Migration, Political Institutions, and Social Networks in Mozambique[*]

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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, 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. These results are driven by the importance of return migrants (as opposed to current migrants) within a locality. Furthermore, we find our results to be robust to the use of instrumental variables - namely household size and 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 attitudes, effects of emigration in origin countries, behavioral measure, household survey, Mozambique, sub-Saharan Africa.

JEL Codes: D72; F22; O15.

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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.

The 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.[1] 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

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[1] 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.

promote democracy, but left the question unanswered as to which specific mechanisms underlie this effect.

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 countries of origin.

To test our hypothesis that migration may change identities, and thereby fosters political participation and the quality of political institutions, we estimate a heterogeneous reinforcement effect model. 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 network. The estimated network reinforcement effects are tested by examining whether the effect on political participation is larger for more connected individuals.

Using detailed household survey data and a behavioral measure of political participation, we estimate the effect of social and geographical networks of migrants – both return and current 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 migrants and non-migrants. 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, use a behavioral measure reflecting respondents' political participation. This behavioral 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 furthermore distinguish between network effects of current migrant households and the impact of households with at least one return migrant. Additionally, we report estimation results for households in the southern and northern provinces of Mozambique separately to

account for heterogenous effects given through different political regimes in the respective typical destination countries for these provinces.

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 variation in household size, and 'quasi-natural experiments' given by natural catastrophes, i.e. severe storms. 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 measure of political participation we employ. These effects seem to be mainly driven by the number return migrants in a village and 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

In order to test how migrant networks affect political behavior, we begin by setting a theoretical framework that allows us to predict which network types are most influential. Political participation is traditionally modeled as the outcome of an expected cost-benefit analysis.[2] 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 candidates. Our behavioral 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:

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

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.

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[2] See for a detailed description Dillon and Peralta (2002).

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:

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

Let there exist a set of social categories[3], $\boldsymbol{C}$. 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 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}.[4] Belonging to a social category implies an appropriate (or rather expected) behavior for this category that is determined by the set of prescriptions $\boldsymbol{P}$. 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.

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

[4] 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.

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' actions may change prescriptions as changes in behavior become more accepted.[5] 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, **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

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[5] 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.

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. Given our definition of a social category, different types of networks are expected to capture the indirect effects of migration differently. As a network based on friendships is likely to reflect the most common characteristics among peers, our theoretical model suggests friendship networks to show the strongest impact of migration on political behavior.

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 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).[6] The

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[6] World Development Indicators (2015), World Bank.

majority of the Mozambican population, around 81%[7], 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.[8]

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 African 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 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.

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[7] CIA World Factbook (2015).
[8] Red Cross Mozambique (2013).

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,[9] 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.

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:

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

$$V_i^* = \alpha + \beta mig\_HH_i + \gamma \frac{1}{N} \sum_{j \neq i} Network_{ij} * mig\_HH_j + \delta X_i + \varepsilon_i \qquad (4.2)$$

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 individual's household migration experience, denoted by the dummy variable mig_HH_i, and the links with migrants in the respondent's network, $\sum_{j \neq i} Network_{ij} * mig\_HH_j$, as well as by a vector of individual and geographic characteristics X_i. The number of links with

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[9] Freedom House (2013).

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 household migration experience of individual j. 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, regularly chat with each other, or have a kinship relation.[10]

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 age^2, turnout in 2004, and household expenditures and the possession of a bike as a proxy for income. To capture effects from a greater information set of an individual, this vector furthermore includes the levels of schooling an individual completed, as well as the access to information schemes such as radios, computers or television. To differentiate between network effects due to a higher degree of connectedness in general and connectedness with migrants, we furthermore control for the size of kinship and chatting networks, i.e. the number of family ties and chatting links a respondent indicates to have within a location. We also include province controls in all our regressions. We estimate our model by using ordinary least squares.[11] 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

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[10] Note that these network links are directed, i.e. individual j 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.

