Migrant Networks and International migration: Testing Weak Ties

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ABSTRACT

This paper examines the dynamic role of migrant social networks in international migration and extends prior research by including a range of weak ties in individuals' personal networks and attempting to disentangle network effects from family reunification and endogeneity. Prior research has traditionally neglected friends and family ties beyond parents, siblings, spouses and children. Using the longitudinal MAFE-Senegal data (2008) collected in both Africa (Senegal) and Europe (France, Italy and Spain), this paper tests the robustness of network theory, and in particular the role of weak ties, on an individual's first migration between Africa and Europe. Preliminary discrete-time hazard model results confirm the importance of ties of all strengths and that the impact appears to be gendered, but do not uphold previous literature's contention that strong ties are more important than weak ties in explaining migration of males and only slightly so for female migration.

INTRODUCTION

The literature on networks and international migration demonstrates that migrant networks play an important role in determining whether an individual will migrate and that the role varies depending on gender and other characteristics of the individual and characteristics of the network itself (for examples, see: Massey and Espinosa 1997, Palloni *et al* 2001, Kanaiaupuni 2000, Curran and Rivero-Fuentes 2003). Yet, the analysis has been based in large part on datasets that may have exaggerated (or distorted) the network effect and are limited to the U.S.-Mexico case, and we are yet unsure whether this literature can or should be generalized to international migration in general.[2] Here, we test new data from Senegal and Europe to see whether these new results coincide with or depart from findings about networks and international migration.

Our research aim is several-fold. First, we investigate whether close family networks (parents and siblings) are important in explaining migration between Senegal and Europe.[3] Second, exploiting the nature of the new data, we test for the network effect *net* of what alternative hypotheses for household networks (Palloni *et al* 2001) can explain. Third, we seek to investigate ties outside close family, including friendship networks, and the impact of tie strength on the international migration decision. Throughout the analysis, we are careful to distinguish migrant network effects from the dynamics of family reunification (not all studies have been careful to do) and, whenever possible, correct for possible sources of endogeneity.

BACKGROUND

In the literature about migrant networks and the individual (international) migration decision, work with strength of ties has traditionally pitted household and close family networks against community networks (usually an aggregate indicator) (for examples, see: Massey and Espinosa 1997; Davis and Winters 2001; Davis, Steklov and Winters 2002; Fussell and Massey 2004; Chort 2010).[4] Still other studies account only for close family networks (Curran and Rivero-Fuentes 2003, Parrado and Cerrutti 2003). Some studies have included

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[2] Studies analyzing the Mexican Migration Project data have been extremely and rightly influential in the study of migrant networks, yet there are certain weaknesses in its design that likely produce a bias favoring migrant networks. These include: an over-sample from origin areas in Mexico with high levels of undocumented migration (DeSipio 2002, Curran and Rivero-Fuentes 2003); limited information about network migration (only information about first, most recent trip and total number of trips. MMP 2011); a destination sample that selects *on the basis of migrant networks* (MMP 2011); and an over-representation of men in sample (Hondagneu-Sotelo 2003). In contrast, analyses of the destination samples of the data used in this paper, MAFE-Senegal, suggest that they are relatively free from such selection bias (Beauchemin and Gonzalez Ferrer 2011, forthcoming)

[3] Using the "Enquête sur la Pauvreté et la Structure Familiale" nationally representative but cross-sectional survey data from 2006-2007, Chort (2010) compares and finds that both household and community networks are important in explaining international migration from Senegal. The study distinguishes between African and non-African destinations.

[4] In some studies about immigrant labor market integration, distinction is made between familial and friendship ties (see Amuedo-Dorantes and Mundra 2007 for example), yet friendship ties have been systematically excluded from analysis of the act of migration itself.

personal networks beyond close family (Kanaiaupuni 2000, Cerrutti and Massey 2001), but these studies tend to include dummy indicators or number of network members by link, rather than a more theoretically-based attempt to capture tie strength.

