

Migration, Political Institutions, and Social Networks^{*}

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May 2016

Abstract

What is the role of migrants and, more specifically, of migrant networks in shaping the quality of political institutions in migrant sending countries? Our theory proposes that migration might change individual social identities, while it may also improve knowledge about better quality political institutions. Hence, international migration might increase the demand for political improvements both by migrants and by other individuals in their networks. To test this hypothesis, this paper uses, most innovatively, actual voter turnout and a behavioral measure obtained by having survey respondents participate in a simple behavioral experiment, supplemented with detailed household survey data. These data were purposely collected around the time of the 2009 elections in Mozambique. The empirical results show that the number of migrants in a village a voter is in close contact with, either through kinship relations or regular chatting, increases the demand for political accountability by residents in that village. Furthermore, we find our results to be robust to the use of instrumental variables - natural catastrophes as an exogenous source of variation for migration flows, and second-degree links with migrants to control for the endogenous formation of networks.

Keywords: International migration, political participation, effects of emigration in origin countries, behavioral measure, sub-Saharan Africa.

JEL Codes: D72; F22; O15.

^{*} The authors are grateful for helpful comments to Ana Balcao Reis, Margherita Comola, Emilio Gutierrez, Susana Peralta, and conference participants at NEUDC and CSAE. We would also like to thank superb research assistance by Miguel Ferreira and Ana Vaz, as well as fantastic work offered by supervisors Egídio Chaimite, Alberto da Cruz, Egídio Guambe, and Aquilcia Samuel, and the group of enumerators with whom we worked: their dedication to this project was critical to its success. We wish to acknowledge financial support from the DfID - Department for International Development (UK), in the context of the International Growth Centre.

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1. Introduction

The economic importance of international migration has been increasing steadily in the recent decades. It is not only that the number of labor migrants has increased massively, but also that the financial flows generated by these migrants have been rising rapidly, often surpassing the national budgets of many developing countries. As a result, the strand of economics literature that examines the potentially positive effects of emigration on the economic development of origin countries has been growing. Positive effects of emigration on economic development may happen as a result of a number of mechanisms such as helping to overcome liquidity constraints, promote human capital accumulation, and increase international trade.⁵ One area that has deserved relatively less attention is the relationship between migration and the quality of political institutions in migrant countries of origin. The importance of good political institutions for economic development is by now well established, as influentially described by Acemoglu, Johnson, and Robinson (2005). However, empirical evidence on the impact of emigration on the quality of political institutions in origin countries is scarce, and there are only a few recent contributions.

Spilimbergo (2009) conducted one of the first studies on the effects of migration on democratization by examining the impact of foreign education acquired in democratic countries on fostering democracy in student origin countries. He showed that migration may promote democracy, but left the question unanswered as to which specific mechanisms underlie this effect.

⁵ Edwards and Ureta (2003) or Yang (2008) described that remittances may provide the financial resources to overcome credit constraints in sending countries. Furthermore, return migration may bring not only financial resources, but also human capital, which can promote entrepreneurship and economic growth, as in Mesnard and Ravallion (2006) and Batista, McIndoe-Calder, and Vicente (2015). Migrant networks may also foster increased Foreign Direct Investment (FDI) and international trade, as found by Gould (1994), Rauch and Trindade (2002), Kugler and Rapoport (2007) or Javorcik et al. (2011). An additional possibility empirically examined and supported by Beine, Docquier, and Rapoport (2008) and Batista, Lacuesta, and Vicente (2012) is the “brain gain” hypothesis according to which the prospect of emigration can actually promote human capital accumulation in migrant origin countries.

Docquier et al. (2011) present cross-country evidence of the positive impact of unskilled emigration from developing countries to OECD countries, on the institutional quality of origin countries by using aggregate measures of democracy and economic freedom. They find significant institutional gains from the “brain drain” over the long run after considering incentive effects on human capital formation. They attribute these effects to an increase in the exposure of home country population to democratic values and norms.

These earlier empirical contributions use aggregate macroeconomic data and explore cross-country variation. Hence, they cannot distinguish between supply and demand forces nor capture in detail the mechanisms underlying the effects they identify. Differently, Batista and Vicente (2011) use individual-level variation from a tailored household survey, and behavioral data for a single country. This allows them to discriminate between the impact of return and current migrants on individual-level political attitudes. While this approach is innovative in the sense that it employs micro data, and while it points towards return migration as the driving force for the effects on political attitudes, it would be important to learn more precisely about how individual-level relationships with migrants affect the demand for political institutions.

Mahmoud et al. (2014) contribute to this question by exploiting community and individual-level data from Moldova as well as migration patterns to countries with different political regimes. In particular, they test whether exposure to Western democratic values and norms promoted political change in municipalities with a higher number of emigrants. They find large effects on electoral preferences and outcomes but cannot explain in detail how information is transmitted, and what role different social networks play in this process.

The diffusion of political values through social networks has been previously investigated by Fafchamps, Vaz, and Vicente (2012), who showed that increasing the political literacy of experiment participants changed individual electoral behavior for those

participants with more network connections, even if they were not targeted directly by the literacy campaign.

The main objective of this paper is to examine in detail different types of migrant networks, and analyze their role in the diffusion of political attitudes that promote the improvement of institutions.

The hypothesis under examination is that international migration may change individuals' identities and improve voters' information about political processes in origin countries through a greater exposure to democratic political values and norms. Through changing the social category an individual belongs to, the set of behavior-defining prescriptions associated with the social category is altered. This in turn will directly affect an individual's decision to vote. We assume that this effect will not only occur for migrants themselves, but also trigger peer effects - thus influencing the social network of current and return migrants in their country of origin.