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

Oxford. The four provinces covered by the survey are Cabo Delgado, Zambézia, Gaza, and Maputo-Province. The survey's sampling framework was the electoral map of the country. The dataset contains a total of 161 enumeration areas (EA) – including 1.766 respondents, approximately 11 per EA. 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. This increases to 53.43% for the Southern Provinces (Maputo and Gaza) and decreases to 11.71% in the Northern Provinces (Zambézia and Cabo Delgado). In the full sample 15.72% of all households report at least one current migrant whereas 13.85% have at least one household member with a migratory experience that returned home. Focusing on the Southern provinces only these percentages increase to 29.29% and 23.46% for current and return migrants respectively. In the Northern provinces migration is a less common phenomenon with only 2.36% current migrant and 4.39% return migrant households. 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 by an SMS-based behavioral measure. We furthermore complement our analysis by examining the impact of international migration on self-reported voter turnout.

Behavioral Measure

To obtain an actual behavioral measure as opposed to simply limiting ourselves to analyzing self-reports from the survey, we conducted a simple behavioral experiment with our survey respondents.

We proposed survey 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 an SMS message is a costly action, which we interpret as an incentive-compatible measure of political participation.

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.

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. We furthermore weight a link that is commonly reported by two respondents double as we interpret this relationship to be even stronger than a one-sided indication of friendship.

The number of households with current and return migrants a respondent is connected to is computed in the same way focusing on current and return households respectively.

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 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 individual migration effect, and 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 index[12] 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 SMS-based behavioral measure. Table 4 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 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.

Contrary, to these expectations we observe a negative (though not statistically significant) individual effect of migration on demand for better political institutions as reported in column (1) of Table 4. We furthermore find a statistically significant (at the ten percent level) negative effect of a higher number of migrants in a locality as shown in column (2). Although not statistically significant, both a higher number of migrants in an individual's kinship as well as chatting network seem to encourage an individual to send a text message – we present these results in columns (3) and (4). All of these estimations include province fixed effects and include a number of household-specific controls as reported above. To

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[12] See for example the Democracy Index by the Economist Intelligence Unit for further details.

better understand these outcomes, the following sections examine two different possible mechanics driving these results, namely the distinction between current and return migrants and the relevance of migrant destinations proxied for by the geographical location of the four provinces and their distances to these destination countries.

6.2 Current vs. Return Migrants

In columns (5) to (8) of Table 4 we present the results for a higher demand for better political institutions while distinguishing between current and return migrants including the same controls as before. When we break down our analysis into two different types of migrants, we observe that the direct impact of return migrants and the effect of a higher number of return migrants in a geographical network is strikingly higher and more significant than the effect for current migrant households. One additional return migrant in an individual's locality decreases his/her probability to send a text message by more than 3%. This result is significant at the one percent level. On the contrary, one more household with a current migrant increases an individual's likelihood to send a text message by almost 2%. This first result is intuitive, as it seems natural that the actual presence of migrants in a locality or household is more likely to induce effects than migrants that still live abroad. Nevertheless, examining the different types of social networks (kinship and chatting relations) we observe a positive effect of current migrant households. Whereas the number of family members with migratory experiences seems not to affect the demand for better political institutions, closer contact with current migrant households through chatting relations increases the likelihood to send a text message by approximately 3%. Note also, though not statistically significant, the effect of return migrants in chatting networks is again negative. One possible explanation for the negative impact of return migrants could lie in the political history of destination countries as these emigrants were exposed to less democratic values and ideas abroad than current migrants in the same destination countries.

As migrant destinations in Mozambique are mainly determined by geographic proximity, we split our sample into the southern (Maputo-Province and Gaza) and the northern (Cabo Delgado and Zambézia) provinces to examine the relevance of migration destination countries on political behavior. Columns (1) to (4) and (5) to (8) of Table 5 present the results for the southern and northern provinces respectively. For the estimations on the split sample we focus on presenting the tables containing the distinction between current and return migrants as we have shown its importance above.