Espinosa and Massey (1999)'s "closeness of tie" measure may come closest to operationalizing tie strength, yet it includes questionable propositions: for example by including spouses; not taking into account generation in a constructive way (in their system an aunt or uncle is categorized as a closer tie than a cousin); and excluding friends. To the best of my knowledge, I know of no study which has incorporated friendship networks into studies of the migration decision. Our tie strength indicator also accounts for individuals being from the same generation.

All in all, it is troubling that the current state of the art skips over entirely many kinds of ties, neglecting most family beyond parents and siblings and, perhaps of similar or greater importance, friendship ties. How these ties affect international migration is currently a black box: leaving them out of the analysis has hindered real understanding of how international migration works.

Strength of Ties

In an ideal setting, we would analyze a true continuum of tie strength: for example, strong ties versus weak ties. In Granovetter's ground-breaking work on weak ties (1973), he distinguished between the value of having friends and acquaintances, with friends representing strong ties and the latter weak ties in gaining knowledge about appropriate job openings. He expected that one's friends knew one another, while one's acquaintances were less likely to. Groups of friends were dense, while different groups of friends were connected by the occasional weak tie, a link between acquaintances. He hypothesized that individuals with many weak ties would benefit from news beyond the "provincial news and views of their close friends" (Granovetter 1983: 202).

In doing so, Granovetter defined tie strength as the "(probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter 1973: 1361). Due to the limitations of the survey data, we cannot account for variation in most of these dimensions. What we do know is that all the non-nuclear family (beyond siblings and parents) and friends listed in the migrant networks fulfill some aspect of the fourth dimension. More details in this regard are given in the following section.

DATA & EMPIRICAL ANALYSIS

This paper utilizes the recent longitudinal biographical survey data (2008) collected in the framework of the MAFE-Senegal (Migration between Africa and Europe) Project.[5] It is based on a retrospective biographical questionnaire with housing, union, children, work and migration histories recorded. Detailed information is recorded for each union, child, and period (housing, work). Individuals are asked to provide general information about the entire work period, but are asked to specify much of the housing information (including who lived in the household) to the beginning of each housing period. There is additional information about migrant networks, documentation status, remittances and properties. About 600 current Senegalese migrants in France, Italy and Spain and nearly 1100 residents of the region of Dakar were interviewed in 2008.

This paper employs discrete time hazard model techniques to analyze how the likelihood of first-time migration to Europe is related to origin (urban origin, religious affiliation, father's education, if father was deceased or unknown, number of siblings) and changes in the individual life course (marital status, number of children, occupational status, property ownership, etc.), and particularly changes in an individual's migrant network. We

[5] The MAFE survey is coordinated by INED (C. Beauchemin, Paris), in cooperation with the "Institut de Population, Developpement et Sante de la Reproduction" University Cheikh Anta Diop (IPDSR, Senegal). Other partners: Pompeu Fabra University (P. Baizan), the Centro Nacional de Investigacion Cientifica (A. Gonzalez-Ferrer), and FIERI (Forum Internazionale ed Europeo di Ricerche sull'Immigrazione; E. Castagnone).

start the clock at age 17, with the first possible migration to Europe at age 18. All individuals in the sample were born in Senegal.

The dependent variable 'First-time migration to Europe' is a binary indicator that is 1 the year when Ego first moves to a European country.[6] For all previous (or other) years, this variable is coded 0.