To test our hypothesis that migration may change identities, and thereby fosters political participation, we exploit data from a representative household survey conducted during the 2009 national elections in Mozambique. Our econometric model allows us to capture if an individual, who is connected to one or more migrants in some way is affected differently depending on the type of connection. Specifically we test if information and values are transmitted through family members, regular chatting partners, or geographical neighbors by examining whether the effect on political participation is larger for more connected individuals.

Using detailed household survey data, a proxy for actual voter turnout, and an experimental measure of political participation, we estimate the effect of social and geographical networks of migrants on the quality of political institutions in their home country, Mozambique. Our dataset contains information on the characteristics of migrants

and home country residents, on the political attitudes and political participation of these residents, and detailed data on the existence of connections and different types of relationships between households. Distinguishing between types of networks (i.e. distinguishing between kinship ties, frequent chatting, and geographical proximity), and using individual characteristics of home country residents and migrants, we can include heterogeneous effects in our estimations and examine individual-level effects in detail.

To test our hypotheses we, most innovatively, compare self-reported voter turnout to actual turnout and use an experimental measure reflecting respondents' political participation. This experimental measure is obtained by asking respondents to send a cell phone text message (SMS) suggesting policy priorities for the president-elect's mandate to an independent newspaper that would in turn publicize these suggestions. Each message implied a small cost such that we can interpret sending a text message as an incentive-compatible measure of political participation.

To evaluate in detail the different diffusion mechanisms of political attitudes through migrant networks, we use different migrant network measures. We begin by simply looking at whether each respondent reports at least one member with migration experience. Second, we examine the degree of connectedness between the respondent and migrants within the respondents' network. We distinguish between *geographical networks*, i.e. how many households with at least one migrant in the family exist in the respondent's village; *kinship networks*, i.e. the number of family members with migration experience within this network; and *chatting networks*, i.e. the number of migrant households the respondent regularly chats with.

We estimate our econometric model using ordinary least squares, controlling for individual, household, and location characteristics. Because the formation of migrant networks may potentially be correlated with political attitudes via unobserved factors that

cannot be controlled for in our regressions, we also conduct instrumental variable regressions that exploit ‘quasi-natural experiments’ given by natural catastrophes such as severe storms, droughts, floods, or plagues. These events can plausibly exogenously create migration flows that are not correlated with any other determinants of political attitudes. We furthermore control for the endogenous creation of network links by estimating the effects of being linked with migrant households indirectly through ‘friends-of-friends’.

Our results confirm the findings by Batista and Vicente (2011) in the sense that stronger links with migrants are correlated with the behavioral measures of political participation we employ. These effects seem to be mainly driven by intense chatting relations with migrants rather than through kinship relations. Our findings are robust to using instrumental variable estimations to control for self-selection and endogenous network creation.

The remainder of the paper is organized as follows. Section 2 presents a theoretical framework to model how migratory experiences may influence political behavior. Section 3 presents the country context under which the empirical part of this study was carried out. Next, section 4 proposes an econometric model and estimation strategy for the effects of interest. Section 5 follows with an introduction to the dataset and its descriptive statistics. Finally, section 6 and section 7 present the empirical results of the OLS estimations and robustness tests, and section 8 concludes.

2. Theoretical Framework

Political participation is traditionally modeled as the outcome of an expected cost-benefit analysis.⁶ The cost of casting a vote can be captured by the opportunity cost of going to the local polling station or the cost to obtain the necessary information about election

⁶ See for a detailed description Dillon and Peralta (2002).

candidates. Our experimental measure entails a small direct cost as sending a text message is a costly action.

An individual's benefit from casting a vote or sending a text message is defined through the expected utility from the outcome of a political process, and an individual's intrinsic motivation. The outcome of a political process can be described by the function $G(x_j, x_{-j})$, where x_j is an action vector of individual j , and x_{-j} reflects the combined action of all individuals other than j . An individual j thus maximizes the following expected payoff function:

$$\max_{x_j} E_{\Omega_j} U(G(x_j, x_{-j}), I_j) - cx_j$$

Where Ω_j is the information set available to individual j , and cx_j is the cost of taking action. Note that in this model own actions and actions taken by others do not enter the utility function directly as electoral processes are complex, and casting a vote might not necessarily increase one's utility. The individual maximizes its expected utility of taking a certain action given the actions of everybody else, and his/her own intrinsic motivation. The solution to this maximization problem yields that the individual's expected payoff has to be at least as high as the cost of action so that he/she is indifferent between participating or not.

To determine the impact of migration on political behavior, we define intrinsic motivation through an individual's identity, following Akerlof and Kranton (2000). The identity of individual j is represented as follows:

$$I_j = I_j(a_j, a_{-j}; c_j, \varepsilon_j, \mathbf{P})$$

Let there exist a set of social categories⁷, \mathbf{C} . An individual j assigns itself to one of these categories, c_j , given its characteristics, ε_j . The determining characteristics that seem to drive political behavior through identity, and are thus relevant in the context of this paper can be thought of as an individual's gender, age, income, and most importantly the society (given

⁷ A social category in its simplest form could be gender though our model allows for more complex and narrow definitions of a social category.

through the location) an individual lives in. Note that the self-assignment each individual undertakes may be unconscious, and differ from the social category others might attribute him. Each individual furthermore has a conception about the social categories of all other individuals, c_j .⁸ Belonging to a social category implies an appropriate (or expected) behavior for this category that is determined by the set of prescriptions \mathbf{P} . We can think of these prescriptions as widely accepted norms that individuals follow to maintain their self-image. Whether or not an individual derives gains or losses from identity in the above utility function is determined by the individual's actions, a_j - i.e. an individual acting against a category's prescriptions will experience a loss in identity and thus reduce its benefit from not voting. The gains or losses from identity furthermore depend on the actions of others, a_{-j} , as prescriptions are not obvious to an individual but are reflected in the opinion (and thus actions) of other individuals belonging to the same social category. We therefore distinguish in the above representation of identity between observable and unobservable (and mostly unconscious) determinants of identity, where actions and characteristics are observable, and social categories and the associated prescriptions are unobservable.