The first striking result is that the number of migrants in social networks of individuals in the southern provinces does not seem to have an effect on the likelihood of sending a text message. However, increasing the number of households with current migrants increases the likelihood of sending a SMS by almost 2.7% but decreases it by 2.6% for return migrant households. These estimates are statistically significant at the 5% level. Even though we observe the same pattern for the Northern provinces, we additionally observe a significant and negative effect for return migrants in an individual's chatting network. The effects for both return and current migrants in kinship relations are not statistically significant for the southern or northern provinces.

7. Robustness Checks

In section 6, we reported empirical evidence for Mozambique suggesting that emigration affects political participation through individual migratory experiences and migrant networks where the general number of migrant households in a location and intense chatting relations with migrant households are found to be most important. However, migration might be correlated with individual political attitudes through unobservable factors that cannot be controlled for in our econometric analysis. This would imply a correlation

between our explanatory variable and the regression error term. Additionally to omitted variable biases, we might face a reflection problem if the migration experience of one household influences the migration decision of its social network, as shown in Angrist (2014). To overcome these concerns, 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. Furthermore, our specification might suffer from a reflection problem if the migration decision of one individual affects the migration decision of others. This might be the case if for example an existing diaspora reduces the cost of migration as it facilitates labor market integration in destination countries.

To tackle these issues we use an instrumental variable approach to verify our OLS estimates. As instruments for the migration experiences of a household we use household size, and the occurrence of a natural catastrophe (in particular a severe storm) affecting harvests or cattle. These are often the livelihood of many families, as especially in rural areas 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 catastrophes[13] in Mozambique on a district level, allowing for large variation between EAs. 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. Similarly, the number of household members should affect an individual's pressure to migrate as labor opportunities in households engaged in agriculture are scarce, and decline with the number of individuals from the same household engaged in farming.

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

$$y_i = \alpha_i + \beta \widehat{mig\_HH_i} + \gamma \sum_{j \neq i} \widehat{Network_{ij} * mig\_HH_j} + \delta X_i + \varepsilon_i$$

$$\widehat{mig\_HH_i} = \alpha_i + \theta_1 IV_{1i} + \theta_2 \sum_{j \neq i} Network_{ij} * IV_{1j} + \delta X_i + \varepsilon_i$$

$$\sum_{j \neq i} \widehat{Network_{ij} * mig\_HH_j} = \alpha_i + \theta_1 IV_{1i} + \theta_2 \sum_{j \neq i} Network_{ij} * IV_{1j} + \delta X_i + \varepsilon_i$$

In the above illustration we show the 2SLS estimations with only two instrumental variables. Additionally we report 2SLS regressions with four instrumental variables in the tables below. The first stage includes both an instrumental variable for the individual migration experiences as well as the interaction between network links and the instrument for household *j*. The vector X_i contains the individual and geographic controls as stated above. Note that the first stage regressions of one endogenous variable also include the instrumental variable for the respective other first stage regressions as a 2SLS estimation does not allow for a clear attribution of instrumental variables to one specific endogenous variable.

The 2SLS estimation results for sending a text message are reported in Table 8. As shown above for the OLS estimations, we find a significant negative effect of direct

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

migration experiences of return migrant households on political demand. On the contrary to our OLS estimates, there seems to be no effect from the number of migrants in a locality but a significant positive effect both for kinship and chatting relations with migrants.

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 chatting network. 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 matrix based on the chatting network of one of the villages in our sample. The cell of a 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.

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The results of this specification are reported in columns (5) and (7) of Table 8. They confirm the above findings that migration positively affects political participation in Mozambique through kinship and intense chatting relations with migrants where chatting relations have a slightly higher impact of more than 8% at the 5% significance level. 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 that our behavioral measure does not capture an individual's actual voting behavior but only an abstract demand for better political institutions without causing more democratic behavior. 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 6 and 7 we summarize the results for self-reported voter turnout.