Measuring Networks and Tie Strength

Respondents were asked to name all close family members (parents, siblings, partners and children) who had lived at least one year abroad *and other relatives and friends* on whom they could count on (or could have counted on) to receive or help them to migrate out of Senegal, who had also lived at least one year abroad. The other relatives and friends is a selected category – only those "close" enough that Ego could have counted on them for help with migration. Other family members and friends who migrated but were unavailable to help (at least according to the respondent) are *not* listed. We argue that the language of the survey question would only introduce bias into our analysis *if* migrants and non-migrants respond to the question differently. We do not expect this to be the case.[7] Furthermore, in the case of friendship, we could take into account the second dimension – duration – of the friendship to vary between stronger and weaker friendships. In all cases, we are unable to account for the other two dimensions: intensity of relationship and frequency of contact. Nevertheless, Granovetter's definition does not take into account that relationships (and networks of relationships) change over time, growing stronger or weaker, and are finite with a definitive end, while we can account for certain changes (country of residence, whether Ego thought they could have been of help, death) of the network.

Although our network indicators cannot capture all four dimensions of Granovetter's definition of strength of tie, we can exploit one of its consequences.[8] There are more relationships among one's strong ties than weak ties. Likewise, it is intuitive to expect more overlap and connection between the networks of siblings, than there is between the networks of distant cousins. Friendship bears its own set of concerns, but, initially, does not seem to have the same gradient of overlap and connection found in many blood ties. A possible gradient of strength of ties could be based on: close family (siblings and parents) as strong ties, and other family and friends as weaker ties.[9]

However, since our migrant networks essentially include two lists of network members (an exhaustive list of migrants in the close family and a selected list of other family and friends available to help the respondent migrate), our analysis of weak ties should reflect this dichotomy. The exhaustive lists of close family ties allow us to test the network effect and establish a baseline from which to test if weak ties affect the likelihood to migrate *net of close ties*. Developing weak tie indicators only from the second list adds robustness to our argument. Respondents were asked to evaluate two different dimensions of their weak ties network: first, whether a person was willing to help them, and second, whether the person was able (and available) to help them. Thus, we know that "reciprocal services" or resources characterize the

[6] First migration to Europe was chosen rather than the first international migration since the costs and barriers to migration are quite different across the Africa-Europe border, in comparison to borders between African countries, or those between Africa and North America for example.

[7] Indeed, we may expect the opposite – for the bias to run against our hypothesis. For example, it is possible that, since migrants (especially in retrospect) have a clearer idea of what "help to migrate" looked like and who provided it, they may list very few people in this category. In comparison, non-migrants (being more idealistic having not lived a migration experience) may tend to list many people in their other network (even perhaps an exhaustive list of migrants they know). If this scenario is true, the network effect for migration would be biased down. The problem is if the opposite is true: that migrants tend to list more other family and friends than non-migrants. The latter is not as much of an issue since we have information about the year they met and can thus control for friends met during or after migration. However, it may be a problem if non-migrants are less aware of the migration experience of their extended family than migrants. This may be the case, but I argue that it should be much outweighed by the first tendency, of migrants screening their potential lists for would-be help and non-migrants euphorically listing everybody they know.

[8] According to Marsden and Campbell (1984), literature about the strength of ties has confounded indicators ("actual components of tie strength", 485) and predictors of tie strength ("aspects of relationships that are related to, but not components of tie strength", 488). Granovetter's four dimensions of strength of tie are indicators, while many of the tie strength "indicators" are, in reality, predictors: source of the relationship, number of ties, directness of tie. The networks and migration literature is thus guilty for systematically substituting tie strength predictors (source, number of ties) for indicators.

[9] Could we make a counter-claim? Since Ego has to list *all* siblings and parents who lived abroad, they have to include everybody, whether or not that person was available to help. Nevertheless, Ego *only listed* other family members and friends who Ego counted on or could have counted on. So, actually, this is an argument, that this second group is composed of stronger ties, while the first group (close family) include both stronger and weaker ties, since Ego was obliged to list all siblings (for example!). We would expect the second group to have a "purer" influence if we expect different influences for ties, depending on their strength.

weak ties network and can use a predictor of tie strength, specifically the source of the relationship or link, to analyze varying tie strength.