The above utility function allows us to examine two distinct channels through which migration affects political behavior: a change in an individual's identity and a learning mechanism based on increased knowledge about political processes.

To examine the effect of migration on an individual's identity we consider the following representation of a set of prescriptions:

$$P = P(a_j, a_{-j}; c_j)$$

The prescriptions that determine an individual's behavior firstly depend on the social category an individual attributes itself to. Furthermore, in a non-static case, individuals'

⁸ Being able to put others in a social category (or box) helps an individual to interpret the behavior of others as appropriate or not, and copy behavioral patterns of peers belonging to the same social category.

actions may change prescriptions as changes in behavior become more accepted.⁹ The above representation allows the adaption of prescriptions to be driven both by own actions as well as through the actions of others – although we would expect the combined actions of others in general to have more weight in this process than individual ones.

We consider an individual's own migration to be action, a_j . An individual that emigrates becomes exposed to a different environment, and possibly different political reality. This change in surroundings affects the social category, c_j , the migrant belonged to initially, as the social category depends on the location of an individual. As the prescriptions, \mathbf{P} , depend on the social category, the individual is thus exposed to different prescriptions after emigration. To avoid losses, the individual has to update his political behavior accordingly.

Similarly, migration might affect an individual's identity through the actions of others, independently of own migratory experiences. To see this, let the actions of an individual's peers with migration experience, a_j , reflect the above shown change in identity. As prescriptions are influenced by peers' actions, our model predicts that migration may change the behavior of non-migrants indirectly. This is the case if the opinion of peers, mirrored in their actions, has enough weight within a social category to influence existing prescriptions.

The second channel through which migration may affect political behavior is through learning about more democratic political processes. This is especially the case for international migration of students that obtain higher education abroad. If migration changes the information set available to an individual, Ω_j , the net benefit of a voter increases. This is, as more information will allow an individual to make better, more informed decisions about

⁹ The changes in the acceptance of female participation in politics can be understood as an illustration of this mechanism. In most industrialized countries, women today are not less expected to be politically active even though only about 100 years ago they were not even allowed to vote. This norm change was mainly driven by female activists as for example by the Suffragettes in the UK. This process reflects an adaptation of prescriptions due to the actions of individuals from within a social category.

electoral processes and political participation. Both direct migratory experiences and migration of peers may affect political behavior as the learned information might be passed on to migrants' social networks in origin countries.

3. Country Context: Mozambique

This study examines migration between Mozambique, and (to a large extent) its neighboring African countries such as South Africa, Malawi, and Tanzania. Mozambique is considered to be one of the poorest countries in the world with a GNI per capita of only 1.140\$PPP in 2014. Despite its high growth rates of 7.14% on average between 2000 and 2014, Mozambique is still ranking on place 178 out of 187 countries in the Human Development Index. For many years, Mozambique has been an aid-dependent country that, in 2013, received official development assistance of almost 15% of its GNI (US\$2.3b).¹⁰ The majority of the Mozambican population, around 81%¹¹, is directly dependent on agriculture. Climate change is a major threat to these livelihoods as Mozambique is exposed to extreme weather events that are expected to become more frequent and intense in the future. In January 2013, the worst flood since 2000 hit the southern province of Gaza, displacing more than 175.000 people alone.¹²

As a consequence, Mozambique has been an emigration country for a long time. Large migratory movements from Mozambique were traditionally labor-driven mainly from the southern Mozambican provinces to South African¹³ mines and commercial farms. In 2013, (formal) remittances flows contributed towards GDP with 1.4%, having inflows of approximately US\$217 million. Migration from and to Mozambique has furthermore been related to political instability, both in destination countries and in the home country due to

¹⁰ World Development Indicators (2015), World Bank.

¹¹ CIA World Factbook (2015).

¹² Red Cross Mozambique (2013).

¹³ This is reflected in our data as around 75% of migrants emigrated to South Africa as shown in Table 2.

wars and political unrest: After its independence from Portugal in 1975, as a result of ten years of war, Mozambique was led by the independence movement FRELIMO (Frente de Libertação de Moçambique) under a single-party, socialist regime. Only two years after independence had been negotiated, the country began suffering a civil war between FRELIMO and RENAMO (Resistência Nacional Moçambicana) that evoked large refugee movements to neighboring countries. With the end of the cold war, and the collapse of apartheid, FRELIMO and RENAMO started negotiations that resulted in a new constitution allowing for a multi-party system, and a peace treaty signed in 1992. The newly established peace encouraged many of the refugees to return to their homes in Mozambique. In the following, presidential and parliamentary elections were held in 1994, 1999, 2004, 2009, and 2014. FRELIMO won these elections by far and increased its vote share constantly. Across all national elections electoral irregularities (mainly claimed by RENAMO but also confirmed by international observers) had significant consequences for the overall results. The 2009 elections, the time around which our data has been collected, are considered to have been following international standards, despite small irregularities. Both Guebuza, the Mozambican president from 2005 until 2015, and FRELIMO were elected unambiguously by 75% in 2009, showing the tremendous degree of control FRELIMO has in the country. Freedom House considers Mozambique a ‘partly-free’ country,¹⁴ and citizens show difficulties in grasping the importance of democracy.

More recently, return migration to Mozambique has been determined by the onset of violence against foreign immigrants in South Africa – the most important destination country for Mozambican emigrants. In 2008, xenophobic attacks resulted in the death of several people. As a consequence, several thousands of Mozambicans flew back to their home country.