Contrary to our expectations, we obtain no significant results for own migration experiences, the geographical or social networks when examining the full sample. Distinguishing between the different provinces – southern and northern provinces – we obtain strikingly different results for the two regions. A higher number of links with return migrants in the kinship network of individuals in the southern provinces seems to have a positive effect. Whereas the results for households in the Northern provinces are in line with our results obtained before, pointing towards a positive impact of current and a negative effect of return migrants. Especially, the direct effect of current migrants in a household, and a higher number of current migrants in an individual's chatting network have positive effects that are significant at the 1% level and increase the likelihood to report a vote by more than 5%.

We cannot identify these effects using instrumental variable estimation, as the complexity of our analysis does not allow us to differentiate between current and return migrant effects with the currently available exogenous variables. The results for the 2SLS estimations for self-reported voter turnout are nevertheless reported in Table 9.

8. Concluding Remarks

This paper aims at providing insights on how migration may affect political participation, directly and indirectly via social networks, by using an original individual-level behavioral measure 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, and to draw first conclusions on the importance of different network structures. 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.

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. Nevertheless, we cannot know with certainty that this increase in political participation comes with an improvement in democratic structures. To determine the direction of political change, a further discussion on the different types of migration and how these influence the opinions and attitudes of other migrants and non-migrants in origin countries is needed.

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TABLES

Table 1: *Household Characteristics: All Households (%)*

	All Provinces	Southern Provinces	Northern Provinces
	Migration Experience		
Households with at least one migrant	32.41	53.43	11.71
Households with at least one *current migrant*	15.72	29.29	2.36
Households with at least one *return migrant*	13.85	23.46	4.39

Source: Own survey.
[1]Southern Provinces: Maputo-Province & Gaza
[2]Nothern Provinces: Zambézia & Cabo Delgado

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

Source: Own survey.

Table 3: *Summary Statistics. All Households.*

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Sending Text Message	1147	0.1752	0.3803	0	1
Self-Reported Voter Turnout	1121	0.91351	0.2813	0	1
Turnout 2004	1766	0.393	0.1407	.135	.996
HH Head Gender	1766	0.4513	0.4978	0	1
HH Head Age	1750	37.596	13.584	15	88
HH Maximum Level of Schooling	1763	2.4481	1.721	0	8
HH Size, Total Number of Persons	1765	5.8711	2.848	0	29
HH Expenditure, MZN per day	1676	128.7216	163.9582	0	2380.952
Owning a Bike	1764	0.3447	.04754	0	1
Total Access to TV, Radio or Computer	1764	1.141	0.863	0	3

Source: Own survey.

Table 4: *Demand for Better Political Institutions. OLS Estimates for Full Sample*

					OLS			
Sending Text Message	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household (HH) Migration Experience	-0.0412 (0.0294)	-0.0321 (0.0292)	-0.0421 (0.0300)	-0.0452 (0.0301)		-0.0475 (0.0297)	-0.0433 (0.0293)	-0.0483 (0.0294)
HH with Current Migrant					-0.0123 (0.0380)			
HH with Return Migrant					-0.0772** (0.0328)			
Links with Migrants in Geographical Network		-0.0191* (0.00971)						
Links with Migrants in Kinship Network			0.00555 (0.0169)					
Links with Migrants in Chatting Network				0.00542 (0.0100)				
Links with Current Migrants in Geographical Network						0.0181* (0.0103)		
Links with Return Migrants in Geographical Network						-0.0348*** (0.0124)		
Links with Current Migrants in Kinship Network							0.0325 (0.0225)	
Links with Return Migrants in Kinship Network							-0.00190 (0.0250)	
Links with Current Migrants in Chatting Network								0.0303** (0.0147)
Links with Return Migrants in Chatting Network								-0.00977 (0.0173)
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1082	1082	1082	1082	1082	1082	1082	1082

Standard errors in parentheses, clustered at enumeration area level, * p<0.10, ** p<0.05, *** p<0.01
Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (3) and (4) respectively.

