Do Migrant Social Networks Shape Political Attitudes and Behavior at Home? *

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Abstract

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What is the role of international migrants and, more specifically, of migrant networks in shaping political attitudes and behavior in migrant sending countries? We propose that migration might change social norms for political participation, while it may also improve knowledge about better quality political institutions. Hence, international migration might increase political awareness and participation both by migrants and by other individuals in their networks. To test this hypothesis, we use detailed data on different types of migrant networks, namely geographic, kinship and chatting networks, as well as several different measures of political participation and electoral knowledge - namely, self-reports, behavioral and actual voting measures. These data were purposely collected around the time of the 2009 elections in Mozambique, a country with substantial emigration to neighboring countries and with one of the lowest political participation rates in the southern Africa region. The empirical results show that the number of migrants an individual is in close contact through regular chatting within a village significantly increase political participation of residents in that village – more so than family links to migrants. Our findings are consistent with both improved knowledge about political processes, and increased intrinsic motivation for political participation being transmitted through migrant networks. These results are robust to controlling for self-selection into migration as well as endogenous network formation. Our work is potentially relevant for the many contexts of South-South migration where both countries of origin and destination are imperfect political systems. It shows that even in this context there may be domestic gains arising from international emigration.

Keywords: International migration, social networks, political participation, information, diffusion of political norms, governance.

JEL Codes: D72; D83; F22; O15.

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.[4] 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 overcoming liquidity constraints, promoting human capital accumulation and entrepreneurship, and increasing foreign direct investment and international trade.[5] While the importance of good political institutions for economic development is by now well established, as influentially described by Acemoglu, Johnson, and Robinson (2005), one area that has deserved relatively less attention in the economics literature is the relationship

[4] World Bank (2018) *"Moving for Prosperity – Global Migration and Labor Markets".*

[5] Edwards and Ureta (2003) and Yang (2008) described how remittances may provide the financial resources to overcome credit constraints in migrant 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 et al. (2017). 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 et al. (2008) and Batista et al. (2012) is the "brain gain" hypothesis put forward by Mountford (1997) and Stark et al. (1997, 1998), according to which the simple prospect of emigration can promote human capital accumulation in migrant origin countries.

between international migration and the quality of political institutions in countries of migrant origin.[6]

The main objective of this paper is to make a specific contribution to this literature by examining in detail different mechanisms through which international migration may play a role in the diffusion of improved political attitudes and behavior of those left behind. For this purpose, we make use of a number of different measures of political participation (namely self-reports, behavioral and actual measures of political behavior), and of different types of migrant social networks (geographical, kinship, and chatting networks).

We start by proposing a conceptual framework that describes the ways through which migration may potentially change political participation. We identify two main potential mechanisms through which migrant networks can affect individual political attitudes and behavior: migration may change social norms and, in this way, intrinsic motivation for political participation; migration may also improve information and knowledge about better quality political institutions. Through these mechanisms, international migration can increase political awareness and participation. This effect may not only influence migrants themselves, but also trigger peer effects - thus impacting the social network of current and return migrants in their country of origin.

In order to evaluate whether international migration may foster political participation, and examine the importance of different types of migrant networks in this transmission

[6] Throughout this paper, we define the quality of political institutions as combining compliance to the electoral principle of democracy where rulers are made responsive to citizens through periodic elections, together with compliance to the participatory principle that can be summarized as active participation by citizens in all political processes - including not only elections, but also other forms of political engagement, as described by Coppedge et al. (2016).

process, we exploit data from a nationally representative household survey conducted immediately before and after the 2009 national elections in Mozambique. These elections followed the lowest election turnout ever in Mozambique in 2004 (33% according to official numbers), which was also the lowest among all SADC countries. It therefore seems like an ideal context in which to study the role of the increasingly important but relatively understudied South-South migration in transmitting norms in a context of imperfect democracies.

Our empirical analysis investigates whether an individual who is connected to one or more international migrants is affected differently in terms of his/her political attitudes and behavior depending on the characteristics of these connections. To evaluate in detail the different diffusion mechanisms of information and political attitudes through international migrant networks, we use different migrant network measures. Specifically, we distinguish between *migrant geographical networks*, i.e. how many households with at least one migrant in the family exist in the respondent's village; *migrant kinship networks*, i.e. the number of migrant households that are related by family links to the respondent; and *migrant chatting networks*, i.e. the number of migrant households the respondent regularly chats with. We use several survey and behavioral measures related to political participation and electoral knowledge – namely, self-reported voting behavior; a measure of actual voter turnout; a measure of electoral information; and a behavioral measure reflecting the respondents' intrinsic motivation for political participation.

For the purpose of investigating the relationship between migrant social networks and political attitudes and behavior, we estimate a Linear Probability Model (LPM), controlling for individual, household, and location characteristics. Because international migration may potentially be correlated with political attitudes via unobserved factors that cannot be controlled for in our regressions, we also conduct Two-Stage Least Squares (2SLS) regressions

that exploit 'quasi-natural experiments' given by the history of natural catastrophes that may plausibly have exogenously created migration flows. In addition, acknowledging the possibility of endogenous migrant network formation, particularly in the cases of chatting and kinship, we use secondary network links ("friends of friends" in the case of chatting networks) as an exclusion restriction to limit the potential correlation between the characteristics of individuals in Mozambique and the migrants in their networks.

The empirical results we obtain suggest that political participation can be learned and valued more highly when people migrate to countries with better quality political institutions, and that the newly obtained political participation norms may be passed on to peers. We confirm existing results on the positive effects of geographically close migrant households on political engagement – for example, Batista and Vicente (2011) for Cape Verde. But we furthermore find that increased political participation during elections seems to be mainly driven through contact with migrant households through regular chatting, rather than through family links to migrants. The evidence we examine is consistent with both information transmission and changed social norms for political participation via chatting with migrants. Family links seem to convey some information about the political process, but do not seem to significantly affect intrinsic motivation for political participation. Our findings are robust to endogeneity concerns about unobservable self-selection of migrants and endogenous network formation.

The remainder of the paper is organized as follows. Section 2 presents a broad literature review on the relationship between international emigration and political remittances, highlighting the original contribution of this paper. Section 3 proposes a conceptual framework to describe different ways through which migratory experiences may influence political behavior. Section 4 describes the country context under which the empirical part of this study

was carried out. Section 5 follows with an introduction to the dataset and its descriptive statistics. Next, section 6 puts forward an econometric model and the estimation strategy to identify the effects of interest. Finally, section 7 presents the empirical results of the LPM and 2SLS estimations and robustness tests, and section 8 concludes.

2. Literature Review

The economic, political and social importance of financial remittances sent by migrants to their home countries has by now been well-established and the focus of a large body of literature.[7] It has only been more recently that social scientists have focused their attention on the impacts of "social remittances". This designation was proposed by Levitt (1998) to emphasize that, in addition to financial remittances, migrants transfer new knowledge, practices, and norms to their countries of origin. Examples of social remittances that migrants may transfer back to their home countries are increased valuation of education and health, changed fertility norms, improved organizational skills and entrepreneurship, and higher demand for political accountability.[8]

The question of whether international migration improves the quality of the domestic political system in the migrant countries of origin is related to the traditional ´brain drain´ debate put forward by Gruber and Scott (1966) and Baghwati and Hamada (1974). Indeed, emigration has been traditionally regarded as hurting the supply of well-prepared individuals

[7] Brown and Jimenez-Soto (2015) provide a recent overview.

[8] Beine et al. (2013) and Bertoli and Marchetta (2015), for example, provide evidence of the transmission of destination country norms back to origin countries of migrants. This is in compliance with the "adaptation hypothesis" that states that the impact of a host society's norms increases with the time migrants spend abroad. In particular, and as a result, immigrants' fertility rates converge to those of natives.

who can directly supply political services if those who leave are the best qualified to provide these services. In addition, the political system would also be negatively affected if emigration acts as a "safety valve" or "outside option" that makes individuals unhappy with the political status quo to leave their home country thereby dampening the demand for better political institutions. This view follows Hirschman (1970)'s "exit" vs. "voice" dichotomy, according to which citizens unhappy with the domestic situation either choose to emigrate (exit) or to protest and contribute to political change (voice). In this setting emigration could be understood as a "safety valve", which released protest intensity in the home political system and therefore reduced demand for political improvements.