¹⁴ Freedom House (2013).

4. Estimation Strategy

To test our hypotheses, we build an econometric model based on the theoretical framework described in section 2. The relationship between emigration and political behavior is estimated for different outcome variables that reflect a respondent's political participation. Political participation can be estimated using the following latent variable model:

$$V_i = 1(V_i^* \geq 0) \quad (4.1)$$

$$V_i^* = \alpha + \beta \sum Network_{ij} * mig_HH_j + \delta X_i + \varepsilon_i \quad (4.2)$$

According to this model, the respondent will vote (or be politically active) if the net expected benefit from voting, V_i^* , is non-negative. The net expected benefit is influenced by the links with migrants in the respondent's network, $\sum Network_{ij} * mig_HH_j$, as well as by a vector of individual and geographic characteristics X_i . The number of links with migrants in an individual's social network is computed as the interaction between the directed link from individual i to individual j , and a dummy for the migration experience of household j . The sum of migrant households includes the migration experience of household i in our specification. The form of the network variable depends on the specific network type under evaluation – either the geographical, kinship or chatting network. The variable $Network_{ij}$ indicates whether or not two respondents live in the same village, have a kinship relation, or regularly chat with each other.¹⁵

Further a vector of individual, household and locality specific controls, X_i , determines the costs and benefits of casting a vote or sending a text message. This vector includes demographic controls that determine the identity of an individual such as gender, age and age². To capture effects from a greater information set of an individual, this vector

¹⁵ Note that these network links are directed, i.e. individual i indicating to be linked to individual j does not impose a reverse link as well. This is coherent with our theoretical model as it is the subjective perception of connections with migrants that drives our results. A household furthermore is considered to be connected with itself in all specifications and for all network types.

furthermore includes the levels of schooling an individual completed, as well as the access to information schemes such as radios, computers or television. We also include province fixed effects in all our specifications. We estimate our model by using ordinary least squares.¹⁶ To take into account that observations might be correlated with each other, we cluster standard errors at the village level.

5. Data and Descriptive Statistics

The household survey data used in this paper was collected in Mozambique from mid-September until mid-October around the 2009 elections by the CSAE at the University of Oxford. The four provinces covered by the survey are Cabo Delgado, Zambézia, Gaza, and Maputo-Province. The survey's sampling framework was based on the 2004 electoral map of the country and conducted in two stages – first on provinces, then on enumeration areas. The interviews targeted the household head or his/her spouse, and were conditional on 'having access to a cell phone' to receive or send text messages (this included having access to a neighbor's or family member's phone). This condition was necessary for our behavioral measure on the expression of political objectives, as it required the ability to send a text message.

5.1 Descriptive Statistics

To reflect the importance and magnitude of migration in Mozambique, Table 1 illustrates the percentage of households with migrants in the data set. It shows that almost 33% of all households report at least one migrant. Only 17.5% of households live in villages where no geographical neighbors ever migrated and approximately 41% of households have a family member that is currently or has been living abroad. This number increases slightly to around 48% of households that indicate to be regularly chatting with migrant households.

¹⁶ Other models, such as probit and Tobit regressions, were run as robustness checks and yielded similar results.

The migratory experiences in our dataset are mainly determined by emigration to South Africa, which accounts for about 75% of all destination countries – a detailed description of the frequency of different destination countries can be found in Table 2. Almost half of our sample is composed of women with an average age of approximately 37 years. The education a respondent received is as expected rather limited with approximately six years of schooling on average (primary education).

5.2 Description of Variables of Interest

Our main outcome variable of interest is the respondents' political participation - measured through actual voting during the 2009 national elections. We furthermore complement our analysis by examining the impact of international migration on self-reported voter turnout and an alternative experimental measure based on asking respondents to communicate policy priorities.

Behavioral Measure

To obtain an actual behavioral measure as opposed to simply limiting ourselves to analyzing self-reports from the survey, we followed individuals through the 2009 elections and asked them to show us the finger that was inked after having voted. If the interviewer observed a correctly inked finger, we interpret this proxy as a definite indication of the respondents voting behavior.

Survey Measures

Moreover, providing an interesting contrast to our behavioral measure, we use a simple survey question on whether the respondent voted to compare the above measure to the respondent's self-reports of his/her electoral turnout.

Experimental Measure

To evaluate whether actual voting behavior can be proxied in a more reliable but efficient way than through survey outcomes, we conducted a simple behavioral experiment with our survey respondents:

We proposed respondents the option to send cell phone text messages suggesting policy priorities for the president-elect's mandate. These suggestions would be forwarded to an independent Mozambican newspaper that would in turn publicize these suggestions, namely to the president-elect himself. This promise was made credible by the public official support of the newspaper to this initiative.

We were able to identify the individual survey respondents that sent messages through cell-number matching. As data collection was conditional on having access to a cellphone, and since each message implied a small cost (of sending the message), sending a SMS message is a costly action, which we interpret as an incentive-compatible measure of political participation.

Migrants' Networks

A household is considered a migrant household if at least one of the household members is currently or has ever lived outside of Mozambique for at least six months. To obtain the amount of migrants in an individual's network we interact this migration variable with the network links variables across all households within one enumeration area. Our migrant network variables allow us to distinguish between network effects according to the social proximity of two respondents. This means that we not only evaluate the overall fraction of migrants in an individual's geographical network (i.e. within the same EA) but also the number of migrants in an individual's chatting and kinship network. A chatting link between two individuals is registered if a respondent indicates to regularly talk with another respondent. We allow for this link to be directed, i.e. a one-sided existence of a link is

sufficient, as our theoretical framework suggests that conception of social categories is subjective, and need not be consistent across individuals. We calculate kinship links in an equal manner if an individual reports to be related to another respondent. The degree of connectedness with migrants is then calculated according to this classification as the total number of migrants the household is connected to.

