SOCIAL CAPITAL, RESOURCES AND CONTEXT: THE IMPACT OF MIGRANT NETWORKS IN SENEGALESE, GHANAIAN AND CONGOLESE MIGRATION TO EUROPE

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ABSTRACT

The migrant social capital literature is quite rich, but does have a few weaknesses: 1. Lingering ambiguity about migrant network mechanisms (detailed in Garip 2008 and Stecklov 2010, reviewed in González-Ferrer and Liu 2012); 2. Limited geographical reach; and 3. Limited theoretical exploration of how context affects migrant networks action. Here, we attempt to confront these issues and help shed light on the complexity of migrant network action. Building on previous comparative work (Toma and Vause 2011) and studies investigating network resources (Garip 2008, Liu *in review*), we propose analyzing how migrant networks activate different resources for international migration, and whether and how this changes with economic climate and period. To do so, we exploit a recent source of data (Migration between Africa and Europe 2008-2010) and use event history analysis to compare migrant networks effects among three migration flows to Europe: from DR Congo, Ghana and Senegal.

INTRODUCTION

This work is motivated by three apparent weaknesses in the literature. First, although the migrant networks literature is very rich, lingering ambiguity of migrant network mechanisms remains, and it is generally assumed that networks promote migration. Following Portes' (1998) review of the concept of social capital, a few studies have begun to clarify social capital mechanisms in migration behavior. Perhaps most importantly, Garip (2008) differentiated between several dimensions of social capital – such as the attributes of the recipients, the sources of migrant social capital and their resources – in her study of Thai internal migration. However, a substantial gap between theory and empirical study remains, and this includes the need to explore both theoretically and empirically how migrant networks may dampen migration behavior (González-Ferrer and Liu 2012). Following in the spirit of the work mentioned above, we aim to capture network mechanisms as precisely as possible, develop testable hypotheses and anticipate possible negative social capital influences.

Second, the empirical migrant network literature has a limited although expanding geographical reach, and only a few existing comparative country studies exist. Most studies have explored a few contexts: Mexico-U.S. (e.g. Curran and Rivero-Fuentes 2003, Massey and García España 1997, Palloni *et al* 2003); Central and South America (e.g. Parrado and Cerrutti 2003 for Paraguay-Argentina migration); Poland-Germany (Kalter 2011); out-migration from Albania (Stecklov *et al* 2010); and internal migration (e.g. Curran *et al* 2005 for the Thai case). Few

studies have explored the influence of migrant networks across different contexts (Cerrutti and Gaudio 2010; Massey *et al* 2006; Toma and Vause 2011). Indeed, it is important to test the migrant network hypothesis in a diverse range of contexts in order to understand how migrant networks act to influence migration behavior and how these effects may vary with context. We intend to contribute in this area.

Third, although the action of migrant networks is a key link between the individual micro level with the macro level of migration systems, there has been little theoretical or empirical exploration of how context might affect the action of migrant networks. To do so is complex. Context involves time, space, social norms and expectation, opportunities and more (Entwisle 2007). The well-studied community-level migrant networks may already be an intersection for context and (non-personal) migrant networks, but this has not always been viewed as such. In this paper, we attempt to extend and contribute to the theoretical and empirical discussion of personal migrant networks, and test it empirically. Overall, we have the opportunity to compare three different flows of migration between Africa and Europe; develop relevant and testable hypotheses and contribute, we hope, to the theoretical debate around migrant social capital.

BACKGROUND

Social capital theory and previous work

Social capital theory proposes that individuals can potentially access valuable information and resources through their relationships with others. In fact, an individual's social capital depends on the relationship that may allow access to resources, as well as the amount and quality of the resources (Bourdieu 1986). Bourdieu proposed that social capital may be converted to other forms of capital: e.g. economic and cultural (1986: 251); while Coleman (1988) argued that social capital is not completely convertible and can even be specific to certain activities, like migration. Portes (1998) advocated for distinguishing among three dimensions of social capital: 1. possessors (those claiming social capital); 2. sources of social capital; and 3. the resources themselves. Building on this previous scholarly work, Garip (2008) proposed a comprehensive empirical framework that defined several dimensions of migrant social capital: recipients; sources (strong or weak ties); and resources (amount, accessibility, and diversity).[1]

In terms of the decision to migrate, the migrant network hypothesis predicts that the migration of a person directly affects the migration likelihood of those in his or her social network. Nearly

[1] All these authors have characterized social capital as an individual good. Putnam's perspective of social capital as a collective good (2000) is not applicable here.

all the existing migration literature has focused on how the tie to the migrant can facilitate migration by providing information and resources that lower the costs or risks of the migration act (e.g. Donato et al 2008) and life at destination (e.g. Hondagneu-Sotelo 1994), while increasing its potential benefits, especially access to better quality jobs (e.g. Amuedo-Dorantes and Mundra 2007, Munshi 2003). The literature, especially the quantitative, has shied away from exploring how migrant networks can *dissuade* migration by decreasing its benefits by investing and making life at origin more attractive; by increasing its costs or risks by communicating negative accounts of the migration act or life.