One can however argue that emigration may improve political regimes in several ways: diaspora effects brought about by current emigrants may promote political change by influencing local authorities to increase governance (supply side), or by intensified contact of the domestic population with better institutions abroad thereby promoting a desire for greater accountability (demand side); return emigrants experiencing an enriching environment abroad may also improve the quality of the domestic governments upon return by direct participation in the political system (supply side), or by bringing increased awareness and demand for political accountability (demand side).

The question of how emigration affects the quality of domestic politics is therefore an empirical question. This paper focuses specifically on examining the demand side of the political system by studying the impact of migrant networks on the political attitudes and behavior of those left behind.

Levitt (1998)'s notion of "social remittances" has been followed by a large number of contributions in demography, economics, political science and sociology illustrating how

migration can change political attitudes and behavior in countries of origin. [9] Initial contributions, such as Kapur and McHale (2005) or Kapur (2010), highlighted the promise of social remittances as tools for economic development of countries of migrant origin. Most early contributions studying how emigration has changed politics in countries of origin focused on the case of Mexico. Electoral outcomes were often described as more aligned with democratic values in high emigration areas, although political engagement and public good provision were observed to be affected positively or negatively depending on the specifics of the analysis.[10]

Spilimbergo (2009) conducted one of the first cross-country quantitative 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. Docquier et al. (2016) presented 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. The authors found 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.[11]

[9] The concept of social remittances is necessarily grounded on the assumption that migrants assimilate social norms of the countries of destination. Evidence that migrants assimilate political norms in their host countries of migration is provided by Careja and Emmenegger (2012) and Chauvet et al. (2016) for very different contexts – respectively, Central and Eastern Europe, and Mali.

[10] See, for example, Burgess (2005); Bravo (2008); Goodman and Hiskey (2008); Perez-Armendariz and Crow (2010); Aparicio and Meseguer (2012); Meseguer and Aparicio (2012a); Meseguer and Aparicio (2012b); Pfutze (2012).

[11] In a related study, Beine and Sekkat (2013) find suggestive cross-country evidence that the transmission of political norms seems to be stronger when emigrants are more educated. Lodigiani and Salomone (2016)

A related branch of literature has focused on the relation between migrant remittances and political variables, and how these seem to be strongly correlated. O'Mahony (2013) shows that migrant remittances increase in election years particularly when elections are more contested and the home country poorer. Ahmad (2012, 2013, 2017) provide evidence that migrant remittances may deter political change, particularly in autocratic regimes, although this effect may be counteracted by remittances being used to pay for private forms of local public goods - which may reduce the effectiveness of state patronage, and in this way promote political change (Adida and Girod, 2011; Doyle, 2015; Pfutze, 2014; Tyburski, 2012).

Finally, related recent contributions (Miller and Peters, 2018; Peters and Miller, 2018) emphasize the role of emigration in reducing violent conflict – while showing that emigration to countries with better institutions may increase the more effective non-violent demand for political change, consistent with our results.

Most of the earlier empirical contributions use aggregate macroeconomic data and explore cross-country variation. For this reason, they cannot distinguish between supply and demand forces, nor capture in detail the mechanisms underlying the effects they identify. Batista and Vicente (2011) provided the first study to use both household-level survey and behavioral data from a voting experiment to examine the differential effects of return and current migrants, while also distinguishing between the impact of different countries of destination with varying degrees of governance. They found stronger effects for return migrants than for current migrants - a result later corroborated by Chauvet and Mercier (2014), Mercier (2016), and Tuccio et al. (2018), which emphasized the role of return migration in promoting political participation and electoral competitiveness in various countries of migrant origin.

describe how international migration to countries with higher female parliamentary participation has a positive and significant effect on the female parliamentary share at origin.

Batista and Vicente (2011) also showed how improved levels of governance in different host countries (namely the United States relative to Portugal) positively influenced the magnitude of the migratory impact on the demand for more political accountability. Barsbai et al. (2017) also support these findings by exploiting community and individual-level data from Moldova, as well as migration patterns to countries with different political regimes. In particular, they find that exposure to Western democratic values and norms promoted political change in municipalities with a higher number of emigrants.

While the approach by Batista and Vicente (2011) is innovative in the sense that it employs behavioral data, and points towards return migration from countries with better quality institutions as the driving force for the effect of emigration on political attitudes and behavior in countries of origin, it cannot explain how individual-level relationships with migrants affect the demand for better political institutions. Consistent with DellaVigna and Gentzkow (2010) that show that access to news media affects election behavior, Barsbai et al. (2017) attribute the large effect they find on political participation in Moldova to the information transmitted by migrants. Moldovans in close contact with migrants obtained information not available in their home country, where access to free media was limited.

A different strand of literature focuses precisely on the diffusion of political values through social networks. Fafchamps, Vaz, and Vicente (2017) show 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. Giné and Mansuri (2011) relate closely to this idea as they find positive spillover effects of an awareness campaign in Pakistan on female voter turnout. Similarly, Nickerson (2008) finds that about 60% of the propensity to vote is passed on to another household

member in a randomized controlled trial in the United States. These findings suggest that norms about political participation are adopted and passed on to peers.

Our paper contributes to the existing literature in at least three different ways. First, our work innovates by examining the diffusion of political norms and information about electoral processes through different types of migrant networks – which we measure using detailed data on geographical networks, kinship networks and chatting networks. More generally, our paper contributes by using a variety of political participation measures (selfreports, behavioral and actual voting measures) showing that stronger links with international emigrants increase the likelihood of domestic political participation by those left-behind. Finally, we contribute by studying the case of Mozambique, a country with substantial SouthSouth emigration, almost exclusively to other sub-Saharan African countries. This is a setting where both migrant countries of origin and destination are imperfect democracies, and where the empirical question of whether migrants can transfer improved political norms is not trivial or captured by the existing literature.

3. Conceptual Framework

Migration is expected to affect political attitudes and behavior through two primary channels: the transmission of information by migrants; and changes in social norms via contact with migrants.

It can be expected that migrants act as vehicles for information transmission from countries of destination to countries of origin – particularly if access to free media is limited in the countries of migrant origin. In particular, contact with migrants is likely to promote improved knowledge about political processes (for example, learning about democratic processes in the host country), and in this way increase the value of political participation and lead to more active political participation in the country of migrant origin. This mechanism is

consistent with the findings in the literature described in Section 2, in particular the contributions of DellaVigna and Gentzkow (2010), Giné and Mansuri (2011), Fafchamps, Vaz, and Vicente (2017), and Barsbai et al. (2017).

Migration to countries with higher political participation rates may promote more active political participation norms in origin countries of migrants. An individual who emigrates becomes exposed to a different environment where she faces different social prescriptions about political behavior. In this context, the individual migrant should update her political behavior accordingly. This direct impact of migration can be thought of as what happens when an individual emigrates and adopts different standards of political behavior – while she is still abroad or upon return to the home country. A similar, but more indirect effect of changed social norms through migration on political behavior may happen independently of own migratory experiences. This effect may happen when an individual's social network includes peers with migratory experience. Because the construction of social norms is influenced by peers' actions, migration can in this way change the behavior of nonmigrants indirectly. This is the case if the opinion of peers, mirrored in their actions, has enough weight within a social category to influence existing social prescriptions. This mechanism is similar to the identity model in Akerlof and Kranton (2000), where individuals act in compliance with the social norms prevalent in their social group or society to avoid

losses in utility.

The transmission of social norms through migration is particularly well documented for fertility norms - for example, by Beine et al. (2013) and Bertoli and Marchetta (2015). This is in compliance with the "adaptation hypothesis" that states that the impact of a society's norms increases with the time spent abroad. This hypothesis has received wide empirical support in the literature, both for internal (rural-urban) and international migration.

The political participation decision framework of an individual described above can be represented using the following latent variable model:

$$V_i = 1(V_i^* \geq 0) \tag{4.1}$$

$$V_{i^*} = \alpha + \beta \sum Network_{ij} * mig\_HH_j + \delta X_i + {}_i \tag{4.2}$$

According to this model, the respondent will vote (or be politically active, i.e. $V_i = 1$) if the net expected benefit from voting, V_i^*, is non-negative. This net expected benefit from voting is influenced by the links between individual *i* and migrants in her network, $\sum Network_{ij} * mig\_HH_j$, as well as by 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,*[12] and a dummy for the migration experience of household *j.*

The net expected benefit from voting is expected to increase with the number of links to migrant households if: (i) the information migrants transmit incentivizes individuals to increase voting or other forms of political participation; and (ii) more links to migrants transmit additional information.

