	20	47
Keti Bandar (PAK3)	72	26	81	57	24

Total	59	38	50	30	40
Minimum	20	1	6	1	10
Maximum	90	89	94	84	78
N	12,943	12,939	12,973	12,973	12,926

MIGNEX
Background
Paper

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-desc-d071-marcela-v1-2023-10-19.do.

Table 6: Summary statistics, individual-level controls (continued)

Research area	Father completed secondary	Father completed primary only	Father did not complete primary	Mother completed secondary	Mother completed primary only	Mother did not complete primary
	%	%	%	%	%	%
São Nicolau (CPV1)	5	36	36	4	32	53
Boa Vista (CPV2)	7	25	28	5	28	44
Boffa (GIN1)	14	13	73	3	8	88
Dialakoro (GIN2)	5	9	86	1	4	94
Gbane (GHA1)	9	6	80	3	5	90
Golf City (GHA2)	57	17	15	39	27	27
New Takoradi (GHA3)	53	18	12	30	34	26
Down Quarters (NGA1)	58	13	25	42	12	42
Awe (NGA2)	42	15	40	20	14	63
Ekpoma (NGA3)	68	15	10	53	20	21
Batu (ETH2)	20	17	60	10	11	79
Moyale (ETH3)	13	10	76	4	6	90
Erigavo (SOM1)	21	12	60	9	10	76
Baidoa (SOM2)	17	7	74	11	5	83
Enfidha (TUN1)	32	34	26	19	32	45
Redeyef (TUN2)	18	34	46	9	30	60
Hopa (TUR1)	34	58	6	20	64	14
Yenice (TUR2)	26	68	5	12	79	8
Kilis (TUR3)	15	52	28	5	39	52
Shahrake Jabrael (AFG1)	9	14	77	3	5	92
Behsud (AFG2)	28	3	68	3	2	96

Shahrake Mahdia (AFG3)	8	13	79	1	2	97
Chot Dheeran (PAK1)	10	17	72	1	6	92
Youhanabad (PAK2)	18	14	68	11	10	79
Keti Bandar (PAK3)	6	18	73	1	2	95
Total	24	22	49	13	20	64
Minimum	5	3	5	1	2	8
Maximum	68	68	86	53	79	97
N	12,223	12,223	12,223	12,967	12,967	12,967

MIGNEX
Background
Paper

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-desc-d071-marcela-v1-2023-10-19.do.

Gender

As Table 6 shows, across our 25 research areas of study, 52% of respondents are female, but this proportion varies by research area. For instance, in Keti Bandar (PAK3), only 34% of respondents are women while in Chot Dheeran (PAK1), 77% are female respondents. These two extremes happen to represent the minimum and maximum proportions of female young adults across all research areas. In other research areas such as Gbane in Ghana (GHA1), Awe (NGA2) and Ekpoma (NGA3) in Nigeria, Redeyef in Tunisia (TUN2), Yenice (TUR2) and Kilis (TUR3) in Turkey, the sample has a greater gender balance, with half of respondents of each gender.

Age

Our survey focuses on young adults between the ages of 18 to 39 years to shed further light on the dynamics and processes shaping migration aspirations for a group that is the most likely to possess migration aspirations and effectively migrate. The restriction of our sample to a specific age range comes with the caveat that it is possible that we do not observe much variation in its effect given this range is when migration aspirations tend to be highest.

Age is captured in survey item A1, 'How old are you?', and is recorded as a continuous variable that ranges from 18 to 39.

In our analysis, we employ age directly as a continuous variable and add its square form. By also including the square value of age, we can model more accurately the effect of age on our dependent variable of interest, which may not have a linear relationship. For instance, age could have a positive effect on our dependent variable until a specific age threshold and this relationship can become negative thereafter. Age is a mandatory survey item, hence there are no missing values for this variable.

Table 6 shows that respondents across our 25 research areas are on average 27 years old. There is very little age variation by research area, where the average age of respondents ranges from 25 years old in Erigavo (SOM1) to 29 years old in Boa Vista (CPV2) and Keti Bandar (PAK3).

Is married or cohabits

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In this analysis, we employ a binary measure of marital or cohabitational status based on survey item A2, 'Are you married, or living together with a partner as if married?', where 1 corresponds to 'Yes' and 0 refers to 'No'.

Across all 25 research areas, around half of respondents (52%) indicated they are married or cohabiting, while the rest are single (either never married or divorced or widowed), as shown in Table 6. There is quite some variation in marital/cohabitational status by research area. In around six research areas, between 70% and 90% of respondents are married or cohabiting, including in Dialakoro (GIN2), Gbane (GHA1), Moyale (ETH3), Baidoa (SOM2), Shahrake Jabrael (AFG1) and Keti Bandar (PAK3). Conversely, the lowest proportions, at 35% or less of respondents who are married or cohabiting, can be found in Ekpoma (NGA3), Enfidha (TUN1), Redeyef (TUN2), São Nicolau (CPV1), Golf City (GHA2), New Takoradi (GHA3), Down Quarters (NGA1) and Hopa (TUR1). These differences in proportions of marital status across research area could lead to differing effects on migration aspirations, which are more easily observed in the research area-specific analysis.

Household size

The number of household members can determine how resources are redistributed within households, which, in turn, can influence development outcomes. We estimate household size as the summation of the following three survey items:

- A13, 'Let's talk about the adults in your household. How many men aged 18 years or over live in your household?'
- A15, 'How many women aged 18 years or over live in your household?'
- A17, 'Now let's talk about the children in your household. How many children aged 17 years or younger live in the household?'

As Table 6 shows, there is quite some variation in the average number of household members across research areas. Across the 25 research areas, respondents live in households with 7.6 members on average. For instance, in Dialakoro (GIN2), the average household size is of 29 members. There is also one extreme value in this research area where the respondent lives in a household conformed of 68 members. Other research areas with large household sizes include Behsud (AFG2) with 13.3 members and Boffa (GIN1) with 12.4 members, on average. Conversely, Yenice (TUR2) and Hopa (TUR1) exhibit the smallest household sizes with 4.1 and 4.2 members, respectively, on average.

Female-headed households

We constructed a binary measure that captures whether the household head is female, employing the following two survey items and the respondent's gender:

- A11, 'Are you the head of the household?'
- A12, 'Is the head of household...', where the options are 'Male' or 'Female'.

We identify whether the head of the household is female by combining the responses to survey item A12 'Female' to where the respondent is the head of the household in item A11.

Across the 25 research areas, less than one fifth of respondents (18%) live in female-headed households, as depicted in Table 6. This proportion is lower than 20% across most research areas, and it reaches extremely low values in Behsud (AFG2) (3%) and Youhanabad (PAK2) (4%). On the other hand, the proportion of female-headed households is the highest in both research areas in Cabo Verde, where 51% and 40% of respondents live in female-headed households in São Nicolau (CPV1) and Boa Vista (CPV2), respectively.

Dependency ratio

The dependency ratio allows us to measure the level of pressure that exists between those who are not in the labour force to those who are in the labour force. In other words, it allows us to measure the level of dependence on the productive population. For the purpose of this analysis, we estimate the dependency ratio as the relation between the number of children aged 17 and under to the total number of adults aged 18 and above in the household.