Table 5: *Demand for Better Political Institutions. OLS Estimates for Split Sample*

Sending Text Message	Southern Provinces				Northern Provinces			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household (HH) Migration Experience		-0.0121 (0.0344)	-0.00770 (0.0341)	-0.0149 (0.0351)		-0.101** (0.0480)	-0.104** (0.0491)	-0.0875* (0.0468)
HH with Current Migrant	-0.00196 (0.0391)				-0.0298 (0.0868)			
HH with Return Migrant	-0.0473 (0.0378)				-0.229*** (0.0409)			
Links with Current Migrants in Geographical Network		0.0267** (0.0111)				0.00529 (0.0340)		
Links with Return Migrants in Geographical Network		-0.0259** (0.0127)				-0.0602* (0.0312)		
Links with Current Migrants in Kinship Network			0.0411 (0.0283)				0.130 (0.116)	
Links with Return Migrants in Kinship Network			-0.00390 (0.0285)				-0.0147 (0.0586)	
Links with Current Migrants in Chatting Network				0.0180 (0.0192)				0.127 (0.0965)
Links with Return Migrants in Chatting Network				-0.00187 (0.0200)				-0.0513* (0.0295)
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	513	513	513	513	569	569	569	569

Standard errors in parentheses, clustered at enumeration area level, * p<0.10, ** p<0.05, *** p<0.01
Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (3) and (4) respectively.

Table 6: *Self-Reported Turnout. OLS Estimates for Full Sample*

Respondent Reports to Have Voted				OLS				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household (HH) Migration Experience	0.0247 (0.0197)	0.0246 (0.0199)	0.0244 (0.0193)	0.0186 (0.0201)		0.0244 (0.0196)	0.0222 (0.0194)	0.0181 (0.0196)
HH with Current Migrant					0.0304 (0.0265)			
HH with Return Migrant					0.0203 (0.0254)			
Links with Migrants in Geographical Network		0.000215 (0.00508)						
Links with Migrants in Kinship Network			-0.00331 (0.00724)					
Links with Migrants in Chatting Network				-0.00275 (0.00528)				
Links with Current Migrants in Geographical Network						0.000102 (0.00670)		
Links with Return Migrants in Geographical Network						-0.00752 (0.00792)		
Links with Current Migrants in Kinship Network							-0.0108 (0.0171)	
Links with Return Migrants in Kinship Network							0.0137 (0.0199)	
Links with Current Migrants in Chatting Network								-0.00346 (0.0102)
Links with Return Migrants in Chatting Network								-0.000224 (0.0116)
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1060	1060	1060	1060	1060	1060	1060	1060

Standard errors in parentheses, clustered at enumeration area level, * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (3) and (4) respectively.

Table 7: *Self-Reported Turnout. OLS Estimates for Split Sample*

Respondent Reports to Have Voted	Southern Provinces				Northern Provinces			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household (HH) Migration Experience		0.0213 (0.0246)	0.0200 (0.0240)	0.0171 (0.0245)		0.0288 (0.0301)	0.0422 (0.0343)	0.0159 (0.0324)
HH with Current Migrant	0.00995 (0.0298)				0.111*** (0.0314)			
HH with Return Migrant	0.0184 (0.0286)				0.0446 (0.0586)			
Links with Current Migrants in Geographical Network		-0.00177 (0.00677)				0.0124 (0.0323)		
Links with Return Migrants in Geographical Network		-0.00192 (0.00885)				-0.0274 (0.0175)		
Links with Current Migrants in Kinship Network			-0.0232 (0.0154)				0.000649 (0.0556)	
Links with Return Migrants in Kinship Network			0.0383** (0.0170)				-0.0489 (0.0343)	
Links with Current Migrants in Chatting Network				-0.000267 (0.00847)				0.0518*** (0.0181)
Links with Return Migrants in Chatting Network				0.0110 (0.0138)				-0.0179 (0.0205)
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	513	513	513	513	569	569	569	569

Standard errors in parentheses, clustered at enumeration area level, * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (3) and (4) respectively.