The net benefit from voting further increases with the number of links to migrant households if political participation norms in a community change with the number of migrants, as they bring back different attitudes towards political participation. Individuals will then derive utility from behaving in accordance with these norms.

[12] A directed link is defined as a connection reported by individual i to individual j, but not necessarily vice versa. See Jackson (2010) for a detailed exposition of different social network types.

4. 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 ranked 178 out of 187 countries in the Human Development Index.[13] For many years, Mozambique has been an aid-dependent country. In 2013, for example, the country received official development assistance of almost 15% of its GNI (US$2.3b).[14]

The majority of the Mozambican population, around 78% in 2009, [15] is directly dependent on agriculture. Climate change is a major threat to these livelihoods as Mozambique is exposed to extreme weather events that have often affected several dozens of thousands of people in the last two decades.[16] The international donor community generally heavily supports emergency relief and rehabilitation programs in response to natural disasters, replacing the role of the Mozambican government to a large extent, as the Mozambican government does not have the necessary resources for disaster relief. This situation is particularly well documented since 2000.[17]

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) migrant

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

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

[15] International Labour Organization, ILOSTAT database.

[16] Red Cross Mozambique (2013).

[17] In 2000, for example, a major flood hit the country and Mozambican President Chissano recognized in front of reporters that international aid was arriving very slowly to assist the victims of the flooding as reported in the Southern African Research and Documentation Centre´s report in May 2000. Information available from http://reliefweb.int/report/mozambique/mozambique-natural-disasters-floods, last accessed on August 30, 2017.

remittances flows amounted to 1.4% of GDP, with inflows of approximately US$217 million.[18] According to World Bank (2011) estimates,[19] the stock of Mozambican emigrants in 2010 was 1.2 million, or 5% of the resident population.[20] According to this nationally representative statistics, the main international destinations of Mozambican current

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

[19] World Bank Migration and Remittances Factbook (2011), Second Edition. Washington, DC: World Bank. Available at https://openknowledge.worldbank.org/handle/10986/23743

[20] This is consistent with the large prevalence of migration evident in our survey, as illustrated by Table 1.

emigrants in 2010 were South Africa, Malawi, Zimbabwe, Tanzania, Portugal, Swaziland, the United Kingdom, Germany, the United States, and Spain.[18]

Historically, since its independence from Portugal in 1975, following ten years of war, Mozambique has been 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, a civil war erupted between FRELIMO and RENAMO (Resistência Nacional Moçambicana) that created large refugee movements to neighboring countries. With the end of the cold war, and the collapse of the apartheid in South Africa, 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.

After the peace treaty, presidential and parliamentary elections were held in 1994, 1999, 2004, 2009, and 2014. FRELIMO won all these elections by a large margin and increased its vote share consistently. Across all national elections, electoral irregularities had significant consequences for the overall results - as claimed by RENAMO, and confirmed by international observers. The 2009 elections, the time around which our data was collected, are considered to have followed international standards, despite small irregularities. Both Armando Guebuza, the Mozambican president from 2005 until 2015, and FRELIMO were elected unambiguously by 75% in 2009.

A variety of sources considers that the quality of democracy in Mozambique is imperfect. The V-DEM Electoral Democracy Index[19] was 1.89 for Mozambique in 2009, and

[18] This is reflected in our survey data where around 87% of emigrants went to South Africa as displayed in Table 2.

3.[21]06 for South Africa, for example - a substantial statistically significant difference showing the potential for Mozambican migrants to South Africa to adopt political norms that are superior, in this sense, to those prevalent in their home country. Consistently with the V-DEM scores, Mozambique's political system is scored as 5 by the Polity IV index,[22] and classified as an "open anocracy" from 2009 until 2017. South Africa, in contrast, was scored as 9 and classified as a "democracy" over the same time period. The Freedom House's Index of Freedom in the World currently classifies Mozambique as a "partly free country" where citizens generally show difficulties in grasping the importance of democracy, with a score of 52/100, whereas South Africa scores 78/100 and is considered a "free country". The index further classifies the press status in 2015 to be "partly free" with particular limitations for news on national security and politics. Finally, the Economist Intelligence Unit's (EIU) Democracy Index [23] ranks Mozambique 115 (out of 167), and classifies its political system as a "hybrid regime" (bordering the classification as an "authoritarian regime"). South Africa, in comparison, ranks 41 and is classified as a "flawed democracy" similar to the United States or Japan. Overall, these different measures point to the quality of democracy being generally low in Mozambique, and significantly lower than in South Africa.

Political participation is most closely related to the type of political attitudes and behavior we measure in our paper, and proxies for the type of political norms that Mozambican migrants may learn about while abroad and potentially transmit through their social networks.

[21] The V-DEM Electoral Democracy Index measures the extent to which the rulers are "responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country". See Coppedge et al. (2016) for additional detail.

[22] The Polity IV index classifies levels of democracy based on an evaluation of the competitiveness and openness of elections, the nature of political participation, and the extent of checks on executive authority. For each year and country, a "Polity Score" is determined which ranges from -10 to +10, with -10 to -6 corresponding to autocracies, -5 to 5 corresponding to anocracies, and 6 to 10 to democracies.

[23] The EIU Democracy Index is constructed based on 5 pillars: electoral process and pluralism, functioning of government, political participation, political culture and civil liberties.

Two different indices confirm that Mozambican emigrants may experience superior political participation in South Africa than in their home country. In 2009, the V-DEM Participatory Democracy Index[24] for Mozambique was 1.19 and for South Africa was 2.10, a substantial statistically significant difference. We should note, however, that this gap is lower than that observed when simply comparing the more general V-DEM Electoral Democracy Index. The partial EUI political participation index[25] awards Mozambique 5 out of 10 points, whereas South Africa scores 8.33 - the highest ranked country, Norway, scores 10.00. The evidence we find on the role of international migrant networks in transmitting attitudes and behavior related to political participation suggests that it is in this sense that emigration might be a promoter of broader democracy at home.

5. Data and Descriptive Statistics

The household survey data used in this paper was collected in Mozambique from midSeptember until November 2009 by the CSAE at the University of Oxford. This timeframe corresponds to the period before and immediately after national elections took place. The data collected are nationally representative of the voting population of Mozambique that has mobile phone coverage. The fieldwork covered four out of the eleven provinces of the country (Cabo

[24] The V-DEM Participatory Democracy Index "embodies the values of direct rule and active participation by citizens in all political processes. While participation in elections counts toward this principle, it also emphasizes nonelectoral forms of political participation, such as civil society organizations and other forms of both nonelectoral and electoral mechanisms of direct democracy".

[25] Political participation is defined by voter turnout, autonomy and voice of minorities, participation of women in parliament, participation in political parties and NGOs, interest or engagement in politics, attendance of lawful demonstrations, adult literacy, interest in politics in news, and effort to promote political participation.

Delgado, Zambezia, Gaza, and Maputo-Province), and included 161 enumeration areas and 1766 households.[26]

The sampling base we used was the 2004 electoral map of the country, and the enumeration areas (EAs) were polling station catchment areas. Because the use of cell phones was necessary for the construction of our behavioral political participation measure (which made use of cellphone text messages),[27] we eliminated from the sampling base all polling locations without cell phone coverage.[28] From this sampling base, 161 polling locations were selected using two-stage clustered representative sampling on provinces, then on EAs. The number of registered voters per polling location is used as sampling weight. Since all registered voters in the sampling frame have the same probability of being sampled, the surveyed locations are nationally representative of the voting population of Mozambique that has mobile phone coverage. During the baseline survey, in the event that we found no cell phone coverage in a selected location, we replaced it by the closest polling location with cell phone coverage. This happened in seven locations.

Sampling within each EA followed standard procedures for household representativeness: n^{th} house call by enumerators, starting from the polling station - typically a school located at the center of the EA. In each EA, approximately 11 households were

[26] Both Cabo Delgado and Zambezia are located in the North of Mozambique, whereas Gaza and MaputoProvince are reflective of the Southern provinces of the country. During the 2007 census around 37 percent of the Mozambican population lived in these four provinces combined.