6. Empirical Results

In this section, the main empirical results are summarized. Principally, we will present and discuss the robustness of our behavioral measure reflecting a higher demand for better political institutions.

6.1 Voter Turnout and Demand for Better Institutions – Baseline Results

Under our hypothesis that migration changes the net benefit of voting, we would expect a positive coefficient for the respective networks given that spillover effects exist if the individual net benefit increases. As migration in Mozambique is mainly determined to countries with a higher democracy index¹⁷ and higher political participation, we would expect this relationship to be positive as migrants firstly learn about the importance of elections, and secondly adapt to an environment abroad where democracy is valued higher, thus changing their identity.

This sub-section evaluates whether the above predictions are reflected in our behavioral measures actual voting and the SMS-based experiment. Tables 4a and 4c summarizes the baseline estimation results. If an individual sent a text message, we interpret this costly action as greater political participation, and as expressing a higher demand for better political institutions. In particular, we would expect this outcome to be positively correlated with migratory experiences for two reasons: On the one hand, sending this text

¹⁷ See for example the Democracy Index by the Economist Intelligence Unit for further details.

message requires an informed opinion about ongoing political and societal problems to be able to make priority suggestions. As migration is expected to increase the information set available to voters, we thus predict the correlation between the fraction of migrants and the expression of own political priorities to be positive. On the other hand, we suggested that a voter's benefit from political participation depends on its identity. This means that a respondent might decrease his net benefit from not sending a text message if the prescriptions of his social category foster political participation.

In line with these predictions we observe a positive and highly significant effect of 2.2% till 2.5% per additional migrant in an enumeration area on actual voting as proxied through observing an inked finger. These results are reported in column (1) and (3) in Table 4a where the latter column shows OLS results including individual and household controls. Contrary to our expectations, we cannot find this result confirmed in the OLS specifications regarding the sending of a text message.

We furthermore find a statistically significant effect that is even higher for kinship relations with migrants in a locality as shown in Tables 5a and 5c. Being related to migrant households increases actual voting behavior by between 2.6% and 3%. Again, we cannot find this behavior reflected in our experimental measure.

The intensity of chatting relations with migrations is also found to be positively and significantly related to a respondent's actual voting behavior but not to the demand for better political institutions as proxied through our experimental measure. The results upon actual voting are close to the estimates considering the amount of migrant households within a village in magnitude. These results are reported in Tables 6a and 6c.

All of our estimations include province fixed effects and include a number of household-specific controls as reported above.

7. Instrumental Variable Estimation

In section 6, we reported empirical evidence for Mozambique suggesting that emigration affects political participation through and migrants' networks where the general number of migrant households in a location, kinship relations, and intense chatting relations with migrant households are found to be affecting actual voting but not the demand for better political institutions. However, migration might be correlated with individual political attitudes through unobservable factors that cannot be controlled for in our econometric analysis so far. This would imply a correlation between our explanatory variable and the regression error term. To overcome this concern, we estimate our regressions using instrumental variables. This strategy allows us to exploit sources of variation that cannot possibly determine our outcome variables (political participation) directly, but are highly correlated with our variables of interest, i.e. migratory experiences of households and network links.

7.1 Endogenous Migration Decisions

As described before, we might face an omitted variable bias if individuals that are less (or more) politically active opt to emigrate to another country more often than people that participate in politics more (less) often. Especially for Mozambique the ongoing political instability, high corruption, and low level of democracy might affect people in their decision to leave the country. If this is the case, then our explanatory variable of interest is not exogenous but might be correlated with the error term.

To tackle this issue we use an instrumental variable approach to verify our OLS estimates. As instruments for the migration experiences of a household we exploit the exogenous variation of the occurrence of a natural catastrophe affecting harvests or cattle. These are often the livelihood of many families, as especially in rural areas (the context of our study) there are almost no income sources from salaried work. We therefore expect the

occurrence of a natural disaster to be highly correlated with an individual's decision to migrate in order to provide for his/her family. The dataset for the instrumental variables provides detailed data on catastrophes¹⁸ in Mozambique on a district level, allowing for large variation between EAs. In particular, we have information about the occurrence of severe storms, plagues, droughts, and floods in Mozambique between 1980 and 2009. We interact the occurrence of a natural catastrophe in the district of a respondent's village with his/her birthyear to obtain instruments for whether there was a natural catastrophe in the district of a respondent while he was in a suitable age to migrate, i.e. older than 17.

In this sub-section we focus on the endogeneity problems concerned with an individual's decision to migrate. We estimate the following 2SLS regression:

$$y_i = \alpha + \beta \sum \widehat{Network}_{ij} * mig_HH_j + \delta X_i + \varepsilon_i$$

$$\sum \widehat{Network}_{ij} * mig_HH_j = \alpha + \theta_2 \sum Network_{ij} * IV_{1j} + \delta X_i + \varepsilon_i$$

In the above illustration we show the 2SLS estimations with only one instrumental variable. Additionally we report 2SLS regressions with two instrumental variables in the tables below. The first specification includes the interaction between network links and the instrument for household j , without controlling for the endogenous creation of networks. The second specification takes the endogeneity of network creation into account by substituting the variable $Network_{ij}$ through and instrument based on second-degree links. The vector X_i contains the individual and geographic controls as stated above.