On average, respondents across all 25 research areas in our analysis exhibit a relatively low dependency ratio of 0.7, as shown in Table 6. Baidoa (SOM2), Behsud (AFG2), Kilis (TUR3) and Dialakoro (GIN2) exhibit the highest dependency ratios between 1 and 1.1. In some research areas, there are a few respondents with extreme dependency ratios such as 17 in Batu (ETH2), 5.33 in Yenice (TUR2) and 5.25 in New Takoradi (GHA3). These extreme values are caused by the presence of a high number of children in some households. Conversely, Ekpoma (NGA3), Enfidha (TUN1), Redeyef (TUN2), and Hopa (TUR3) exhibit the lowest dependency ratios of 0.3.

Linguistic minority status

In order to measure minority group identification between individuals within each research area, we created a composite measure of linguistic minority status at the individual level, by research area. We have constructed this measure based on the following survey item: 'When you were a child, what language did you speak at home with your parents?'. Respondents could provide multiple responses and were prompted to choose from a preselected list of languages relevant for each research area. For instance, in the case of the three research areas in Afghanistan, the options provided are Dari and Pashto, whereas in the three research areas in Ghana there were 19 options provided.³

The original variable was automatically generated as a 'string' variable with multiple codes to capture the different responses of languages spoken as a child. In the process of operationalising this survey item, we created a dichotomous variable for each language spoken as a child which equals 1 if the respondent spoke any given language and 0 if the respondent did not

³ A key objective of the MIGNEX survey is to ensure comparability across research areas and countries, but tailoring some questions was necessary. This survey item is one of the eight items that were tailored for each research area (Hagen-Zanker et al., 2023).

speak the language in that specific research area or if that language was not applicable for that specific research area. In the case of ‘Don’t know’, ‘Refuse to answer’ and ‘Other language’, we recorded these responses under separate dummy variables, whereas the number of missing values is negligible, accounting for less than five observations.

In total, we have 72 dummy variables representing all languages spoken as a child across the 25 research areas. The maximum number of languages spoken on average in each research area by respondents ranges from two languages in Dialakoro (GIN2) to five languages in Hopa (TUR1) and Golf City (GHA2).

The linguistic minority status measure is estimated by obtaining the average of the shares of all languages spoken as a child by each respondent, within each research area. The higher the average of shares of languages spoken, the higher the likelihood that a respondent spoke the mostly widely spoken language in the research area, and, in turn, the higher the likelihood they belong to a linguistic majority group. We then subtracted this average from 1 to obtain the degree to which a respondent is part of a linguistic minority.

The linguistic minority status is a continuous variable that ranges from 0.002 to 1 and shows whether respondents are part of a linguistic minority given the research area’s level of language heterogeneity. Table 6 shows that, on average, a quarter of respondents across the 25 research areas of analysis belong to a linguistic minority group. When we zoom in to specific research areas, we observe the highest linguistic minority status indices in Golf City (GHA2) where 71.4% of respondents exhibit a linguistic minority status, followed by Down Quarters (NGA1), Ekpoma (NGA3), Batu (ETH2) and Moyale (ETH3) where between 50% and 60% of respondents have a linguistic minority status. Conversely, nine research areas exhibit average linguistic minority status indices lower than 5%, including São Nicolau (CPV1), Erigavo (SOM1), Baidoa (SOM2), Enfidha (TUN1), Redeyef (TUN2), Yenice (TUR2), Shahrake Jabrael (AFG1), Shahrake Mahdia (AFG3) and Keti Bandar (PAK3). This reflects high homogeneity in terms of languages spoken in those research areas.

Educational attainment

We include a measure of educational attainment by constructing a categorical variable capturing four broad levels of education. This measure is based on the survey item ‘What is the highest level of formal education you have completed?’. The response options for this survey item are the following:

- 0 Quranic recitation
- 1 None/no formal education
- 2 Religious schooling only
- 3 Primary school (started without completing)
- 4 Primary school (completed)
- 5 Lower/junior secondary
- 6 Upper/senior secondary
- 7 Tertiary (Bachelors)
- 8 Tertiary (Masters)

- 9 Tertiary (PhD)
- 10 (Other) Vocational school
- 11 (Other) Polytechnic
- 12 (Other) 14th class degree
- 999 Other

We allocate respondents under four categories as follows:

1. None/no formal education: this category corresponds to young adults who have achieved '0 Quranic Recitation'; '1 None/no formal education'; '2 Religious schooling only'; or '999 Other'.
2. Incomplete or complete primary: this category corresponds to young adults who have achieved '3 Primary school (started without completing)' or '4 Primary school (completed)'.
3. Lower or upper secondary: this category corresponds to young adults who have achieved '5 Lower/junior secondary' or '6 Upper/senior secondary'.
4. Tertiary: this last category corresponds to young adults who have achieved '7 Tertiary (Bachelors)'; '8 Tertiary (Masters)'; '9 Tertiary (PhD)'; '10 (Other) Vocational school'; '11 (Other) Polytechnic'; or '12 (Other) 14th class degree'.

As displayed in Table 6, nearly half of young adults (46%) across the 25 research areas have achieved lower or upper secondary education. This is followed by one fifth (19%) who have none or no formal education and 17% who have incomplete/complete primary or tertiary education. When zooming into each research area, there is some variation in terms of the proportion of respondents that fall into each of these categories. Some extreme-value research areas include Dialakoro (GIN2) and Keti Bandar (PAK3), where 71% and 57% of young adults, respectively, have none or no formal education. Conversely, for several other research areas including Enfidha (TUN1), Golf City (GHA2), Boa Vista (CPV2), Ekpoma (NGA3), New Takorari (GHA3), Redeyef (TUN2), Down Quarters (NGA1) and Kilis (TUR3), over 60% of young adults have achieved lower or upper secondary education.

Educational attainment of parents

For the regressions where the outcome variable is girls' enrolment, we include a measure of the educational attainment of the respondent's parents. This is not a clean measure that maps the child whose enrolment is being studied to the parent of the child. Where the child is the respondent's child, this variable will reflect the grandparent's education. Where the child is the respondent's sibling, it will reflect the child's parent's education. Since the variable still does contain some intergeneration information, we decided to retain it despite its shortcomings.

The MIGNEX survey recorded three responses:

- Did not complete primary school
- Completed primary school but not secondary school

– Completed primary but not secondary school

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Additionally, a significant number of respondents did not actually know their parents' education. For fathers, the number of observations is 12,223 and for mothers it is 12,967.

As displayed in Table 6, there is much more variation in the parents' generation than in the younger generation. The lowest rate for secondary education for fathers is 5% (for Dialakoro (GIN2) and Sao Nicolau (CPV1)) and it is even lower for mothers at 1% (in Keti Bandar (PAK 2)).

Respondent is working

We constructed a binary measure of whether the respondent is working or not by employing survey item B2, 'What is your own current work situation? Are you...?', where the response options are:

1. Employed and receive a salary
2. Farming, fishing, rearing animals
3. Working on your own account running a business
4. Studying
5. Unemployed
6. Not working because of long-term sickness disability
7. Unpaid housework, looking after children/other persons
8. Casual work
9. (Other) Volunteer
10. (Other) Apprenticeship

We created a dichotomous variable that equals 1 if respondents selected response options '1. Employed and receive a salary', '2. Farming, fishing, rearing animals', '3. Working on your own account running a business', or '8. Casual work', and '0' otherwise. We also consider 'Don't know' and 'Refuse to answer' responses, which account for only 14 and 2 responses out of the total sample, respectively.