Table 8: *Demand for Better Political Institutions. 2SLS Estimates for Full Sample*

				2SLS			
Sending Text Message	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Own Migration Experience	-0.180 (0.177)		-0.150 (0.202)	-0.311 (0.230)	-0.342 (0.250)	-0.315 (0.228)	-0.449 (0.299)
HH with Current Migrant		0.356 (0.310)					
HH with Return Migrant		-0.621** (0.313)					
Links with Migrants in Geographical Network			-0.00398 (0.0341)				
Links with Migrants in Kinship Network				0.0662* (0.0374)	0.0621* (0.0359)		
Links with Return Migrants in Chatting Network						0.0523* (0.0301)	0.0831** (0.0414)
Instruments	A+B	A+B	A+B	A+B	A+B+C	A+B	A+B+C
F-Statistic on Excluded Instruments	37.44	2.19	7.44	12.84	12.51	14.43	5.34
P-Value of Overidentification Test	0.77	-	0.79	0.20	0.87	0.79	0.85
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Observations	1082	1082	1082	1082	1082	1082	1082

Standard errors in parentheses, clustered at enumeration area level, * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Columns (1) and (2) report the 2SLS estimation results for instrumenting a household's migration decision; columns (3) - (7) instrument a households network connections as well whereas columns (5) and (7) control for the endogenous creation of kinship and chatting networks. Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (4) and (6).

Instrumental Variable set A: Household size of respondent's household & Household size of all other households summed.

Instrumental Variable set B: Occurrence of a severe storm after the household head turned 17 & Sum of all severe storms that occurred after household head of other households turned 17.

Instrumental Variable set C: Network links with shortest path length equal two.

Table 9: *Self-Reported Turnout. 2SLS Estimates for Full Sample*

				2SLS			
Self-Reported Turnout	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Own Migration Experience	-0.0196		0.130	-0.0514	-0.0369	-0.0473	-0.104
	(0.0676)		(0.150)	(0.103)	(0.101)	(0.106)	(0.143)
HH with Current Migrant		-0.115					
		(0.206)					
HH with Return Migrant		0.241					
		(0.242)					
Links with Migrants in Geographical Network			-0.0240				
			(0.0201)				
Links with Migrants in Kinship Network				0.0105	0.00720		
				(0.0251)	(0.0202)		
Links with Return Migrants in Chatting Network						-0.00280	0.0280
						(0.0172)	(0.0249)
Instruments	A+B	A+B	A+B	A+B	A+B+C	A+B	A+B+C
F-Statistic on Excluded Instruments	36.41	2.19	7.05	12.52	12.51	13.94	5.15
P-Value of Overidentification Test	0.28	-	0.69	0.13	0.45	0.56	0.46
Individual Controls Included	YES	YES	YES	YES	YES	YES	YES
Province Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Observations	1060	1060	1060	1060	1060	1060	1060

Standard errors in parentheses, clustered at enumeration area level, * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Columns (1) and (2) report the 2SLS estimation results for instrumenting a household's migration decision; columns (3) - (7) instrument a households network connections as well whereas columns (5) and (7) control for the endogenous creation of kinship and chatting networks. Included Individual Controls: gender of household head (male), age of household head (years), age^2, max. education of household head (level of education), household expenditures (MZN/day), possession of bike, total access to media, voter turnout in 2004, and size of kinship and chatting network for columns (4) and (6).

Instrumental Variable set A: Household size of respondent's household & Household size of all other households summed.
Instrumental Variable set B: Occurrence of a severe storm after the household head turned 17 & Sum of all severe storms that occurred after household head of other households turned 17.
Instrumental Variable set C: Network links with shortest path length equal two.

Figure 1: *Illustration of a Chatting Network*