The 2SLS estimation results for our behavioral measures are reported in columns (2) and (4) of the respective tables as reported above. To control for the endogenous to decision to migrate within an EA we use the sum of severe storms that each of the households within this EA experienced after the household head turned 17. As indicated through the F-statistics

¹⁸ The data were obtained from the DesInventar database, a joint project of UNDP, UNISDR and LA RED.

of around 62 for both specifications this instrument seems to be highly correlated with our endogenous variable – the number of migrant households within a location. As we might expect the recent experience of a severe storm to be correlated with personal frustrations affecting political behavior, we exclude all storms that affected respondents between 2007 and 2009 in our model. Our 2SLS estimates confirm the results of the above obtained OLS estimates for actual voting and attribute a significantly positive effect of almost 6% to a higher number of migrants within a village. Using a similar approach to construct valid instruments but focusing on the occurrence of droughts, we furthermore find a highly significant positive effect of migration on our experimental measure of sending a postcard of 4% when controlling for individual and household characteristics.

In Tables 5a and 5c, we use the same instrumental variables as before to estimate the effect of kinship relations with migrants on political action taking. Our instruments keep on being strongly correlated with the endogenous variable, reporting F-statistics of 60.37 under the specification that includes all individual and household controls. We observe a highly significant and positive effect of 3.6% for actual voting. But as above, a higher degree of connectedness with migrants through kinship relations has no effect on our experimental measure of sending a SMS.

In contrast to this former result stands the result presented in Table 6c. Our instrumental variable is highly correlated with the number of migrants in an individual's chatting network and controlling for individual and household characteristics suggests that intense contact with migrants through regular chatting significantly increases the likelihood to send a text message. This is reflective of actual voting that is positively affected by a higher number of international migrant within chatting networks as reported in column (4) of Table 6a. Regularly talking with one more migrant increases actual voting behavior by more than 3%.

7.2 Endogenous Network Formation

The above sub-section shows that migratory experiences of rural households and their networks in Mozambique positively affect the political participation of these households. One of the main drivers of these results is the migration experiences of members in an individual's kinship and chatting networks. This result raises the question whether individuals form networks based on similar political ideas and thus political behavior. If an individual forms network links based on political attitudes rather than based on other characteristics unrelated to political behavior our estimation results were spurious, capturing the endogenous formation of networks rather than the effect of migration on political participation.

To tackle this issue we run an extended 2SLS model similar to the one shown above. Additionally to instrumenting the migration decision of households, we instrument a network link between two households through indirect network links. For each village we construct a distance matrix indicating the number of nodes between two households given the shortest path between them. Figure 1 illustrates a distance graph based on the chatting network of one of the villages in our sample. The cell of the corresponding distance matrix will show a value of 1 for two distinct households if a direct link between the two households was reported; a value of 2 if two households are connected via a third household, i.e. they are friends-of-friends; a value of 3 if two households are connected via a third and fourth household, and so on. We restrict our instrument to network links of the second form with a distance of two. By construction this instrument is highly correlated with the existence of a direct link but does not directly affect our outcome variables, as individuals have not formed a network due to similar political behavior.

The results of this specification are reported in column (5) of Tables 5 and 6. Controlling for the endogenous creation of kinship relations, the effect of a higher degree of connectedness through family ties with migrants on actual voting increases to more than 5%.

Similarly, the effect of chatting ties with migrants increases actual voting behavior even after controlling for endogenous decisions on who to befriend. This effects holds also true for our experimental measure to send a text message. In this specification talking to one more migrant household on a regular basis increases the likelihood to send a text message by almost 4%. These results suggest that our findings are not driven by self-selection and endogenous network creation of individuals but rather that voters through migration assimilate to other political environments and transfer these values and increased knowledge back home.

7.3 Self-Reported Voter Turnout

One concern of this study is to test whether the effect of migrant networks on political behavior is also reflected in self-reported voting behavior when actual voting outcomes are not available. We therefore use an additional measure, exploiting a survey question, asking the respondent whether or not he/she participated in the 2009 elections. In Tables 4b, 5b and 6b we summarize the results for self-reported voter turnout.

Contrary to our expectations, we obtain no significant results for the amount of international migrants within a village on self-reported voter turnout – neither for the OLS nor the 2SLS models and independently of including individual and household controls. These results are reported in columns (1) to (4) of Table 4b.

The OLS models in Table 5b as reported in columns (1) and (3) demonstrate the relationship between more family members with migration experience and self-reported voting. These models seem to confirm the results obtained for actual voting behavior and suggest a positive effect of approximately 1.4%. These results are robust to the use of an instrumental variable given through the sum of kinship links with households' experiences of severe storms. As before, this instrument is constructed as the sum of storms a respective household suffered until 2007 if this household is connected with the respondent's household.

Nevertheless, controlling for the endogenous creation of kinship networks, migration experiences of relatives does not affect self-reported voting in this setting.

The last table seeks to test whether self-reported voting is affected by the number of migrant households a respondent regularly chats with. In Table 6b, we show highly significant positive effects of an increased number of migrants in chatting networks on self-reported voting behavior. One more migrant an individual regularly speaks with increases self-reported voting by 2% - this effect is robust to controlling for the endogenous creation of chatting networks.

8. Concluding Remarks

This paper aims at providing insights on how migration may affect political participation via social networks, by using original individual-level behavioral measures of political participation, as well as self-reported political participation and detailed household survey data.

Despite a few existing macroeconomic studies on this topic, the mechanisms underlying the diffusion of democratic values and ideas are still unclear. We develop a theoretical model allowing us to analyze the different mechanisms through which migration might affect political behavior. In the subsequent sections of this paper we examine the hypotheses drawn from the theoretical model for the case of Mozambique – a low-income country characterized by weak political institutions and large migratory flows. Our results suggest that the importance of political participation can be learned when people migrate to other countries, and that the obtained values might be passed on to peers. We find open expression of own political objectives, and an increase in the demand for political accountability to be mainly driven through intense contact with migrants through regular chatting. Or, in other words, if political participation becomes a social norm, and not only an

idea learned abroad. This idea is reflected in the importance of return migrants within a village and confirms the findings by Batista and Vicente (2011) for Cape Verde. In line with this former contribution, we also find that the effect of migration on political participation is mainly reflected in actual voting behavior. This behavior can be partly reflected in a relatively simple experiment based on text message sending. Self-reported voting behavior however seems to be a less reliable source to measure the impact of migration on political behavior in the context of this study and is easy to underestimate the positive effects migration has on democratization.