Table 6 displays the proportion of respondents who are working. Over half of young adults (52%) across the 25 research areas are working, and we observe large differences in working status by research area. Three research areas stand out as those with the highest proportions of respondents who are working, Dialakoro (GIN2) with 82%, Keti Bandar (PAK3) with 80% and Awe (NGA2) with 73%. On the other hand, Chot Dheeran (PAK1) and Erigavo (SOM1) exhibit low proportions of young adults who are working, of only 26% and 28%, respectively.

Life satisfaction

Life satisfaction includes factors that are specific to individuals and to the environment in which they live. It captures a wide range of both subjective and objective factors. We measure overall life satisfaction by employing survey item B17, 'All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied", where would you put your satisfaction with life as a whole?'. Respondents were elicited to

select their level of overall life satisfaction between 1 and 10. We operationalise this survey item by creating a binary variable measuring whether respondents exhibit a high or low level of life satisfaction. More specifically, we created a binary variable that equals 1 if respondents indicated under survey item B17 that their level of life satisfaction is between 5 and 10, and 0 if their level of satisfaction is between 1 and 4.

On average, 59% of respondents across the 25 research areas exhibit a high level of life satisfaction, as shown in Table 6. There is quite some variation around average levels of life satisfaction by research area. Erigavo (SOM1) is the research area where respondents exhibit the highest level of life satisfaction, at 90%, followed by Yenice (TUR2) at 82% and São Nicolau (CPV1) at 76%. On the other hand, respondents in Down Quarters (NGA1) and Ekpoma (NGA3) present the lowest levels of life satisfaction with only 24% and 31%, respectively, indicating that they have high levels of life satisfaction.

COVID-19 impact

The MIGNEX survey incorporates five items to capture the impact of COVID-19, including experiencing serious illness due to the virus and experiencing restrictions imposed by governments. We operationalise the effect of COVID-19 on migration aspirations by constructing a dichotomous variable that focuses on ill-health and severe hardships experienced within households due to COVID-19.

We rely on two survey items to construct our measure. Survey item D11 asks those respondents who were aware of COVID-19 ‘Have you or others in your household been seriously ill from the virus?’, where the response options are ‘Yes’ and ‘No’. The second survey item, D12, further asks those who were aware of the virus and experienced some form of government restrictions ‘How would you say that these measures affected you and your household? Did they...’; where the response options are ‘a. Cause severe hardship’, ‘b. Cause some difficulties’ or ‘c. Not make much difference?’.

Our measure of COVID-19 impacts captures whether a household was severely affected by the virus, and t equals 1 in two cases:

- if the interviewee responded ‘Yes’ to D11, so they or someone in the household has been seriously ill from the virus
- if the respondent indicated ‘Cause severe hardship’ to D12

The rest of the respondents are classified under the category 0, referring to those whose household was not negatively affected by COVID-19, including those who were not aware of the virus or government restrictions. In cases where respondents indicated ‘Don’t know’ or ‘Refuse to answer’ to one or both survey items, these cases were coded as missing values. The number of missing values is low at 34 cases across the entire sample.

The proportion of households who were severely affected by COVID-19 varies substantially across research areas, as shown in Table 6. On average, 38% of young adults across all research areas were negatively impacted by COVID-19, but this proportion ranges from 1% in Golf City (GHA2) to 89% in Behsud (AFG2). Interestingly, in most cases, the percentage of households

that were negatively affected by COVID-19 is very similar for all research areas within most countries including Cabo Verde, Ghana, Nigeria, Somalia, Tunisia, Afghanistan and Pakistan. This likely reflects restrictions implemented at the national level to contain the virus and its incidence impacting most areas in a similar way. In contrast, the different research areas within Turkey, Ethiopia and Guinea exhibit very different levels of severe COVID-19 impact.

Environmental problems

We assess whether exposure to environmental problems affects well-being in the 25 research areas, where some have experienced recent severe environmental problems. The 'Environmental issues' module of the MIGNEX survey includes a set of items that elicit information on experiencing different environmental problems and their impact on household's livelihoods and income. We constructed a binary variable that captures different forms of environmental problems the respondents' households may have experienced in the last five years. We employ the following four survey items:

- L1, 'In the last five years, has your household been affected by droughts?'
- L2, 'Has it been affected by floods?'
- L3, 'Has it been affected by soil degradation?'
- L4, 'And has it been affected by crop or livestock disease?'

The response options are 'Yes' or 'No' for each of these four survey items. We then constructed a measure of environmental problem at the household level, which equals 1 if the respondent has been affected by at least one of these four problems (droughts, floods, degradation or livestock disease), and 0 if otherwise. This complements the 'Environmental hazards and degradation index' at the research-area level, part of the root causes analysis.

As Table 6 shows, half (50%) of respondents' households have experienced some form of environmental problem and there is a large variation between research areas. Strikingly, in Gbane (GHA1), the large majority of young adults, 94%, reported having experienced some form of environmental problem. In Gbane, severe environmental degradation, including frequent droughts and water pollution, are having an increasingly negative impact on agricultural production and livelihoods (Godin et al., 2022). In other research areas, including Shahrake Mahdia (AFG3), Keti Bandar (PAK3) and Boffa (GIN1), the proportion of respondents reporting environmental problems is at similarly high levels, between 70% and 85%. These high levels of environmental problems are evident for instance in Keti Bandar, where problems of land erosion, rising sea levels and severe lack of water for agriculture have been impacting this research area (Erdal et al., 2022). On the other hand, less than 20% of young adults in Youhanabad (PAK2), Chot Dheeran (PAK1) and Kilis (TUR3) reported having experienced environmental problems.

Table 7. Social protection programmes by country

Country	Social protection programme
Afghanistan	Government Pension Scheme Martyrs and Disabled Pension Programme
Cabo Verde	Compulsory social protection Social Pension Social Inclusion Income
Ethiopia	<i>Idir</i> <i>Ekub</i> <i>Salaq</i> Community based health
Ghana	National Health Insurance Scheme (NHIS) Livelihood Empowerment Against Poverty (LEAP) School Feeding Programme Social Security and National Insurance Trust (SSNIT)
Guinea	<i>Cantines Scolaires</i> National Social Security Fund
Nigeria	Home Grown School Feeding Programme National Cash Transfer Programme Government Enterprise and Empowerment N-POWER Programme
Pakistan	Benzir Income Support Programme Ehsaas Emergency Cash Transfer/ <i>Kafaalat</i>
Somalia	Shock-Responsive Safety Net for Human Capital
Tunisia	CNAM (National Health Insurance Fund) PNAFN (Assistance Programme for Needy Families, Elderly and Disabled) CNSS (National Social Security Fund) CNRPS (National Pension and Social Insurance Fund)
Turkey	Needs-based aid (pension for the disabled, orphans, widows and elderly) ISKUR Short Term Employment Allowance/Unemployment Benefit Housing-Food aid (housing, coal, electricity, food, soup kitchen) Conditional cash transfer for education Red Crescent Card (ESSN) United Nations Children's Fund (UNICEF) Education Aid

Social protection programmes

Social protection coverage is relatively low across all research areas with only 30% of respondents indicating that someone within their household benefits from some social protection programme. However, access varies substantially by research area and within countries, as shown in Table 7. The research area with the highest social protection coverage, as shown in Table 6, is Gbane (GHA1) at 84%; whereas Shahrake Mahdia (AFG3) has the lowest coverage at 1%. Some research areas located in the same country exhibit similar coverage rates, as is the case for the three research areas in Ghana, all exhibiting rates between 77% and 84%. These rates look high for a lower-income country, but they are likely the result of increasing coverage of the National Health Insurance Scheme (Ly et al., 2022) and the School Feeding Programme (Bedasso and Nagesh, 2022). However, in other instances, other research areas located in the same country exhibit very different coverage

rates such is the case of Nigeria where coverage rates vary from 1% in Shahrake Mahdia (AFG3) to 84% in Gbane (GHA1), with the latter research area being included in a national cash transfer programme that is rolled out progressively (Genyi et al., 2022). Hence, there is a lot of heterogeneity in terms of social protection coverage across research areas and within countries.