The migrant social capital literature has documented various effects of social capital on international migration. The literature has found strong and consistent effects for strong kinship ties (e.g. Cerrutti and Massey 2001; Curran et al. 2005; Espinosa and Massey 1999; Kanaiaupuni 2000), varying effects for weak kinship ties and strong effects for friendships (Liu 2013), and variable effects for weak non-personal community ties (e.g. Curran et al. 2005; Garip 2008: Massey and Espinosa 1997). There is ample evidence that network effects are gendered (e.g. Curran and Rivero-Fuentes 2003). While the literature is still susceptible to critiques that it fails to properly capture the mechanisms of social capital and instead relies on proxies (Gonzaléz-Ferrer and Liu 2012), Garip (2008) has made significant advances to define more precisely the resources that migrant networks may provide, for example by distinguishing among amount, diversity and accessibility of resources.

Context and Migrant Social Capital

To the best of our knowledge, there has been very little study on how context and migrant social capital might be related.

While it is rare to focus specifically on the mechanisms of migrant networks, some comparative migration studies have included migrant networks at least as a covariate in their analysis. To our knowledge, there are at least three (Massey *et al* 2006, Cerrutti and Gaudio 2010, Toma and Vause 2011). First, in a study distinguishing between patriarchal (Mexico and Costa Rica) and matrifocal (Dominican Republic and Nicaragua) countries, Massey *et al* (2006) found that males with a migrant spouse were more likely to migrate from patriarchal countries, while females with a documented migrant spouse were much less likely to migrate from matriarchal countries (other effects not significant). Second, Cerrutti and Gaudio (2010) compared Mexico-U.S. and Paraguay-Argentina migration, finding that Mexican women with a migrant husband were more likely to migrate to the U.S. and no such effect for neither Mexican men, nor Paraguayan women and men. Third and most importantly, Toma and Vause (2011) investigated gendered migrant networks for migration to Europe from DR Congo and Senegal, using some of

the same data we use here. They found that Senegalese female migration is powered by geographically-concentrated and closely tied networks, while Congolese female migrants are more likely to be "pioneers" and benefit especially from extended family and friend networks.

In a successful attempt at disentangling the causal heterogeneity of migration, Garip (2012) focused on the variability within the Mexico-U.S. migration stream from 1970 until 2000; identified four migrant types (income-maximizing migrants, risk-diversifying migrants, network migrants, urban migrants); and related them to macroeconomic trends, covariates and migration theories. Garip found that although several covariates (e.g. education, household head, gender) had differential effects among the four migrant types, the household network effect (as measured by the number of non-resident household members who were U.S. migrants) was similar and significant overall and for each cluster, while the aggregate community network effect was especially significant for "network migrants". This helps strengthen our argument to analyze the mechanism of migrant networks, even though we do not identify nor distinguish among migrant types. At the same time, we intend to work in the same spirit of her approach albeit with a distinct focus: to understand and disentangle whatever heterogeneity may exist in how migrant networks impact different migration flows.

Former colonial relationships

From at least the 17th to the 19th centuries, international migration was dominated by colonial migrations (Castles and Miller 1993: 47). This included the movement of European colonists to Africa, the Americas, Asia and Oceania, the slave trade from Africa to the Americas, the movement of indentured workers from China and India and some movement from the colonies to Europe. From the mid-19th century until the early 20th century, the rise of industrialization led to further movement between Africa and Europe, within different continents and between other continents (1993: 54).

Even after independence from colonial powers, colonies continue to have many connections to the former colonial power. In his framework of linkages in a migration system, Fawcett (1989) proposes that former colonial connections also often reflect similarities in language, education systems, compatibility of value systems and culture over all. In addition, religious institutions or beliefs may also be part of the colonial inheritance. In addition, migration of individuals before independence and sometimes afterwards is facilitated by these former colonial connections, which are sometimes institutionalized through special visa and citizenship policies (e.g. Padilla and Peixoto 2007 discuss the cases of Spain and Portugal). The possession and lack of these special former colonial links provides a rich context in which to explore the effects of migrant networks.