Our results suggest that migration policies whereby the best governed migration host countries open their doors to migrants from countries with poor accountability records might be an effective way to promote political participation in the migrant countries of origin. To the extent that better institutions contribute to economic development, enacting ‘brain circulation’ policies such as scholarship schemes in developed countries might be a successful development aid tool.

References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson.** 2005. "Institutions as a Fundamental Cause of Long-Run Growth." In *Handbook of Economic Growth*, ed. Aghion, Philippe, and Durlauff, Steven, Chapter 6. North-Holland.
- Akerlof, George A., and Rachel Kranton.** 2000. "Economics and Identity". *The Quarterly Journal of Economics*, Vol. CXV (3): pp. 715-753.
- Batista, Catia, Aitor Lacuesta, and Pedro Vicente.** 2012. "Testing the "Brain Drain" Hypothesis: Micro Evidence from Cape Verde." *Journal of Development Economics*, Vol. 97 (1): pp. 32-45.
- Batista, Catia, and Pedro C. Vicente.** 2011. "Do Migrants Improve Governance at Home? Evidence from a Voting Experiment." *World Bank Economic Review*, Vol. 25 (1): 77-104.
- Batista, Catia, Tara McIndoe-Calder, and Pedro Vicente.** 2014. "Return Migration, Self-Selection and Entrepreneurship in Mozambique." *CREAM Working Paper 17/14*.
- Beine, Michel, Frédéric Docquier, and Hillel Rapoport.** 2008. "Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers." *Economic Journal*, Royal Economic Society, Vol. 118 (528): pp. 631-652.
- Dhillon, Amrita, and Susana Peralta.** 2002. "Economic Theories of Voter Turnout." *Economic Journal*, 112, F332—F352.
- Docquier, Frédéric, Elisabetta Lodigiani, Hillel Rapoport, and Maurice Schiff.** 2011. "Emigration and Democracy." *IZA Discussion Paper No. 5496*.
- Edwards, Alejandra, and Manuelita Ureta.** 2003. "International Migration, Remittances and Schooling: Evidence from El Salvador." *Journal of Development Economics*, Vol. 75: pp. 429-461.

- Fafchamps, Marcel, Ana Vaz, and Pedro Vicente.** 2013. "Voting and Peer Effects: Experimental Evidence from Mozambique." *NOVAFRICA Working Paper No. 1303*.
- Freedom House.** 2013. "Freedom in the World 2013: Democratic Breakthroughs in the Balance". *Freedom House Publications*.
- Gould, David M.** 1994. "Immigrant links to home country: empirical implications for U.S. bilateral trade flows." *Review of Economics and Statistics*, Vol. 76: pp. 302-316.
- Javorcik, Beata S., Çağlar Özden, Mariana Spatareanu, and Cristina Neagu.** 2011. "Migrant Networks and Foreign Direct Investment." *Journal of Development Economics*, Vol. 94: pp. 231-241.
- Kugler, Maurice, and Hillel Rapoport.** 2007. "International labor and capital flows: complements or substitutes?" *Economics Letters*, Vol. 94: pp. 155-162.
- Mahmoud, Toman Omar, Hillel Rapoport, Andreas Steinmayr, and Christoph Trebesch.** 2014. "The Effect of Labor Migration on the Diffusion of Democracy: Evidence from a Former Soviet Republic." *IZA Discussion Paper No. 7980*.
- Mesnard, Alice, and Martin Ravallion.** 2006. "The Wealth Effect on New Business Startups in a Developing Economy." *Economica*, Vol. 73: pp. 367-392.
- Rauch, James E., and Vitor Trindade.** 2002. "Ethnic Chinese Networks in International Trade." *The Review of Economics and Statistics*, Vol. 84 (1): pp. 116-130.
- Spilimbergo, Antonio.** 2009. "Democracy and Foreign Education." *American Economic Review*, American Economic Association, Vol. 99 (1): pp. 528-43.
- UNDP.** 2013. "Human Development Report 2013: The Rise of the South." *United Nations Development Programme Publications*.
- Yang, Dean.** 2008. "International Migration, Remittances, and Household Income: Evidence from Migrants' Exchange Rate Stocks" *The Economic Journal*, Vol. 118: pp. 591-630.

TABLES

Table 1: *Migration - Household Characteristics. All Households (%)*

All Households		
	Number of Links	Migration Experience
Households with <i>at least one migrant</i>		32.41
Migrant households in <i>geographical network</i>	0	17.50
	1	15.63
	2	10.48
	3	8.10
	4	11.10
	5	13.02
	6	6.85
	7	5.55
	8	4.25
	9	5.66
	10	1.87
<i>Kinship relations</i> with migrant households	0	58.28
	1	24.28
	2	7.89
	3	4.34
	4	2.34
	5	1.04
	6	1.47
	7	0.09
	8	0.09
	9	0.17
<i>Chatting relations</i> with migrant households	0	51.78
	1	23.59
	2	8.76
	3	5.55
	4	4.42
	5	2.43
	6	1.91
	7	0.69
	8	0.52
	9	0.35

Table 2: *Destination Countries of All Migrants (%)*

Destination Countries	
South Africa	75.32
Tanzania	7.68
Malawi	5.12
Germany	2.38
Swaziland	2.19
Zimbabwe	1.83
Other European	1.83
Portugal	1.46
Cuba	1.46
Other African	0.91
Other	0.73

Table 3: *Summary Statistics. All Households.*

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Sending Text Message	1147	0.18	0.38	0	1
Self-Reported Voter Turnout	1121	0.91	0.28	0	1
Inked Finger Indicator	1121	0.29	0.45	0	1
HH Head Gender	1766	0.45	0.5	0	1
HH Head Age	1750	37.6	13.6	15	88
HH Maximum Level of Schooling	1763	2.45	1.72	0	8
Total Access to TV, Radio or Computer	1764	1.14	0.86	0	3

Table 4: Effects of Migrants in Geographical Network

Standard errors in parentheses, clustered at enumeration area level, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Province fixed effects included in all specifications. Included Individual Controls: gender of household head (male), age of household head (years), age^2 , max. education of household head (level of education), and total access to media.