Earning a living and feeding a family is easy or manageable

We use the perception of the respondents on whether it is easy or manageable to earn a living and feed a family in the research area to assess the subjective assessment of livelihood opportunities. Survey item B6 asks respondents about whether they find it ‘easy’, ‘manageable’ or ‘difficult’ to earn a living and feed a family. Based on this variable, we created a dummy that distinguishes between those who find it ‘easy’ or ‘manageable’ and those who do not.

Across the 25 research areas, 40% of the respondents indicated that they find it ‘easy’ or ‘manageable’ to earn a living and feed a family. There are differences across the research areas though. For example, in Behsud (AFG2) and Shahrake Mahdia (AFG3), only 10% and 11% of the respondents indicated this, while in Yenice (TUR2), 78% did so.

Research area-level controls

At the research area level, we control for linguistic fractionalisation.

Table 8 presents descriptive statistics for the research area-level characteristics, including the mean value by research area, and the mean, minimum and maximum values across the 25 research areas of analysis. We describe the operationalisation process of each variable and descriptive statistics separately.

Linguistic fractionalisation

We have created a measure of linguistic fractionalisation as a proxy for ethnic fractionalisation within each research area following the methodology employed by Easterly and Levine (1997) and Alesina et al. (2003). Using the 1964 Atlas Narodov Mira dataset (Bruk and Apenchenko, 1964), Easterly and Levine (1997) create a measure of Ethno-Linguistic Fractionalisation (ELF), which is measured as 1 minus the Herfindahl concentration index of ethnolinguistic group shares. The Herfindahl concentration index is a measure of market concentration estimated by summing the squares of the market shares in any given industry (Herfindahl, 1950). Alesina et al. (2003) take this methodology a step forward by distinguishing between ethnic, linguistic and religious diversity and creating separate indices for each. The ELF constructed by these studies takes the following form:

$$ELF = 1 - \sum_i s_i^2$$

where s_i is the share of group i over the total population.

The MIGNEX survey data do not include information on ethnic background, so we have constructed a measure that focuses on linguistic fractionalisation and use it as a proxy of ethnic fractionalisation. More specifically, our index of linguistic fractionalisation measures the probability that two randomly selected people from a research area belong to different linguistic groups. The higher the index, the more linguistically heterogeneous or fractionalised any given research area is.

We have constructed the index based on the following survey item: A5, ‘When you were a child, what language did you speak at home with your parents?’. As mentioned previously, the languages spoken as children are tailored for each country and we ended up with 72 dichotomous variables representing all languages spoken across the 25 research areas. For further details on the operationalisation of this survey item from a string variable to dichotomous variables for each language spoken, refer to the Linguistic minority status discussion above.

The linguistic fractionalisation index at the research area level is estimated in four steps:

1. By research area, we estimate the number of respondents speaking each language as a child.
2. We then estimate the probability of speaking each language (s_i), or language share within the research area, by dividing the total number of respondents who speak each language (1) by the total number of respondents of that research area (2).
3. We estimate the square of all language shares.
4. Finally, we compute the linguistic fractionalisation index (LF) as:

$$LF = 1 - \sum_i s_i^2$$

In some cases, respondents spoke more than one language as a child, and this results in the sum of shares squared being greater than 1. Once subtracted from 1, this can lead to a negative value. For greater analytical interpretation and consistency with other indices, we have rescaled the fractionalisation index so that it ranges from 0.01 to 1 or 1% to 100% once converted to percentages. The higher the index, the more linguistically diverse are young adults residing within each research area and the more linguistically fractionalised any given research area is.

As shown in Table 8, on average, the linguistic fractionalisation index shows that the probability that two randomly selected people from a research area belong to different linguistic groups is 41%. The index value varies substantially by research area. For instance, Hopa (TUR1) exhibits an index of 0%, meaning that all young adults in this research area are linguistically homogenous and speak the same language. Erigavo (SOM1), Enfidha (TUN1), Redeyef (TUN2), Yenice (TUR2) and Shahrake Mahdia (AFG3) also exhibit low linguistic fractionalisation indices below 15%. Conversely, Golf City (GHA2) shows the exact opposite trend as Hopa (TUR1) with an index of 100%, showing that there is high linguistic heterogeneity in the research area and the probability of selecting two individuals who speak a different language is technically 100%. Other areas with high linguistic fractionalisation indices

include Batu (ETH2), Kilis (TUR3), Down Quarters (NGA1) and Boffa (GIN1) which exhibit indices higher than 70%.

Table 8. Summary statistics, research area-level controls

Research area	Linguistic fractionalisation (%)
São Nicolau (CPV1)	15
Boa Vista (CPV2)	34
Boffa (GIN1)	71
Dialakoro (GIN2)	29
Gbane (GHA1)	59
Golf City (GHA2)	100
New Takoradi (GHA3)	53
Down Quarters (NGA1)	74
Awe (NGA2)	50
Ekpoma (NGA3)	62
Batu (ETH2)	84
Moyale (ETH3)	68
Erigavo (SOM1)	13
Baidoa (SOM2)	16
Enfidha (TUN1)	15
Redeyef (TUN2)	14
Hopa (TUR1)	0
Yenice (TUR2)	14
Kilis (TUR3)	79
Shahrake Jabrael (AFG1)	21
Behsud (AFG2)	62
Shahrake Mahdia (AFG3)	14
Chot Dheeran (PAK1)	23
Youhanabad (PAK2)	35
Keti Bandar (PAK3)	17
Total	41
Minimum	0
Maximum	100
N	12,973

Data source: MIGNEX survey dataset (restricted variant, v1).

Notes: Data are weighted to reflect the survey design. Specifications: mxs-desc-d071-marcela-v1-2023-10-19.do.

Results: the indirect effect of migration

In this section we first discuss the findings for the analysis on the demonstration effect of migration, followed by the analysis on the mediating effects.

Demonstration effects of migration

As discussed above, we define demonstration effects essentially as the effect of a stock of migrants in an area on specific outcomes for an average household (which can be a migrant or non-migrant household).

We have calculated two variables to capture different characteristics of these migrant stocks: i) the ‘share of migrants’ to capture size, and ii) ‘fractionalisation of destination’ to capture diversity of experience.

Since both variables are calculated for a given research area, all the households in that given area would have the same value of these variables. To generate inter-household variation – which we need to be able to run regressions – we therefore interacted the migration variables with the number of adults (18 years and above) in a household. The basic premise behind this interaction is that each household will be affected by the stock variables to different extents. The higher the number of adults, the higher the potential impact. The downside of this approach is that we are unable to conduct additional analysis at the research area level; we instead focus on the pooled regression results.

Table 9 presents results for the pooled sample. The top panel presents the coefficient on ‘share of migrants’ for the OLS/LPM (linear probability model) and 2SLS models. The bottom panel presents the coefficient on fractionalisation for (independent) OLS and 2SLS specifications.