[27] For a detailed description of this measure, see Section 5.2 below.

[28] For this purpose, we obtained detailed data from the two cell phone operators on the geographic location of each of their antennae. These were then plotted on a map using their geographical coordinates, with a 5-km coverage radius drawn around each. All polling stations outside the covered area were dropped from the sampling base. In 2009, 60 percent of all polling stations in the country were covered by at least one operator.

interviewed. Our social network measures reflect the relationships between the household heads of each of these eleven households. Due to random sampling of households, our network measures are representative of the true, full social networks of each household within their EA.

Interviews at baseline were directed at the household head or his/her spouse. Interviews were conditional on having access to a cell phone for receiving and sending calls and messages. Respondents that did not own a cell phone but had access to one via a neighbor or family member nearby were included in the study. In each of the EAs, we conducted two face-to-face household surveys, one before the election, and one immediately after.

5.1 Descriptive Statistics

The importance and magnitude of international migration in Mozambique is reflected in Table 1, which describes the percentage of households with migrants in our sample. It shows that almost 33% of all households report having at least one migrant, and only 17.5% of households live in villages where no geographical neighbors ever migrated. Approximately 41% of households have a family member living in a different household than their own, who is currently or has been living abroad for at least 6 months. This number increases slightly to around 48% of households that indicate to be regularly chatting with international migrant households.[29]

[29] Given that the average number of individuals per household in our sample is 5.87, the 5% national emigration rate provided by the World Bank Migration and Remittances Factbook (2011) seems rather consistent, although slightly higher, than the numbers obtained in our survey, where there were 0.21 current emigrants per surveyed household (the national emigration rate would imply 0.29 migrants per household). This slight undercount (0.08 missing migrants per household) is understandable in light of the method used to identify current migrants: only spouses and children of the household head were included in our dataset. This implies that we do not include any migrants that left with their whole families. But given that about 90% of emigration is to South Africa and that this is mostly circular migration, our method of identifying migrants does not seem to induce large undercounts. Moreover, because our objective in this paper is to measure the impact of emigration on domestic politics via contact with migrants, our survey's undercount does not seem problematic as the emigrants underrepresented are those less likely to keep active contact with their home country.

Table 1: ***Migration - Household Characteristics (%)***

	Number of Links	Migration Experience (%)
Households with *at least one migrant*		32.41
Migrant households in *geographical network*	0	17.5
	1	15.63
	2	10.48
	3	8.1
	4	11.1
	5	13.02
	6	6.85
	7	5.55
	8	4.25
	9	5.66
	10	1.87
Kinship relations 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
Chatting relations 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

The migratory experiences in our dataset are mainly determined by emigration to South Africa, which accounts for about 87% of all destination countries. The other main migrant destinations are neighboring countries such as Tanzania, Zimbabwe and Malawi.[28] A

[28] This distribution is consistent with information from the World Bank Migration and Remittances Factbook (2011), and from census data on Mozambican emigrants for South Africa (8.6% sample of 2011 census), Malawi

detailed description of the frequency of different destination countries can be found in Table 2.

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

South Africa	86.62
Tanzania	5.16
Other African	1.64
Zimbabwe	1.41
Malawi	1.17
Swaziland	1.17
Other European	0.94
Portugal	0.70
Germany	0.47
Other	0.47
Cuba	0.23

Almost half of our sample is composed of women, and the average age is approximately 37 years as shown in Table 3. The education a respondent received is rather limited, with approximately six years of schooling on average (primary education).

Table 3: ***Summary Statistics. All Households.***

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Inked Finger Indicator	1112	0.29	0.45	0	1
Self-Reported Voting	1112	0.92	0.28	0	1
Learning-Corrected Self-Reported Voting	1112	0.85	0.36	0	1
Sending Text Message	1138	0.18	0.38	0	1
HH Head Female	1138	0.44	0.5	0	1
HH Head Age	1130	37.38	13.7	18	88
HH Years of Schooling	1136	5.79	4.09	0	18
Total Access to TV, Radio or Computer	1138	1.14	0.85	0	3

(10% sample of 2008 census), Tanzania (10% sample of 2012 census), and Portugal (5% sample of 2011 census) from IPUMS (2018). Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0

5.2 Detailed Description of Main Variables of Interest

Our main outcome variable of interest is the respondents' actual voting during the 2009 national elections. We furthermore complement our analysis by using self-reported voter turnout, an additional measure that corrects self-reported voting for learning about electoral processes, and an alternative behavioral measure reflecting the experimental subjects' intrinsic desire to communicate their own policy priorities.

Actual Voting Measure

To obtain a measure more closely related to actual voting behavior, as opposed to simply limiting ourselves to analyzing self-reported voting behavior 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 (i.e. respondents correctly identified the finger that was inked after having voted and the ink was still observable to the interviewer), we interpret this proxy as the respondent having actually voted. Table 3

shows that almost 30% of household heads voted in the 2009 elections as proxied by this outcome measure.[30]

Migrant networks might influence actual voting behavior as the contact with migrants may change respondents' political participation, namely through the combined mechanisms proposed by our conceptual framework. They might vote in compliance with changed political participation norms, as well as a result of having learned about the importance of elections in democratic regimes.

Self-Reported Voting Measure

We also use a standard survey question on whether the respondent reported having voted. Almost 91% of the respondents in our sample claimed to have voted during the 2009 elections. The contrast with our actual voting measure suggests a strong conformity bias where many respondents report to have voted without having done so.

Migrant networks might influence self-reported voting behavior as the contact with migrants may change respondents' attitudes towards political participation – although not necessarily their actions. In particular, self-reports of voting may be higher for migrant connected respondents since they may be better informed about the importance of political participation, and hence value it more and understand it as desirable behavior – even if this improved information did not create a strong enough net benefit to make our respondents actually vote.

[30] This participation rate is actually lower than 44%, which is the participation rate reported by the Mozambican electoral authorities using official electoral data. This has probably to do with the fact that our field team could not visit all households immediately after the election, and that the ink could have washed out over that time interval. The lag between our visit and the election was not systematically related to prevalence of migration, so that this underestimation of actual voting is not likely to affect our analysis.

Learning-Corrected Self-Reported Voting Measure

We furthermore make use of one more measure of self-reported voting, conditional on the respondents not only reporting to have voted, but also being able to show the correct finger that was inked after voting - even if the interviewers could not observe ink stains anymore. This measure includes 85% of the respondents in our sample as shown in Table 3. We take this measure as a proxy for information about voting procedures, which can be understood in the context of our study. Indeed, the data collection was conducted in rural areas where individuals live relatively close to each other in village settings. As the ink stain will be visible on those individuals that voted for several days (even after washing their hands), individuals that are in close contact with individuals who voted (which is more likely to happen in migrant households) will see more inked fingers, likely ask about the reason why this finger was inked, and hence learn about the finger inking procedure after voting. We propose that this form of contact will lead to increased knowledge about electoral processes, even if the individuals in our sample had no interest in learning about voting procedures or in actually voting. Of course, this is an imperfect measure of information about electoral processes, as it is only one detail about voting procedures. But the fact that 85% of respondents could indicate the right finger (significantly above the 50% one would get if answers were given at random), when only 29% of respondents had their finger actually inked, indicates that this measure conveys valid information.

A positive impact of being in a migrant network on the correct finger indication but not on our actual voting measure can thus be interpreted as evidence supportive of migrant networks improving information about electoral processes, beyond changing the respondent's behavior by changing social norms. A closer connection with migrants may act as an information transmission channel - not only about the importance of political participation, but also about the electoral process itself. If respondents most tightly connected with migrants, differentially

self-report not only to vote more often, but are also able to correctly show the inked finger, we can take this evidence as suggestive that migration is acting as an information channel emphasizing not only the importance of casting a vote (as otherwise individuals should not feel the need to misreport actual voting behavior), but also specific details about the electoral process.