Table 4a: **Actual Voting**

	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
International Migrants within locality	0.022*** (0.007)	0.055*** (0.013)	0.025*** (0.007)	0.059*** (0.013)
Individual Controls Included	NO	NO	YES	YES
F-Statistic	-	62.56	-	62.16
Observations	1121	1121	1111	1111

Instrumental Variable: Sum over all households within ea of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Kleibergen-Paap Wald F-statistics.

Table 4b: **Self-Reported Voting**

	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
International Migrants within locality	0.004 (0.003)	0.006 (0.008)	0.004 (0.003)	0.009 (0.008)
Individual Controls Included	NO	NO	YES	YES
F-Statistic	-	62.56	-	62.16
Observations	1121	1121	1111	1111

Instrumental Variable: Sum of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Kleibergen-Paap Wald F-statistics.

Table 4c: **Sending Text Message**

	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
International Migrants within locality	-0.00240 (0.00754)	0.0294** (0.0128)	-0.00137 (0.00769)	0.0403*** (0.0145)
Individual Controls Included	NO	NO	YES	YES
F-Statistic	-	66.05	-	70.17
Observations	1147	1147	1137	1137

Instrumental Variable: Sum of number of droughts each respective household suffered after household head turned 17 - excluding droughts that occurred during the years 2007-2009. Kleibergen-Paap Wald F-statistics.

Table 5: Effects of Migrants in Kinship Network

Standard errors in parentheses, clustered at enumeration area level, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Province fixed effects included in all specifications. Included Individual Controls: gender of household head (male), age of household head (years), age^2 , max. education of household head (level of education), and total access to media.

Table 5a: **Actual Voting**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(5)
International Migrants within Kinship Network	0.0259** (0.0119)	0.0330** (0.0139)	0.0297** (0.0119)	0.0361*** (0.0138)	0.0501* (0.0266)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	63.35	-	60.37	33.38
Observations	1121	1121	1111	1111	1111

Instrumental Variable: Sum of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree kinship links between households. Kleibergen-Paap Wald F-statistics.

Table 5b: **Self-Reported Voting**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(5)
International Migrants within Kinship Network	0.0148*** (0.00482)	0.0230*** (0.00653)	0.0135** (0.00520)	0.0218*** (0.00694)	0.0186 (0.0169)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	63.35	-	60.37	33.38
Observations	1121	1121	1111	1111	1111

Instrumental Variable: Sum of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree kinship links between households. Kleibergen-Paap Wald F-statistics.

Table 5c: **Sending Text Message**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(5)
International Migrants within Kinship Network	0.00362 (0.0116)	0.00630 (0.0140)	0.00958 (0.0123)	0.0166 (0.0148)	0.0325 (0.0200)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	167.42	-	159.33	119.10
Observations	1147	1147	1137	1137	1137

Instrumental Variable: Sum of number of droughts each respective household suffered after household head turned 17 - excluding droughts that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree kinship links between households. Kleibergen-Paap Wald F-statistics.

Table 6: Effect of Migrants in Chatting Networks

Standard errors in parentheses, clustered at enumeration area level, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Province fixed effects included in all specifications. Included Individual Controls: gender of household head (male), age of household head (years), age^2 , max. education of household head (level of education), and total access to media.

Table 6a: **Actual Voting**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(6)
International Migrants within Chatting Network	0.021** (0.009)	0.030** (0.012)	0.025*** (0.009)	0.033*** (0.012)	0.039* (0.020)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	28.31	-	27.49	38.79
Observations	1121	1121	1111	1111	1111

Instrumental Variable: Sum of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree chatting links between households. Kleibergen-Paap Wald F-statistics.

Table 6b: **Self-Reported Voting**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(6)
International Migrants within Chatting Network	0.015*** (0.005)	0.021*** (0.007)	0.015*** (0.005)	0.020*** (0.007)	0.024* (0.013)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	28.31	-	27.49	38.79
Observations	1121	1121	1111	1111	1111

Instrumental Variable: Sum of number of severe storms each respective household was exposed to after household head turned 17 - excluding storms that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree chatting links between households. Kleibergen-Paap Wald F-statistics.

Table 6c: **Sending Text Message**

	OLS	IV	OLS	IV	IV
	(1)	(2)	(3)	(4)	(5)
International Migrants within Chatting Network	0.007 (0.009)	0.017* (0.010)	0.012 (0.009)	0.025** (0.011)	0.038** (0.017)
Individual Controls	NO	NO	YES	YES	YES
F-Statistic	-	119.38	-	116.80	104.37
Observations	1147	1147	1137	1137	1137

Instrumental Variable: Sum of number of droughts each respective household suffered after household head turned 17 - excluding droughts that occurred during the years 2007-2009. Column (5) additionally controls for the endogenous creation of networks through second-degree chatting links between households. Kleibergen-Paap Wald F-statistics.

FIGURES

Figure 1: *Illustration of a Chatting Network*