Table 9. The demonstration effects of migration stock variables

	Civic participation	Political participation	Girls' enrolment
<i>Share of migrants</i>			
LPM/OLS	0.07*** (0.005)	0.001 (0.004)	0.21** (0.005)
2SLS	0.01* (0.00506)	0.0002 (0.004)	0.36*** (-0.118)
F-Stat First Stage	85.62	23.94	343.58
Observations	11,856	11,855	3,185
<i>Fractionalisation</i>			
LPM/OLS	0.002 (0.003)	0.00351 (0.003)	0.0599 (-0.0921)
2SLS	0.004 (0.003)	0.00384 (0.003)	0.133 (-0.109)
F-Stat First Stage	1262.89	14.75	907.36
Observations	11,856	11,855	3,185

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02 and mxs-d72-rashid-ivmediate-girls_enrolment-2023-10-02".

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

As we can see in the table, overall, we find evidence that the share of migrants has a positive and statistically significant demonstration effect for both civic participation and girls' enrolment. The effect on civic participation is quite small but the one for girls' enrolment appears substantial. The

fractionalisation measure, meanwhile, does not have a statistically significant demonstration effect.

In addition, it is interesting that the share of migrants is statistically significant, not just for the OLS/LPM but for the 2SLS as well, suggesting that these coefficients may be given a causal interpretation. Nevertheless, caution is warranted since we have been unable to account for unobservable variables at the local area and country level, and more work is required to resolve this issue.

The fact that the 2SLS coefficient is smaller than the OLS coefficient is quite interesting as this suggests the presence of standard self-selection into migration. Given that the F-statistic on the first stage is 85.62, there appears to be reasonable evidence that the instrument itself meets the validity conditions and the 2SLS coefficient is closer to the true value of the parameter. There does remain some risk, however, that the growth rates in destination countries are systematically correlated with household characteristics such that people most interested in girls' education are systematically migrating to high income countries. This would imply that the instrument is relevant but still not exogenous. More work needs to be done to answer this question satisfactorily.

Moreover, it is worth noting that the LPM coefficient on share of migrants in the school enrolment specification is smaller than the 2SLS estimate. This implies a negative correlation between share of migrants and the error term in the OLS specification. It is possible that 'ambition', an unobserved variable, could drive both migration and schooling decisions. Theoretically, one would consider ambition to be positively correlated with migration, leading to the OLS being biased upwards. But this is clearly not the case. It is unclear at this stage what unobservable variables could be negatively correlated to migration and also impact schooling decisions. A more plausible explanation is that there is measurement error in the share of migrants that biases the OLS estimates downwards (towards zero). This is possible because the share of migrant information is based on the respondent who may or may not have an influence on the schooling decision.

Mediating effects of migration

As discussed in the section Indirect effects as mediation effects above, we also attempt to estimate the effect of migration directly as well as indirectly through mediating variables.

The idea is that changes in perceptions regarding governance or education can cause a person to either engage or disengage with community participation or a parent to change the education decision of their daughters. We define the mediating effect of migration as the effect of migration on participation in community and voluntary groups or school enrolment of girls, brought about through a change in these perceptions.

More specifically, for participation in community and voluntary groups, we consider the effect of three mediating variables – perceptions of (i) local government, (ii) central government and (iii) corruption. These appear as mediating variables in independent specifications, as the framework does

not allow for multiple mediators. Similarly, for girls' enrolment, we use the norm 'education is more important for boys than girls' as a mediating variable, as explained in the section Mediating variables (M).

The effect of migration on norms and perceptions

We begin by considering the changes migration-related variables may have brought about in i) perceptions of the quality of governance and ii) gender norms.

As laid out in the section Mediating variables (M), perceptions of governance were recorded on a scale of 1 to 10, with 1 being 'terrible' and 10 being 'excellent'. For regression analysis, we have converted each variable into a dummy variable that returns a 1 if the answer to the question above is less than 5 (less than median because there is significant mass at the median). A value of 1 implies that a person does not perceive the government to be doing a good job.

In a regression of perceptions on migration, a negative coefficient would be interpreted as reducing the probability of perceiving that the government was not doing a good job. Put another way, a negative coefficient implies that the experience of migration is associated with a respondent feeling better about their government.

Table 10 shows that perceptions of central government improve with exposure to migration – regardless of how migration is measured. This raises the expectations of migration having a direct impact through changing perceptions of central government. Furthermore, it appears that the experience of migration, regardless of measures, has no effect on perceptions of local government or corruption. Obviously, one cannot therefore expect migration to have an indirect effect through these perceptions.

The gender norm we are looking at is based on whether a respondent considers boys' education to be more important than girls' education. For the regression analysis, we inverted the coding so that a value of 1 implies a less gender-conservative attitude. A positive coefficient would then signify an increase in the tendency to hold a less gender-conservative attitude. Indeed, as Table 10 shows, the experience of migration increases the tendency to hold less-conservative attitudes on gender, and the effect is highly statistically significant. We therefore expect migration to have an effect on schooling through this change.

Table 10. The effect of migration on perceptions and normsMIGNEX
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	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Perceptions of central government	- 0.408***	- 0.992***	-1.038***	- 0.025***	-0.014***
Perceptions of local government	0.047	0.124	0.103	0.003	0.000
Perceptions of corruption	0.237	0.576	0.581	0.015	0.000
Gender norms	0.308***	0.865***	0.574***	0.391***	0.232***
Observations	11,471	11,447	11,446	11,476	11,476

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Participation in community groups

The results of the mediating effects on participation in community groups of attitudes towards government and corruption are presented in Table 11, Table 12 and Table 13.

The estimation technique we are using decomposes a total effect into a direct and indirect effect. To see how, the first entry in Table 11 is interpreted as saying that a respondent in a household with a current migrant is 38 percentage points more likely to participate in community groups. Similarly, the second entry is interpreted as saying that having a return migrant increases community participation by 93 percentage points. If we go down this column, we see that this 93 percentage-point change can be broken down into a direct effect of 9 percentage points and an indirect effect of 84 percentage points. In this particular case, neither the direct nor the indirect effect is statistically significant, meaning that, in this example, we are unable to decompose the total effect into two independently statistically significant direct and indirect effects.

Overall, the first rows of Table 11, Table 12 and Table 13 show that migration has a statistically significant *total* effect of 2 percentage points to 93 percentage points. Since this is a linear probability model, we do not emphasise the size of the coefficient much but concentrate more on relative magnitudes and the statistical significance of the relationships. We estimate 15 specifications in all and have a *total* effect that is statistically significant in all 15 of them. Direct effects, meanwhile, are statistically significant in nine of the 15 specifications and indirect (mediating) effects are significant in seven specifications. Of these seven, three are statistically significant at the 1% statistical significance level.

This said, statistical significance should be interpreted cautiously. The estimation procedure requires two first stages. The Kleibergen-Paap F-

statistic from these first stages is also reported in the tables below, in the second panel. An older rule of thumb is that the first stage F-statistic should be greater than 10 (Stock et al., 2002) while Dippel et al., (2020) suggest at least 30.

The first stage 1 F-statistics of migration variables on the instrument all show fairly high values ranging from 37.9 to 4500. This suggests that our IV is empirically valid for the migration variables at hand, even as the exogeneity assumption requires persuasion. But the First stage 2 F-statistics, that come from regressing norms on the instrument as well as migration, are much lower.