Behavioral Political Participation Measure

Finally, we also 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. Note that since sending a SMS message entails a small direct cost,[31] our measure is a costly action, which we interpret as an incentive-compatible measure of political participation.[32] As shown in Table 3, 18% of respondents sent SMS messages with their policy priority requests. Since experimental subjects were invited to send policy suggestions about any policy topic of their interest,[33] we interpret an increase in the likelihood of sending a text message as a higher desire to participate in the design of the government´s political agenda, and thus increased intrinsic motivation for political participation.

[31] The cost of sending a text message is small in the sense that it is not high enough to imply financial constraints to political participation for respondents. There is also the time cost of taking the action itself.

[32] We were able to identify the individual survey respondents that sent messages through cell-number matching. This matching was easy to achieve since participation in this study was conditional on having access to a cellphone as discussed above.

[33] The policy priorities suggested were not linked to interventions related with government responses to natural disasters. This further supports our argument about the exogeneity of our natural disaster exclusion restriction.

International Migrant Networks

A household is considered an international migrant household if at least one of the household members is currently living or has ever lived outside of Mozambique for at least six months.[34] To obtain the number of migrants an individual is connected with through her social network, we interact this migration variable with the network links 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 survey respondents. This means that we not only evaluate the overall number of links with migrant households in a respondent's geographical network (i.e. within the same EA), but also, most innovatively, the number of migrant households in an individual's chatting and kinship network.

A chatting link is recorded if a respondent indicates to regularly talk with another respondent.[35] Note that the surveys were conducted in a rural setting and all respondents live in the same village. This implies that individuals normally chat personally with each other rather than through any intermediary platforms.

We calculate kinship links in the same way if some individual reports to be related to another respondent or members of her household by family links.[35]

[34] This definition of migrant household includes the household head: if he/she has ever lived outside of Mozambique for at least six months, his/her household will be considered a household migrant.

[35] The exact phrasing of the survey question used to define a chatting link was "How frequently do you calmly chat about the day events with the following individuals or members of their households? Not at all, sometimes, or frequently". We considered a link existed when the individual answered "sometimes" or "frequently". [35] A kinship link between two households exists if the following question was responded positively: "Are the following individuals or members of their household relatives of yours, i.e. members of your family? Yes-No".

We allow for this link to be directed, i.e. a one-sided existence of a link is sufficient, as the concept of social categories is subjective, and does not need to be consistent across individuals.

The degree of connectedness with migrant households of a specific respondent is calculated according to each network's link classification as the total number of migrant households the respondent is connected to. Table 1 illustrates the distribution of network connectivity in our sample. Around 32% of all households are classified as being a migrant household. Only 17.5% of respondents live in a village where not a single household has a household member that is currently living or ever has lived abroad. This number changes dramatically considering kinship and chatting networks. Around 43% of respondents have kinship links to at least one migrant household and approximately 48% of respondents regularly chat to migrant household members.

6. Empirical Strategy

We build an econometric model based on the conceptual framework described in Section 3. The relationship between emigration and political behavior is estimated for different outcome variables that reflect a respondent's political participation. The probability of political participation can be estimated with the following Linear Probability Model (LPM):

$$y_i = \alpha + \beta \sum_{j \neq i} (Network_{ij} * mig_{HHj}) + \delta X_i + \epsilon_i \qquad (5.1)$$

where y_i is an indicator variable denoting an individual's political participation, and X_i represents a vector of individual and geographic characteristics determining the likelihood of political participation. This vector includes demographic controls that determine the identity of an individual such as gender, and age. To capture effects arising from an enlarged information set, this vector furthermore includes the levels of schooling completed, as well as the access to

information provision (such as radio, television, or internet access). We also control for the respondent's own migration history. Standard errors are clustered at the village level.

The binary variable $Network_{ij}$ indicates whether or not individual i is has a directed link to individual j. This variable takes value 1 if individual i reports to be connected with individual j, independently of the link reported by individual j. This specification is preferred to an undirected link between two individuals (where a link reported by only one of these individuals triggers a connection between them), because we are specifically interested in the effect of different types of migrant networks. Indeed, as described before, we construct three types of network variables (geographical, kinship and chatting networks), where the potential link corresponds to, respectively, the two respondents living in the same village, having a kinship relation, and regularly chatting with each other. Constructing social networks based on undirected links would bias our estimates of the impact of chatting and kinship relationships towards the estimation results on the impact of geographical networks because it would not account for the social proximity between two households, as measured by the chatting and kinship relationships. These relationships are particularly well captured by directed networks. The individual *j*'s household is classified as a migrant household ($mig\_HH_j = 1$) if any of its members ever emigrated. The sum over all *j*'s (not including *i*) of the interaction term, $\sum_{j \neq i}(Network_{ij} * mig_{HHj})$, determines the total number of migrant households individual *i* is connected with, excluding her own household.[36]

[36] Our results are robust to different definitions of the social migrant network such as including other household members' or the respondent's own migration experience in the network indicator. As a robustness check to verify whether excluding the respondent's own migration experience as a covariate changes our estimation results, we run all regressions without controlling for the respondent's own migration experience as well. Our results are

6.1 Two Stage Least Squares Estimation

Potential endogeneity of migration decisions

This paper aims at determining the impact of different types of network links with migrants on political behavior. The main threat to identification is that individual migration decisions may be correlated with individual political participation through unobservable factors that cannot be controlled for using a Linear Probability Model. If so, our network variable would capture the effect of being connected with more individuals with particular political attitudes rather than the effect of being connected with more individuals that have been exposed to a different political environment through international migration. This would imply a correlation between our explanatory variable and the regression error term. We may 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 (or less) often. In the case of Mozambique, the ongoing political instability, high corruption, and subpar working of democracy can affect individuals in their decision to leave the country.

To tackle this issue, we use a Two Stage Least Squares (2SLS) estimation approach.[37] We exploit the exogenous variation in the occurrence of natural catastrophes affecting harvests and cattle as sources of emigration. We make use of detailed data on natural disasters in Mozambique at the district level, allowing for large variation across EAs. In addition, we constructed an individual-level instrument by interacting the occurrence of droughts in the district of a respondent's village with her birthyear.

robust to including covariates controlling for the respondent's own migration experience or migration spells of other household members.

[37] Our results are robust to the estimation of an IV probit model instead of the 2SLS model.

The instrumental variable for each household takes the value of the cumulative number of droughts in the ten years prior to the respondent becoming 31 years old.[38] This instrument measures the intensity of droughts around the age at which household heads migrate, as measured in our survey. Especially in rural areas (the context of our study), harvests and cattle are often the livelihood of families, as 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 her family. Our instrumental variable is indeed highly correlated with household migration as natural disasters substantially increase the pressure to emigrate in order to provide for the family back home. The reported F-statistics (shown in Tables 4 to 6) confirm our reasoning.

In the Mozambican context, weather shocks are unlikely to be correlated with political attitudes and behavior other than through migration. As described in the country context section, responses to natural disasters in Mozambique are provided by the international aid community as the Mozambican government has no resources to provide emergency relief programs.

As a robustness check, we also used alternative drought shocks to instrument for migrant selection. Overidentifying restriction tests displayed in column (4) of Tables 4 to 6 lend support to the exogeneity of our instruments for all outcomes of interest and all types of migrant networks. This alternative instrumental variable for the decision to migrate is

[38] Our results are robust to the use of similar IVs constructed with different types of weather shocks as well as different age thresholds and time spans. The weather data used are from the UNDP (2013) DesInventar database.

constructed using the cumulative number of droughts in the ten years after the respondent becomes 29 years old and prior to being 40 years old.[39]

We thus argue that our exclusion restriction fulfills the two necessary and sufficient criteria to be used as a valid instrumental variable.

The instrumental variables we use to account for self-selection of emigrants are constructed in two steps: We first interact the number of droughts a neighboring household was exposed to (in accordance with the above definitions) with our binary indicator of whether a network link exists between our respondent and the respective household. Second, we sum all interaction terms within the respondent's respective enumeration area.

We estimate the following 2SLS model:

$$y_i = \alpha + \beta \sum \hat{Network}_{ij} * mig\_HH_j + \delta X_i + \epsilon_i$$

$$\sum \hat{Network}_{ij} * mig\_HH_j = \alpha + \theta_2 \sum Network_{ij} * Exposure\ to\ Droughts_j + \delta X_i + \epsilon_i$$

This specification takes the endogenous decision to migrate into account by replacing the migrant network connectivity of individual *i* with the predicted migrant network connectivity based on our proposed exclusion restriction. The vector X_i contains individual and geographic controls as stated before.