Our proposal for a tie strength indicator is based on both blood proximity and generation. The first (blood proximity) is justified in that the closer relatives are, the more we can expect their relationship to be governed by common expectations of trust and reciprocity. We justify the second dimension (generation) by reasoning that individuals of similar age and generation are more likely to be in a similar labor market and family situation, and thus more likely to have and be able to offer something appropriate and helpful. Finally, since friendships and more distant family are less likely to be governed by mutual obligation, we label these relationships as most weak. Here, we propose a gradient of weak ties based on these two elements: stronger tie (same generation: cousin), medium/neutral tie (different generation: uncle/aunt, niece/nephew) and weaker tie (other relatives/friends).

Analysis of friendship ties is especially troublesome. First, it is possible that some (or many) friendships are endogenous to migration: individuals who want to migrate are likely to seek out friendships that can help them do so, so that these friendship links are actually a result of the desire to migrate itself, rather than vice-versa. Second, a correlation among friends to migrate is not necessarily evidence of the migrant network theory. Selection into the friendships may explain this. In other words, the same characteristics that attracted these friends to one another may also heighten (or decrease) the individuals' likeliness to migrate.[10] Third, unobserved heterogeneity could also explain correlation of friends' likelihood to migrate. The models may not be able to account for all the important characteristics, and some of these may explain the propensity of the friends to migrate, rather than the network itself.

We can counter the first critique with three strategies.[11] First, we include *only* those friendships formed in Senegal before either individual has ever lived abroad. Second, we attempt to account for long-term migration intentions and strategies previous to any successful migration by utilizing information on migration attempts. We restrict friendship networks to those friendships that existed *a priori* to such attempts. Third, we distinguish between short-term and longer-term friends. We test the robustness of our results by running models with only longer-term friends, who are less likely to be a source of endogeneity. This three-pronged strategy helps make our friendship network analysis less prone to problems of endogeneity.

Importance of studying Weak Ties & International migration

Despite these methodological difficulties, we believe that it is very important to methodically analyze the so-called weaker links, and migrant networks outside the close immediate family of parents and siblings (once migrant spouse is controlled for to distinguish migrant network effects net of family reunification dynamics). First, it is not clear whether the migrant network hypothesis can actually be extended beyond parents and siblings. If the evidence does not systematically include links outside parents and siblings, the migrant network hypothesis is quite vulnerable – it is possible that previous literature showing evidence for it has, for the most part, simply captured evidence of other household strategies and mislabeled these as products of social capital. Second, because the costs and barriers to international migration are greater than those captured in most job searches (Granovetter's original case study of weak ties), but the need for information outside the "provincial news" is as or maybe even more important, we would expect that weaker ties are very important in predicting international migration, but we need to test this in a rigorous way. Third, in spite of data limitations, it seems important to analyze gradients of the strength of ties and their impact systematically and beyond what migration literature has proposed so far.

[10] Do different generations of network capture some aspect of age effect, rather than a network effect? For example, we may see individuals with previous generations (grandparents, uncle/aunts) who have migrated or are migrants, as more likely to do so when they come of age. However, once an individual's nieces/nephews start to migrate, that individual may become less likely to do so because they have missed their "window of opportunity" to migrate.

[11] Furthermore, only friendships where Ego could remember (and listed) the year they met were included.

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PRELIMINARY RESULTS

Table A: Migrant Network by Link (at time of interview)

	Nonmigrants		Migrants		
Parent Migrant	0.00861	(0.00326)	0.0317	(0.00865)	**
Sibling Migrant	0.224	(0.0192)	0.497	(0.0268)	***
Cousin Migrant	0.134	(0.0164)	0.148	(0.0170)	
Uncle/Aunt Migrant	0.0657	(0.00987)	0.0694	(0.0113)	
Niece/Nephew Migrant	0.0266	(0.00662)	0.0103	(0.00433)	**
Grandparent Migrant	0.00226	(0.00171)	0.00315	(0.00223)	
Other Relative Migrant	0.0374	(0.00989)	0.0219	(0.00618)	
Friend Migrant	0.148	(0.0175)	0.252	(0.0255)	***
Observations	1011		659		