There are only three specifications where both first stage F-statistics are above or very close to 30. We obtain these for the specifications for current migrant, return migrant and remittances when perceptions of central government are mediating. For current migrant, 74% of the total effect (0.28/0.38) is explained by indirect effects; for return migrants, 92% (0.86/0.93) is explained by indirect effects; and for remittances, 90% (0.87/0.96) is explained by indirect effects. It is very interesting that only perceptions of central government and not local government or corruption mediate the link between migration and community participation.

One can only conjecture at this point, but there are two possible explanations for this result. Firstly, as shown in Table 10, it is only perceptions of central government, and not local government, that are associated with the migration experience. The literature on identity suggests that people toggle many identities and the one that is salient depends on the context. We propose that, in the context of international migration, the salient identity for migrants is national rather than the local identity. It arguably follows that migrants' source of pride or embarrassment would be their national government and not their local government, and it is their perceptions of the national government that would be the subject of change in response to migration. A possible empirical test for this conjecture would be to run a comparison with internal migration. This needs to be explored in future extensions to this work.

Secondly, in many low-income settings, most of the resources and decision-making actually happens at higher levels of government and people understand the impotence of local governments. It is possible that these are just irrelevant. Non-perceptions-based measures of governance for each area could shed light on this, but obtaining these measures requires more work. That said, the fact that corruption does not have any effect is surprising.

Table 11. Perceptions of local government

	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.38***	0.93***	0.91***	0.02***	0.02***
Direct effect	-2.68	0.09	-0.28	0.02**	0.01**
Indirect effect	3.06	0.84	1.19	0.003	0.002
F-statistic: First stage 1 (T on Z)	90.6	39.6	37.9	2964.1	4500
F-statistic: First stage 2 (M on Z T)	0.02	0.3	0.1	3.1	15.2
Observations	11,473	11,450	11,448	11,478	11,478

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 12. Perceptions of central government

	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.38***	0.93***	0.96***	0.02***	0.02***
Direct effect	0.10***	0.07***	0.09***	0.04***	0.11
Indirect effect	0.28***	0.86***	0.87***	-0.01	-0.09
F-statistic: First stage 1 (T on Z)	90.6	39.6	37.9	2964.1	4500
F-statistic: First stage 2 (M on Z T)	34.3	28.2	30.5	8.0	15.3
Observations	11,464	11,439	11,437	11,469	11,469

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 13. Perceptions of corruptionMIGNEX
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	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.38***	0.93***	0.93***	0.02***	0.02***
Direct effect	0.05***	0.01	0.02	0.03***	0.01***
Indirect effect	0.32*	0.92*	0.91*	-0.01	0.01**
F-statistic: First stage 1 (T on Z)	90.6	39.6	37.9	2964.1	4500
F-statistic: First stage 2 (M on Z T)	8.1	7.6	8.0	6.6	0.03
Observations	11,616	11,592	11,589	11,623	11,623

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Political participation

We now consider results of the mediating effects on political participation, as shown in Table 14, Table 15 and Table 16.

The most interesting result is for the share of migrants when perceptions of central government are defined as the mediating variable (Table 15). Both direct and indirect effects are statistically significant (although neither at 1%). However, they exactly cancel each other out so the total effect is actually zero (hence statistical significance is immaterial). This can be interpreted as suggesting that the stock of migrants, by changing perceptions of the central government, reduces political participation. This said, there are effects operating independently of the mediating variable (the direct effect) and these go in the opposite direction to a nullifying extent.

Other than this, migration does not seem to have much effect on political participation. There is a total effect of migration only in the case of fractionalisation for all three mediating variables. But indirect effects are statistically insignificant in each of the specifications and direct effects are also only statistically significant in two of the three cases.

Table 14. The mediation effect of migration on political participation through local governmentMIGNEX
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	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.03	0.07	0.08	0.00	0.00865 ***
Direct effect	-0.07	0.02	0.01	0.00	0.00856 ***
Indirect effect	0.10	0.05	0.07	0.00	0.00
F-statistic: First stage 1 (T on Z)	92.626	40.442	38.245	3018.28 3	4500
F-statistic: First stage 2 (M on Z T)	0.009	0.346	0.131	2.772	15.024
Observations	11,471	11,447	11,446	11,476	11,476

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 15. The mediation effect of migration on political participation through central government

	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.03	0.06	0.07	0.002	0.001***
Direct effect	0.01	0.02	0.03**	0.012**	0.01***
Indirect effect	0.01	0.04	0.04	-0.012*	-0.003
F-statistic: First stage 1 (T on Z)	92.63	40.44	38.25	3018.28	4500
F-statistic: First stage 2 (M on Z T)	34.21	28.23	30.55	7.762	15.02
Observations	11,463	11,437	11,436	11,468	11,468

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 16. The mediation effect of migration on political participation through corruptionMIGNEX
Background
Paper

	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.0309	0.072	0.0831	0.00194	0.00878* **
Direct effect	0.012	0.014	0.0263*	0.0131**	0.00784
Indirect effect	0.0189	0.058	0.0568	-0.0112	0.000932
F-statistic: First stage 1 (T on Z)	92.63	40.44	38.25	3018.35	4500
F-statistic: First stage 2 (M on Z T)	8.42	7.77	8.21	7.14	0.003
Observations	11,615	11,590	11,588	11,622	11,622

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02.

Notes: Clustered standard errors are presented. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Girls' secondary enrolment

Finally, we show the results of the mediating effects on girls' secondary school enrolment, in Table 17.

An important way in which the analysis of girls' school enrolment is different from the preceding outcomes is that, so far, the perceptions (mediating variable) and actions (outcome) both pertain to the same respondent. Respondent were asked for their perceptions regarding governments or corruption and were also asked whether they participated in voluntary groups or political meetings. But for schooling, while the gender norm is elicited from the respondents, the decision to send the household girls to school may not be in the respondents' domain. The analysis may work if there is not much variation in attitudes within a household, but this is a fairly strong assumption.

As shown in Table 17 below, migration variables turn out to have a positive and statistically significant total effect on enrolment, regardless of how migration is measured. Moreover, there is a statistically significant indirect effect for all variables except for share of migrants. In three of the variables, current migrant, return migrant and remittance, the indirect effect is actually slightly greater than the total effect (because the direct effect is working in the opposite direction). For fractionalisation, the indirect effect is less than the total effect but still constitutes 72% of the total effect.

Put together, these findings seem to suggest that migration, measured in different ways, positively affects the norm regarding the importance of schooling for girls and, through this, influences enrolment decisions. Having said this, the F-Stat for first stage 2 is quite low across all specifications (see second panel in the table). A final verdict will have to wait for standard errors that are robust to this difficulty.

Table 17. The mediation effect of migration on girls' schooling through gender normsMIGNEX
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	Current migrant	Return migrant	Remittances	Share of migrants	Fractionalisation
Total effect	0.34***	0.95***	0.63***	0.43***	0.29***
Direct effect	-0.01	-0.02	-0.01	0.65	0.07
Indirect effect	0.35**	0.97**	0.65**	-0.22	0.21**
F-statistic: First stage 1 (T on Z)	88.32	18.19	44.34	2264.75	7832.78
F-statistic: First stage 2 (M on Z T)	13.08	14.93	16.58	2.79	11.23
Observations	3,176	3,164	3,170	3,176	3,176

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs-d72-rashid-ivmediate-girls_enrolment-2023-10-02.

Notes: Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Discussion and conclusion

This MIGNEX Background paper analyses the *indirect* effects of migration on development, contributing to a small but growing body of evidence. Importantly, by using an instrumental variable (IV) approach, we are able to conclude on the causal nature of relationships, unlike much of the migration literature.