Potential endogeneity of network formation

A second endogeneity concern arises from how network links are being formed. As recognized by Manski (1993), it is possible that there is endogeneity in the formation of migrant

[39] In other robustness checks, we used alternative drought shocks to instrument for migrant selection, and additional overidentifying restriction tests also lend support to exogeneity of the instruments we used. These results are available from the authors upon request.

networks in that unobserved characteristics of migrant households are likely correlated to those of households in their networks – the well-known "reflection problem". In the context of our paper, if individuals are more likely to be friends (as is captured by our chatting network measure) with households with similar political attitudes, our explanatory variable would be correlated with the regression error term. Similarly, kinship relationships might be endogenous through marriage preferences based on political attitudes and behavior.

For this reason, following the strategy proposed by Bramoullé et al. (2009), we propose to use undirected secondary links to migrant households as an exclusion restriction to identify the effects of the primary directed links to migrant households on the political outcomes we study. In the undirected network specification, we disregard the direction of influence such that a unilaterally reported link triggers a network indication for both households. More specifically, we instrument the respective network indicator with seconddegree links between households. We compute the adjacency matrix between all households within an enumeration area and replace our original network variable with a binary indicator equal to one if and only if, two households are connected with each other through a third household. By construction, this variable is highly correlated with the initial direct network variable, but is unlikely to be correlated with individual political participation decisions as the two households do not chat with (or marry) each other directly.[40]

The reported F-statistics (shown in columns (5) and (6) of Tables 5 and 6) confirm the strength of the constructed instrument. When using alternative drought shocks to instrument for migrant selection, overidentifying-restriction tests lend support to the exogeneity of the

[40] Further, the undirected nature of the secondary network meets the identification condition of linear independence as formally shown by Bramoullé et al. (2009).

instrument as displayed in column (6) of Tables 5 and 6.[41] Because the estimates displayed in columns (5) and (6) of Tables 5 and 6 (obtained when accounting for self-selection into social networks) are generally larger than when this potential endogeneity is not accounted for, we conclude that even if the second-degree link instrument is not fully exogenous and is still at least partly driven by unobservable characteristics related to political participation, our estimates seem to be biased downwards and thus understate the impact of migrant networks on changes in political attitudes and behavior.

We interact the network link variable with the same instrumental variable on natural shocks on a household (head) level as in our primary specification. We proceed by constructing the final instrument as the sum of interactions between a binary indicator of the existence of a second-degree link and the neighboring household's exposure to droughts as before. The final IV is then the sum of the total number of natural shocks that occurred to household heads to which the respondent is connected with through secondary links.

This is reflected in the following modification to the instrumental variable of the 2SLS model:

$$\widehat{\sum Network_{ij} * mig_{HHj}} =$$

$$= \alpha + \theta_2 \sum Second - Degree\ Link_{ij} * Exposure\ to\ Droughts_j + \delta X_i + \epsilon_i$$

This specification takes into account both the endogenous decision to migrate, and the endogenous creation of networks by simultaneously replacing the migrant network

[41] The overidentifying-restriction tests are constructed using the cumulative number of droughts in the ten years prior to the respondent being 29 years old, and prior to being 40 years old as an additional instrumental variable for the decision to migrate, and second-degree network links to control for endogenous network creation for the kinship and chatting network.

connectivity of individual i with the predicted migrant network connectivity based on our proposed exclusion restriction regarding individual migration decisions and network formation. The vector X_i contains individual and geographic controls, as stated before.

7. Empirical Results

In this section, we summarize the main empirical results. We first discuss the evidence on the relationship between geographical proximity to migrants and voting behavior. The subsequent subsections go further in detailing how kinship and chatting relations with migrants may contribute to explaining the results obtained for geographical networks.

7.1 Geographical Proximity

The existing evidence on the role of international migration in shaping political attitudes and behavior, including our own conceptual framework, proposes that a higher number of migrants within a village should increase the political participation of others living in the same village. Under our hypothesis that migration increases the benefits of political participation and creates positive spillover effects, we would expect a positive effect of geographical migrant networks on voting behavior. This positive effect would be the result of Mozambican migrant destinations being mainly countries with a higher democracy index, and higher political participation.[42]

As shown in Table 4a, the empirical estimates obtained are in line with our theoretical predictions. Column (1) of Table 4a shows a positive and highly significant increase of 2.3 pp in the probability of actual voting per additional migrant household in the village according to a

[42] According to the various sources described in section 4, and despite the fact that the better political norms at destination being generally considered imperfect.

simple LPM estimate. Column (2) of Table 4a reports 2SLS estimates accounting for the endogeneity of the migration decision of peers in the same village, using as instrumental variable a measure of the cumulative exposure to droughts experienced by each household when the household head was between 20 and 30 years old. Column (3) reports similar 2SLS estimates also controlling for the respondent's own migration history. The 2SLS estimates confirm the LPM results, and somewhat increase the magnitude of the estimated coefficient: one more migrant household in a village increases the likelihood to vote in that village by between 3.3 pp and 3.4 pp. As an additional robustness check, we furthermore report results for 2SLS estimates with two instrumental variables in Column (4), where the second instrumental variable is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 30 and 40 years old. The estimated impact of one more migrant household in a village further increases to a 4.1pp rise in the voting probability. Overall these empirical results support the prediction of our conceptual framework and past findings in the literature that migrant geographic networks promote political participation.

Table 4: ***Effects of International Migrant Geographical Network***

Table 4a: **Actual Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
International Migrants within Locality	0.023***	0.034**	0.033**	0.041**
	(0.007)	(0.014)	(0.016)	(0.017)
Own Migration Experience Control	YES	NO	YES	YES
Individual Controls Included	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B
Kleibergen-Paap Wald F-Statistic	-	34.66	33.29	19.10
Hansen J-Test p-value	-	-	-	0.30
Observations	1102	1102	1102	1071

Table 4b: **Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS

	(1)	(2)	(3)	(4)
International Migrants within Locality	0.004	0.016**	0.019**	0.016**
	(0.004)	(0.007)	(0.008)	(0.008)
Own Migration Experience Control	YES	NO	YES	YES
Individual Controls Included	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B
Kleibergen-Paap Wald F-Statistic	-	34.66	33.29	19.10
Hansen J-Test p-value	-	-	-	0.33
Observations	1102	1102	1102	1071

Table 4c: **Learning-Corrected Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
International Migrants within Locality	0.011***	0.028**	0.029**	0.029**
	(0.004)	(0.011)	(0.013)	(0.012)
Own Migration Experience Control	YES	NO	YES	YES
Individual Controls Included	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B
Kleibergen-Paap Wald F-Statistic	-	34.66	33.29	19.10
Hansen J-Test p-value	-	-	-	0.96
Observations	1102	1102	1102	1071

Table 4d: **Behavioral Measure** dependent variable.

	LPM	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
International Migrants within Locality	-0.001	0.039**	0.046**	0.053***
	(0.008)	(0.017)	(0.019)	(0.019)
Own Migration Experience Control	YES	NO	YES	YES
Individual Controls Included	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B
Kleibergen-Paap Wald F-Statistic	-	33.59	31.44	18.54
Hansen J-Test p-value	-	-	-	0.55
Observations	1128	1128	1128	1097

Table Notes: Individual Controls include gender of household head (male), age of household head (years), highest education level completed by the household head, and access to radio, television and computers. We further control for province effects in all specifications. Instrumental Variable A in columns (2) – (3) is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 20 and 30 years old. Column (4) reports results with two instrumental variables where the additional IV B is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 30 and 40 years old. Please see text for details on the construction of the IV. Kleibergen-Paap Wald F-statistics and p-values of Hansen J-Test are reported where applicable. Standard errors in parentheses, clustered at the enumeration area level. * p<0.10, ** p<0.05, *** p<0.01.

The magnitude of this positive result decreases when analyzing the impact on selfreported voting behavior, particularly under the LPM specification as shown in column (1)

of Table 4b where this coefficient becomes close to zero. All the 2SLS estimates in columns (2)(4) of Table 4b confirm the effects found for the actual voting measure, with a significant estimated impact of an increase between 1.6 and 1.9pp in the probability of self-reporting to vote in presence of an additional migrant in the village.