Standard errors in parentheses
Note: Differences significant at ***p<0.01, **p<0.05. Individual weights included.
Source: MAFE-Senegal 2008

Table B: Descriptives of Strong and Weak Ties (at time of interview)

	Nonmigrants		Migrants		
Strong Tie	0.232	(0.0194)	0.511	(0.0266)	***
Weak Tie	0.335	(0.0223)	0.410	(0.0266)	**
Observations	1011		659		

Standard errors in parentheses
Note: Differences significant at ***p<0.01, **p<0.05. Individual weights included.
Source: MAFE-Senegal 2008

Table C: Descriptives of Strength of Tie (at time of interview)

	Nonmigrants		Migrants		
No ties	0.509	(0.0233)	0.288	(0.0222)	***
Only Strong Tie	0.157	(0.0169)	0.302	(0.0257)	***
Only Weak Tie	0.259	(0.0211)	0.201	(0.0189)	**
Both Ties	0.0755	(0.0116)	0.208	(0.0249)	***
Observations	1011		659		

Standard errors in parentheses
Note: Differences significant at ***p<0.01. Individual weights included.
Source: MAFE-Senegal 2008

Table D: Descriptives of Weak Ties categories (at time of interview)

	Nonmigrants		Migrants		
Weak Tie - stronger	0.134	(0.0164)	0.148	(0.0170)	
Weak Tie - neutral	0.125	(0.0146)	0.104	(0.0136)	
Weak Tie - weaker	0.142	(0.0172)	0.227	(0.0250)	***
Observations	1011		659		

Standard errors in parentheses
Note: Differences significant at ***p<0.01, **p<0.05. Individual weights included.
Source: MAFE-Senegal 2008

Table 1: Logistic Estimation of the Odds of being a 1st time Migrant in a Year: Household and Non-household migrant networks

	All		Men		Women	
Having a household migrant network	4.26***	4.25***	4.99***	5.22***	2.70†	2.61
Household Migrant Network Size (current migrants only)		1.01		0.98		1.04
Having a non-household migrant network	2.04***	1.60**	1.93***	1.62**	1.90**	1.59
Non-household Migrant Network Size (current migrants only)		1.15**		1.10		1.12
N (person years)	33526	33526	33544	33544	33753	33753

Results are presented in odds ratios. Controls not shown. Control for Migrant Spouse included.

†<0.1; **p<0.05; ***p<0.01

Source: MAFE-Senegal 2008.

Table 2: Logistic Estimation of the Odds of being a 1st time Migrant in a Year: Strong Tie vs. Weak Tie migrant networks

	All	Men	Women
Strong Tie	1.65***	2.56***	2.26***
Weak Tie	1.88***	2.58***	1.68***
Control for Migrant Spouse	2.89***	1.18	15.69***
N (person years)	33553	33582	33819

Results are presented in odds ratios. Controls not shown. Controls include Migrant Spouse.

† p<0.10; **p<0.05; ***p<0.01

Source: MAFE-Senegal 2008.

Table 3: Logistic Estimation of the Odds of being a 1st time Migrant in a Year: Strength of Weak Tie & migrant networks

	All	Men	Women
Strong Tie	1.66***	2.59***	2.25***
Weak Tie – stronger	1.46***	1.42	1.00
Weak Tie – neutral	1.23	1.17	1.57†
Weak Tie – weaker	2.10***	3.09***	1.31
Control for Migrant Spouse	2.96***	1.28	15.50***
N (person years)	33553	33582	33819

Results are presented in odds ratios. Controls not shown. Controls include Migrant Spouse.

† p<0.10; **p<0.05; ***p<0.01

Source: MAFE-Senegal 2008.