More specifically, we set out to ask: (i) *Does migration from a community affect civic and political participation of individuals who have stayed back by changing how they think about their government?* and (ii) *Does migration from a community affect the schooling of girls who have stayed back by changing how a member in their household thinks about the value of education?*

Overall conclusions from the analysis

This paper has three main findings.

1. Firstly, we find reasonable evidence that the stock of migrants in a research area has a significant positive *demonstration effect* on both civic participation and girls' school enrolment.
2. Secondly, we find reasonably strong evidence to suggest that different measures of migration affect civic participation through a change of perceptions regarding how well the country's government works.
3. Thirdly, four measures of migration – current migrant, remittances, return migrant and fractionalisation – all have a positive *indirect effect* on girls' enrolment, mainly via the indirect effect of changing norms. But these latter effects are instrumented weakly, so interpretation requires caution.

Our results demonstrate the importance of studying the indirect effects of migration, showing that migration affects a variety of well-being and development outcomes in areas of origin, through changes in norms, values or social remittances. In some cases, these indirect effects have opposing effects to direct effects, or in other cases the effects are much larger than direct ones. This shows how critical it is that the full extent of migration impacts is studied. In other words, migration has many more ‘invisible’ effects lying under the surface than the visible ones, such as new houses being built or new assets being purchased.

Our results regarding civic participation are consistent with existing literature from which we are already aware that migration has been associated with an increase in the level of community participation (Fransen, 2015; Lama et al., 2017; Fomina, 2021). Our specific contribution to this literature is that we show that the perception of governance mediates the link between migration and community participation. Having a migrant acquaintance, or a return migrant or getting remittances, is associated with changes in perceptions of how the government is functioning, and this in turn leads to increased participation in community organisations.

It is interesting, however, that the heightened awareness of government performance does not motivate people to participate politically (in elections, rallies or protests). People may feel that political participation does not have the intended effect. Instead, they turn to participate in a community organisations where, one may conjecture, the outcomes are local but positive.

The first result has immediate policy relevance. We can infer from it that there is significant potential for spillover effects of migration, meaning that studies locating impact at the individual or the household level are significantly underestimating the true effects of migration at the regional/country level. Policy-makers need to be aware that migration as well as measures to manage migration will not only affect migrant households but their surrounding communities.

Future research

Our results point towards a number of next steps. There is some concern on whether the instrument we have used satisfies the important exogeneity condition. Work is required to provide a more persuasive case for the instrument and to better understand its limitations.

We have used a framework (causal mediation) to provide a first set of estimates of the indirect effects of migration. There are a number of technical improvements that need to be made. Firstly, to the extent that the sequential ignorability condition may not hold, the next step would be to estimate the relevant range within which an estimate could lie (instead of a point estimate). This range would hold true even if sequential ignorability is violated. Secondly, we have ignored the binary nature of a number of our variables and have used the linear probability model where a binary dependent variable model would have been more appropriate; this needs revisiting. Thirdly, the method used allows estimation through only one instrumental variable, but we do have other instrumental variables

available. Given that our IV does not work well for schooling, robustness checks using other variables need to be provided.

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However, more generally, our results point out the need to consider the indirect effects of migration more widely in the migration literature through a variety of mediating variables. Moreover, our analysis reveals a critical area that tends to be a blind spot of policy-makers. It shows the need to look at the effects of migration on those with no direct link to migration.

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Appendix 1. Assumptions

Formally, let t be an indicator variable that takes the value of 1 if a household is treated and 0 otherwise and $M_i(t)$ the value of the mediator variable when treatment status is fixed at t . Then $M_i(1)$ and $M_i(0)$ are the values of the mediator for treatment and control units, respectively. Note that only $M_i(1)$ will be observed for treated households and only $M_i(0)$ will be observed for control households.

Imai et al. (2010) define the causal mediation effect, or indirect effect, for each unit i as follows:

$$\delta_i(t) \equiv Y_i(t, M_i(1)) - Y_i(t, M_i(0))$$

for $t=0, 1$. To see the role of the counterfactual, let $t=1$ to get:

$$\delta_i(1) \equiv Y_i(1, M_i(1)) - Y_i(1, M_i(0))$$

For the treated household, the indirect effect is then the difference between the observed outcome $Y_i(1, M_i(1))$ and a counterfactual outcome $Y_i(1, M_i(0))$ that would have been obtained if the treated household had the same value of the mediating variable as an untreated household. Note that the indirect effect is 0 if treatment has no effect on the mediating variable, i.e. $M_i(1) = M_i(0)$.

Direct effects can be defined similarly:

$$\zeta_i(t) \equiv Y_i(1, M_i(t)) - Y_i(0, M_i(t))$$

for $t=0,1$ and the total effect is given by:

$$t_i \equiv Y_i(1, M_i(1)) - Y_i(0, M_i(0))$$

Assumption 1: No interaction effects

Imai et al. (2010) go on to show that the indirect and direct effects sum to the total effect, that is, $\tau_i = \zeta_i + d_i$ if both effects do not vary as functions of treatment status, i.e. $\delta_i(1) = \delta_i(0)$ and $\zeta_i(1) = \zeta_i(0)$. To see what this entails, we can write out $\delta_i(1)$ and $\delta_i(0)$:

$$\delta_i(1) = [Y_i(1, M_i(1)) - Y_i(1, M_i(0))]$$

$$\delta_i(0) = [Y_i(0, M_i(1)) - Y_i(0, M_i(0))]$$

The first equation measures the indirect effect from the perspective of the treated – t is held at 1 and M varies between $M(1)$ and $M(0)$. The indirect effect is then the difference between the observed outcome $Y_i(1, M_i(1))$ and a counterfactual outcome $Y_i(1, M_i(0))$ that would have been obtained if the treated household had the same value of the mediating variable as an untreated household. The second equation measures indirect effects from the perspective of the untreated. Fixing the value of t at 0, it is the difference between the observed outcome $Y_i(0, M_i(0))$ and a counterfactual $Y_i(0, M_i(1))$ that would have been obtained if these (untreated) households had the same value of the mediating variable as treated households. The no-interaction effect says that the perspective from which impact is measured does not

matter. When that is the case, then the total effect is just the sum of the direct and the indirect effect. While we can now decompose the total effect, we still need another assumption before we can infer causality.

Assumption 2: Sequential ignorability (SI)

SI is the key assumption that allows us to call the indirect effect a *causal* mediation effect. For randomised experiments, no interferences between units (no spillovers) allow for the estimation of an unbiased average treatment effect. In our framework, this can be written as

$$\{Y_i(t', m), M_i(t)\} \perp T_i | X_i = x$$

Given pre-treatment confounders (X), the treatment assignment is assumed to be ignorable, i.e., treatment is independent of potential outcomes and mediators. This holds if treatment is random, for example. For observational studies, where this condition would not hold, a common strategy is to collect as many pre-treatment confounders as possible so that the ignorability of treatment assignment appears credible once the confounders are adjusted across treatment and control (Imai et al., 2010). We have neither pre-treatment confounders nor randomisation; we will instead rely on instrumental variables (see discussion below).

Even with randomised treatment, the endogeneity of the mediator requires an additional assumption for causal interpretation. This is written as

$$Y_i(t', m) \perp M_i(t) | T_i = t | X_i = x$$

and states that the mediator is ignorable *given* the treatment and the pre-treatment confounders. This set of assumptions is named sequential ignorability due to the two ignorability conditions being written down sequentially. In our context, the ignorability of the mediator questions if gender norms are randomised given treatment status. This is a strong assumption since it is always possible that unobservable variables exist that confound the relationship between the outcome and mediator variable even after conditioning on treatment and covariates. Since the assumption pertains to unobservables, it cannot be directly tested from observed data (Manski, 2007).