Consistent with the existing literature, households in villages with more migrants, are found to be more politically active, although migrants seem to have a smaller effect on selfreported than actual voting. This difference can be explained by the conformity bias and resulting over-reporting of voting behavior discussed above, which may reflect an increased perception of the value of political participation because of information conveyed by migrants, as discussed in the previous sections.

We estimate a significantly stronger impact of geographical networks on the learningcorrected measure than on the simple self-report measure, as is clear in Table 4c. In all the estimated specifications, the impact of migrant networks is positive, significant and higher than when simply considering self-reported voting. We interpret this evidence as providing further support for an important informational role of migration through geographical networks. Indeed, migrants seem to transmit information about the relevance of political participation and about the political process itself. This is consistent with migrant-connected respondents being significantly more likely to self-report voting, and also to show the correct inked finger – a display of better knowledge about the electoral process, in addition to the simple recognition of the importance of voting. This result is consistent with the evidence outlined in Section 4 that access to news about politics in Mozambique is limited. As a result, households contacting with migrants abroad might benefit from the additional information that migrants obtained abroad and transmit back to their networks in the home country.

Another potential theoretical mechanism that can explain the impact of migrant networks on political participation is a change in the social norms of migrant villages, which generates intrinsic motivation for political participation. If this is the case, we would expect that experimental subjects connected to migrants respond more strongly when given the possibility to express their policy priorities – even if this is not part of the standard political process of the country. As international migration from Mozambique is mainly to South Africa that has much higher political participation rates, the transmission of increased political participation social norms is likely to be a valid mechanism in our setting. Indeed, our behavioral measure of political engagement confirms this hypothesis, although only after accounting for the potential simultaneity bias of migration networks and political behavior. Although the effect of geographical migrant networks is not statistically significant and almost zero when using a LPM as shown in column (1) of Table 4d, the 2SLS estimates in columns (2)-
(4) of Table 4d show that one more migrant household in a village increases political participation of its residents by between 3.9 pp and 5.3 pp.

The difference between the LPM and 2SLS estimates across all outcomes we use suggests negative self-selection of migrants in terms of their political attitudes. This is consistent with the results of Batista et al. (2017), which uses a number of sources of variation and estimation strategies to conclude that emigration from Mozambique seems to be driven by unobservable negative self-selection – in terms of entrepreneurship in that case. This is consistent with a context in which there is a long history of migration to South-African mines and farms, where large networks of migrants substantially decrease any pecuniary and nonpecuniary costs of migration.

Overall our estimates suggest that geographical migrant networks are likely to improve political participation in migrant countries of origin through both information and intrinsic motivation mechanisms.[43]

One important question that remains is to understand what type of personal relationship with the migrant drives the impact of migrant geographical networks on political participation. For this purpose, we look at two types of networks within the geographical network: chatting and kinship networks.

7.2 Chatting Networks

We are interested in understanding how friendship – and in particular friendship with international migrant households – may affect political behavior. Friendship is a complex concept and implies subjective definitions especially in a country context such as Mozambique, where there exist many local languages whose usage in rural areas dominates the official language Portuguese. We proxy friendship by asking respondents with whom in the sampled village households they regularly chat as described in detail in the previous section.

Table 5: ***Effects of International Migrant Chatting Networks***

Table 5a: **Actual Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
International Migrant Chatting Network	0.019*	0.026*	0.024	0.027*		0.076***
	(0.010)	(0.014)	(0.014)	(0.015)	(0.023)	(0.024)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	45.92	45.70	43.80	18.05	28.71

[43] A relevant caveat to our empirical results is that we cannot distinguish the changes in political participation arising because of international migration per se, from potential income effects generated by migrant international remittances because the value of these remittances received is not included in our dataset.

Hansen J-Test p-value	-	-	-	0.81	-	0.42
Observations	1102	1102	1102	1071	1102	1071

Table 5b: **Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
International Migrant Chatting Network	0.018*** (0.006)	0.017** (0.008)	0.019** (0.008)	0.024*** (0.007)	0.039*** (0.010)	0.038*** (0.010)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	45.92	45.70	43.80	18.05	28.71
Hansen J-Test p-value	-	-	-	0.45	-	0.81
Observations	1102	1102	1102	1071	1102	1071

Table 5c: **Learning-Corrected Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
		(2)	(3)		(5)	(6)
International Migrant Chatting Network	0.030*** (0.007)	0.030*** (0.011)	0.030** (0.013)	0.036*** (0.012)	0.059*** (0.021)	0.065*** (0.018)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	45.92	45.70	43.80	18.05	28.71
Hansen J-Test p-value	-	-	-	0.42	-	0.45
Observations	1102	1102	1102	1071	1102	1071

Table 5d: **Behavioral Measure** dependent variable.

	LPM	2SLS	2SLS	2SLS			2SLS	2SLS
	(1)	(2)		(4)	(5)	(6)		
International Migrant Chatting Network	0.018* (0.010)	0.026* (0.014)	0.029** (0.015)	0.034*** (0.013)	0.059**	0.054***	(0.024)	(0.021)
Own Migration Experience Control	YES	NO	YES	YES			YES	YES
Individual Controls	YES	YES	YES	YES			YES	YES
Instrumental Variables	-	A	A	A + B			A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	45.13	44.32	46.11			14.15	35.319
Hansen J-Test p-value	-	-	-	0.92			-	0.7792
Observations	1128	1128	1128	1097			1128	1097

Table Notes: Individual Controls include gender of household head (male), age of household head (years), highest education level completed by the household head, and access to radio, television and computers. We further control for province effects in all specifications. Instrumental Variable A in columns (2) - (6) is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 20 and 30 years old. Columns (4) and (6) report results with an additional Instrumental Variable B, which is a measure of the cumulative exposure to

droughts experienced by each household when the household head was between 30 and 40 years old. The Instrumental Variable C in columns (5) and (6) additionally accounts for endogenous network creation by using second-degree network links. Please see text for details on the construction of the IVs. Kleibergen-Paap Wald F-statistics and p-values of Hansen J-Test are reported where applicable. Standard errors in parentheses, clustered at the enumeration area level. * p<0.10, ** p<0.05, *** p<0.01.

Chatting with migrant households seems to significantly increase actual voting behavior. Columns (1) to (4) of Table 5a show a marginally significant positive impact of migrant chatting networks on political participation. These effects become larger and more precisely estimated when accounting for self-selection into migrant chatting networks. As shown in columns (5) to (6) of Table 5a, chatting with one more migrant household has a positive and significant effect on actual voting behavior of between 6.5 pp and 7.6 pp when controlling for migrant self-selection and endogenous friendship selection.

Table 5b shows the effect of regularly speaking with migrant households on an individual's likelihood to self-report having voted. As before, we obtain highly significant positive effects of up to 3.9 pp in the probability to self-report voting per additional migrant household in the chatting network. This estimate is robust to controlling for self-selection of migrants and endogenous network formation.

This effect is much higher when examining the impact on the learning-corrected self-reported voting measure, as shown in Table 5c. We interpret this evidence as supportive of an important role of chatting with migrants for the transmission of information on the importance of political participation, and on the political process itself.

The estimation results displayed in Table 5d show that the effect of migrant chatting networks is also positive and significant on our behavioral measure of political participation after controlling for simultaneity biases. As reported in column (3) of Table 5d, the positive effect of talking to one more migrant household increases the likelihood of sending a text message by 2.6 pp when accounting for migrant self-selection, and by 2.9 pp when additionally controlling for the respondent's own migration history. Accounting for endogenous network formation, the likelihood of sending a text message increases to between 5.4 pp and 5.9 pp as

shown in columns (5) and (6). This evidence supports that chatting with migrant households can act as an important driver of prescribed social norms on political participation.

7.3 Kinship Networks

We now turn to examining the role of kinship relations with migrant households in shaping political behavior of the left behind. A kinship relation between two households exists, if a respondent indicated to have family ties to the household head or any other member of another household in our sample within the respective EA. Since households were randomly sampled within each EA, we can expect the observed network links with migrants to be representative in magnitude to the overall kinship connectedness with migrant households of the respondent.