Assumption 3: Unobservables only affect the outcome through the mediating factor

This next assumption can be written as:

$$\varepsilon_t \neq \perp \varepsilon_y | \varepsilon_M \text{ and } \varepsilon_t \perp \varepsilon_y$$

To understand this assumption in our own context, we can focus on the effect of having a migrant household member on girls' education directly and indirectly through gender norms. Since both decisions are household decisions that may be made jointly, one possible source of endogeneity is unobservable 'ambition'. Ambition can encourage a household to send a grown-up member abroad to earn (T) as well as encourage them to have progressive norms (M).

Sequential ignorability requires that ambition does not affect girls' enrolment directly but only through a change in norms. Violating the assumption would mean that a household's ambition can have a direct impact on girls schooling, while maintaining a regressive norm (that education is more important for boys than girls).

Fortunately, however, the indirect effect can still be estimated if this assumption is relaxed. Point estimates will not be possible, but an upper and lower bound can still be constructed.

Appendix 2. Full regression results

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Table 18. The demonstration effects of the share of migrants on civic and political participation

	<i>Civic participation</i>		<i>Political participation</i>	
	OLS	IV_GDP	OLS	IV_GDP
Share of migrants	0.074***	0.009*	0.001	0.0002
Household wealth index	0.172**	0.026**	0.002	0.004
Tertiary education	0.279***	0.042***	0.020***	0.0201***
Dependency ratio	0.123***	0.017***	0.015***	0.014***
Employed	0.381***	0.055***	0.052***	0.054***
Minority	-0.307**	-0.047**	0.045**	0.045***
Age	0.048	0.008	0.011*	0.012*
Age squared	-0.0007	-0.0001	-0.0002	-0.0002
Female headed household	0.074	0.013	-0.014	-0.013
Father has primary education	-0.283***	-0.046***	-0.030**	-0.031***
Father has secondary education or higher	0.072	0.009	-0.025**	-0.030**
Mother has primary education	-0.048	-0.010	-0.022	-0.018
Mother has secondary education or higher	-0.186*	-0.029	-0.020	-0.014
Covid impact	0.191***	0.027***	0.006	0.005
Social protection	0.626***	0.103***	0.077***	0.077***
Livelihood opportunities	-0.094	-0.013	0.019*	0.018*
Own land	0.762***	0.121***	0.099***	0.099***
School quality	0.004		0.0004	
Life satisfaction	-0.173***	-0.026***	-0.016*	-0.018**
Constant	-3.650***	-0.132	-0.189**	-0.198**
Observations	11,623	11,856	11,622	11,855
R-squared		0.069	0.044	0.044

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02 and mxs-d72-rashid-appendix-2023-11-17 Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 19. The demonstration effects of the fractionalization on civic and political participation

	<i>Civic participation</i>		<i>Political participation</i>	
	(1)	(2)	(1)	(2)
	OLS	IV_Frac	OLS	IV_Frac
Fractionalization	0.002	0.004	0.004	0.004
Household wealth index	0.026**	0.026**	0.001	0.003
Tertiary education	0.043***	0.043***	0.022***	0.022***
Dependency ratio	0.015**	0.016***	0.017***	0.017***
Employed	0.055***	0.054***	0.050***	0.052***
Minority	-0.045**	-0.044**	0.045**	0.044***
Age	0.009	0.009	0.011	0.012*
Age squared	-0.000	-0.000	-0.000	-0.000
Female headed household	0.011	0.016	-0.013	-0.011
Father has primary education	-0.045***	-0.046***	-0.028**	-0.029**
Father has secondary education or higher	0.011	0.009	-0.026**	-0.030**
Mother has primary education	-0.012	-0.009	-0.020	-0.014
Mother has secondary education or higher	-0.031*	-0.028	-0.019	-0.013
Covid impact	0.030***	0.029***	0.006	0.005
Social protection	0.010***	0.101***	0.077***	0.078***
Livelihood opportunities	-0.016	-0.015	0.018*	0.018*
Own land	0.125***	0.123***	0.096***	0.010***
School quality	0.001		0.000	
Life satisfaction	-0.026**	-0.026**	-0.014	-0.016*
Constant	-0.142	-0.139	-0.199**	-0.209**
Observations	11,623	11,856	11,622	11,855
R-squared	0.07	0.07	0.05	0.05

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02 and mxs-d72-rashid-appendix-2023-11-17 Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 20. The demonstration effects of the share of migrants and fractionalization on girls' secondary enrolmentMIGNEX
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	Share_OLS	Share_2SL S	Frac_OLS	frac_2SLS
Share of migrants	0.203*	0.359***		
Household wealth index	0.028	0.024	0.024	0.024
Is female	0.073***	0.071***	0.073***	0.072***
Tertiary education	0.123***	0.119***	0.122***	0.122***
Dependency ratio	-0.025**	-0.027**	-0.022*	-0.026**
Employed	-0.067***	-0.068***	-0.069***	-0.069***
Minority	0.071*	0.068*	0.077*	0.077*
Age	-0.046***	-0.044***	-0.047***	-0.046***
Age squared	0.000***	0.000***	0.001***	0.000***
Female headed household	-0.000	-0.001	0.006	0.005
Father has primary education	0.080***	0.071***	0.073***	0.072***
Father has secondary education or higher	0.040	0.008	0.008	0.007
Mother has primary education	0.003	0.010	0.009	
Mother has secondary education or higher	0.100***	0.101***	0.010***	
Covid impact	0.030*	0.031*	0.036**	0.036**
Social protection	-0.094***	-0.088***	-0.093***	-0.093***
Livelihood opportunities	0.018	0.018	0.013	0.012
Own land	-0.106***	-0.108***	-0.109***	-0.109***
School quality	-0.003	-0.003	-0.005	-0.005
Life satisfaction	0.050**	0.050**	0.054***	0.055***
Fractionalization			0.060	0.133
Constant	0.801***	0.764***	0.823***	0.798***
Observations	3,209	3,185	3,185	3,185
R-Squared	0.16	0.16	0.16	0.16

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02 and mxs-d72-rashid-appendix-2023-11-17 Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 21. First stage regressions for enrolmentMIGNEX
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	Share of migrants	Fractionalization
Household wealth index	-0.003	-0.003
Is female	0.004**	-0.004*
Tertiary education	0.006***	-0.001
Dependency ratio	-0.001	0.013***
Employed	0.003	0.002
Minority	0.002	0.019***
Age	-0.001	0.000
Age squared	0.000	0.000
Female head	0.010**	0.002
Father primary	0.008*	0.001
Father secondary	-0.004	0.011***
Mother primary	0.021***	-0.008**
Mother secondary	0.005	0.008**
Covid impact	0.001	-0.007***
Social protection	0.004	0.003
Livelihood opportunities	-0.002	0.013***
Own land	0.008***	0.002
School quality	0.000	0.005***
Life satisfaction	0.002	-0.004*
Instrument	0.076***	0.987***
Constant	-0.012	-0.006

Data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta). Specification: mxs_d72_rashid_ivmediate_participation_2023_10_02 and mxs-d72-rashid-appendix-2023-11-17 Clustered standard errors are presented. Significance levels: *** p<0.01, ** p<0.05, * p<0.1