Table 6: ***Effects of International Migrant Kinship Network***

Table 6a: **Actual Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
International Migrant Kinship Network	0.019	0.016	0.011	0.032	0.041	0.057
	(0.013)	(0.018)	(0.019)	(0.020)	(0.033)	(0.038)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	46.89	47.43	30.26	24.81	22.30
Hansen J-Test p-value	-	-	-	0.19	-	0.53
Observations	1102	1102	1102	1071	1102	1071

Table 6b: **Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
		(2)	(3)		(5)	(6)
International Migrant Kinship Network	0.017***	.030***	0.033***	0.028***	0.054***	0.038***
	(0.006)	(0.008)	(0.008)	(0.007)	(0.011)	(0.011)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	46.89	47.43	30.26	24.806	22.30
Hansen J-Test p-value	-	-	-	0.26	-	0.02
Observations	1102	1102	1102	1071	1102	1071

Table 6c: **Learning-Corrected Self-Reported Voting** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
International Migrant Kinship Network	0.028***	0.031	0.030	0.038**	0.066***	
	(0.009)	(0.020)	(0.021)	(0.016)	(0.015)	(0.014)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	46.89	47.43	30.26	24.81	22.30
Hansen J-Test p-value	-	-	-	0.54	-	0.29
Observations	1102	1102	1102	1071	1102	1071

Table 6d: **Behavioral Measure** dependent variable.

	LPM	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
International Migrant Kinship Network	0.018	0.028	0.031	0.027	0.033	0.033
	(0.014)	(0.022)	(0.023)	(0.019)	(0.031)	(0.025)
Own Migration Experience Control	YES	NO	YES	YES	YES	YES
Individual Controls	YES	YES	YES	YES	YES	YES
Instrumental Variables	-	A	A	A + B	A + C	A + B + C
Kleibergen-Paap Wald F-Statistic	-	47.07	46.80	31.75	22.99	22.96
Hansen J-Test p-value	-	-	-	0.50	-	0.86
Observations	1128	1128	1128	1097	1128	1097

Table Notes: Individual Controls include gender of household head (male), age of household head (years), highest education level completed by the household head, and access to radio, television and computers. We further control for province effects in all specifications. Instrumental Variable A in columns (2) - (6) is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 20 and 30 years old. Columns (4) and (6) report results with an additional Instrumental Variable B, which is a measure of the cumulative exposure to droughts experienced by each household when the household head was between 30 and 40 years old. The Instrumental Variable C in columns (5) and (6) additionally accounts for endogenous network creation by using second-degree network links. Please see text for details on the construction of the IVs. Kleibergen-Paap Wald F-statistics and p-values of Hansen J-Test are reported where applicable. Standard errors in parentheses, clustered at the enumeration area level. * p<0.10, ** p<0.05, *** p<0.01.

Our results in columns (1)-(4) of Table 6a suggest that kinship relations with migrant households are positively correlated with actual voter turnout. Our estimates point to a 1.1pp to 3.2pp effect, which cannot however be precisely estimated. Additionally controlling for the endogenous formation of network links in column (5) of Table 5a increases the effect of migrant networks to an imprecisely estimated effect between 4.1 pp and 5.7 pp. This seems to indicate

that family ties to migrants are not the main driver of the strong impact of geographical networks on actual voting behavior we reported in Table 4a.

In terms of self-reported voting, kinship ties to migrants significantly increase self-reported voting behavior up to 5.4 pp even after controlling for unobservable self-selection in migration decisions and endogenous network formation, as is shown in columns (1)-(6) of Table 6b. This result does not seem very reliable however since the exogeneity of the secondary network instrument we use to account for endogenous network formation is rejected by the over-identifying-restriction test for the self-reported voting outcome. While exogeneity of this instrumental variable is rejected, the estimation bias seems to underestimate the true effects of migrant networks, so that we expect the true effect to be larger than our (likely biased) estimates.

This effect is stronger when correcting the self-reports for knowledge about the voting process, particularly when accounting for self-selection into kinship networks: as is displayed in columns (1)–(6) of Table 6c, the impact of migrant kinship networks varies between 2.8 pp using the LPM model, and 7.6 pp using the 2SLS estimates. This evidence supports that having a migrant in the family can importantly contribute to better information on both the importance of political participation, and the political process itself – even if it is not enough to bring these family members of migrants to actually vote.

In contrast to the results on self-reported voting, our behavioral measure of political participation is not significantly affected by kinship ties with migrant households. Neither the LPM, nor the 2SLS specifications yield any statistically significant estimation results, although the point estimates are consistently positive. These results suggest that being family related to migrants may not be enough to cause significant changes in prescribed social norms, and hence on the intrinsic motivation for political participation.

7.4 Discussion of Results

The impacts we estimate are quantitatively substantial, particularly given the high prevalence of migration in Mozambique, as illustrated in Table 1.

Indeed, taking 4.3 as the mean value of household migrants per village with migrants, living in a village with migrant households is responsible for an increase of 14.2 pp in the probability of actual voting in that village, and an increase of 19.8 pp in the probability of sending a text message with policy priorities to the president.

Again, in our sample the mean effect of regularly chatting with migrant households is an increase of 12.3 pp in the probability of actual voting, and an increase of 11.1 pp in the probability of sending the policy-demand text message.

These effects are sizeable, particularly in the context of an election that had a national turnout rate of 44% - implying that the effect of migrant networks would be between 28% and 32% of the overall turnout.

8. Concluding Remarks

There is a large body of literature in the social sciences examining the relationship between international emigration and politics in the home country of migrants. Our paper contributes to this by examining the diffusion of political norms and information about electoral processes through different types of migrant networks – which we measure using detailed data on geographical networks, kinship networks and chatting networks.

Two mechanisms are likely to promote political participation through migrant networks: enlarging the information set of individuals in the home country, and changing their social norms governing political participation. Both of these mechanisms are likely to promote political participation provided the migrants transmit information and norms that are superior to those prevalent in their country of origin.

The choice of studying migration as a determinant of political participation in the context of the 2009 national elections of Mozambique is particularly relevant in this context.

Mozambique is a low-income country with substantial South-South emigration, almost exclusively to other neighboring sub-Saharan African countries. This is a setting where both migrant countries of origin and destination are flawed democracies, and where the empirical question of whether migrants can transfer improved political norms back home is not trivial – while being of great relevance in a world where most migration flows happen in similar contexts.

Our empirical results suggest that political attitudes and behavior can be learned and valued more highly at home by individuals who are in contact with emigrants. We furthermore find that increased political participation seems to be mainly driven through contact with migrants through regular chatting, rather than through family links to migrants.

The evidence we examine is consistent with both information transmission and changed social norms for political participation via chatting with migrants. Family links seem to convey some information about the political process, but do not seem to significantly affect broad political engagement.

Related to our findings, existing evidence establishes that there are several mechanisms via which migration may affect the strengthening of democratic institutions. Adida and Girod (2010), Pérez-Armendáriz and Crow (2010) and Pfutze (2012), for example, emphasize the role of emigration in simultaneously improving governance and promoting political participation. Our results corroborate their findings.

While we confirm existing results on the positive effects of international emigration on political participation, the lack of heterogeneity in destination of Mozambican emigrants does not allow us to test for differential effects of migration to destinations with higher and lower

democratic scores according to international rankings such as V-DEM or EIU, unlike Batista and Vicente (2011) for the case of Cape Verde. It will be important to produce additional research on this type of heterogeneous effects in countries with South-South migration flows to a variety of destinations.

In this paper, we use different measures of political participation - namely a proxy for actual electoral voting, and a behavioral measure based on a text message experiment that asked respondents to send a message with policy priorities to the president. The use of these very different measures provides credibility to our findings on the impact of emigration on political participation. Our findings are however more limited in terms of empirically distinguishing the mechanisms through which migrant networks affect political participation. Our proxies for improved electoral information and for changed political participation social norms/increased intrinsic motivation for political participation can only provide suggestive evidence of how different migrant networks transmit political participation. Further research using richer measures of electoral information and political norms would be of great academic interest and policy relevance.

Overall, our work suggests 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. According to our findings, these host countries need not be the most developed and with highest democratic rankings. Enacting South-South 'brain circulation' policies such as scholarship schemes not only in developed countries, but also in destination countries where governance is flawed and democracy is far from working perfectly, might be an effective tool to promote the strengthening of political institutions and ultimately economic development.

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