CONTEXTS OF MIGRATION AND HOUSEHOLD DECISION-MAKING

Overall, the contexts of migration are impacted by factors both at origin and destination. In an analysis of migration patterns from 1975-2008 using MAFE household survey data, Schoumaker *et al* 2012 found that migration to neighboring African countries dominated initial migration flows from Ghana and Senegal, with the share falling as migration to Europe grew. The opposite pattern is seen for DR Congo: greater initial and then falling share of flow to Europe and less initial and then growing flow to other African countries. Flows appear to favor migration to the ex-colonial power (Belgium for DR Congo, UK for Ghana and France for Senegal), although this is less the case for DR Congo. Since the 1990s, flows have intensified towards northern destinations (Europe and North America) from Ghana and Senegal, in part due to economic crises at origin, anti-immigrant policies in traditional African destinations and new labor market opportunities in Europe. For DR Congo, growing opportunities in Africa (specifically Angola and South Africa) have led to decreased flows to northern destinations. Also, northern destinations have diversified for Ghana and Senegal, while they appear to be stable for DR Congo.

DR Congo has had a tumultuous history since independence from Belgium in 1960. Hesselbein (2007: 15-16) identifies different periods of state formation and collapse: state formation (1960-1964); state building (1964-1973); 'Things fall apart' (1974-1990) when there was a drastic and continual economic decline, as well as the negative effects of structural adjustment; 'The road to collapse' (1990-1997) when the situation worsened even more once international aid flows stopped and nearly 1 million refugees from Rwandan's civil war (1994) flowed in. Two wars (1996-1997 and 1998-2002) further devastated RD Congo with a peace accord signed in 2002, and elections held in 2006.

Before and after independence from the United Kingdom in 1957, Ghana had a prosperous and stable economy and received many migrants from neighboring countries in Africa (Anarfi *et al* 2003). However, the economic situation started to fail in the mid 1960's and worsen still in the 1970's (Anarfi *et al* 2003). This was associated with a tumultuous political period, which included several regime changes from 1978 until a military coup d'état in December 1981 and thereafter an enduring military dictatorship (Kraev 2004). In 1983, Nigeria expelled all foreigners, including 900,000 to 1.2 million Ghanaians (Anarfi *et al* 2003), which worsened an already bleak economic situation. That same year, the Ghana government accepted a standard structural adjustment reform package from the World Bank, and with the capital inflows, high GDP growth resulted (Kraev 2004). A process of democratization resulted in national elections in 1992, 1996 and 2000. Nevertheless, inflation rates remained high and the economy stagnated

in the 1990's (Kraev 2004: 26). Anarfi *et al* (2003: 8) write that there has been a "diasporisation" since the mid-1990's, with Ghanaians migrating to the UK, U.S., Canada among many other countries.

Senegal has been relatively stable politically and economically since its independence from France in 1960. The first Senegalese migrants to Europe were members of the French army who found work in the port of Marseilles (Gerdes 2007) in the early 20th century and later individuals recruited to work in the French automobile industry in the 1960's (Jabardo Velasco 2006). With the oil crisis in 1973 and the recessions that preceded it, France essentially closed its borders to further labor migration (Jabardo Velasco 2006). In the 1970's and early 1980's, the groundnut crisis, faltering prospects in Senegal and growth in labor-intensive agriculture led new Senegalese migrants to move to Italy and Spain (Jabardo Velasco 2006; Lacomba and Moncusi 2006). Pressures to migrate increased as Senegal's economic crisis deepened in the 1980's with the first round of structural adjustment programs (SAP), which affected Senegal society adversely and perhaps permanently (Lopez and Hathie 1998), and then again in the 1990's, with the crippling SAP II from 1990-1994 (African Development Bank Group 2001) and the devaluation of the currency on January 1st, 1994 (Gerdes 2007).
A summary of the major time periods for the three countries are in Figure 1:

Figure 1. Economic and Social History summarized for DR Congo, Ghana and Senegal 1960-2009

Time Periods	DR Congo	Ghana	Senegal
1960-1973	State forming or state building	Economic situation failing	Free migration to France
1974-1982	'Things fall apart', Structural adjustment programs	Economic and political turmoil	Groundnut crisis and failing economic prospects
1983-1989	'The road to collapse' politically, socially and economically	Structural adjustment program, In-flow of a million returnees from Nigeria, economic woes	First structural adjustment programs (SAP), economic woes
1990-1995		Democratization, stagnating economy	1990-1994. SAP II 1994- devaluation of the CFA
1996-2002	Armed conflict	Democratization and diasporisation, some economics growth	Economic recovery
2003-2009	Recovery from conflict	Steady economic growth	

Family and household contexts

There are various similarities among the family cultures of DR Congo, Ghana and Senegal. All three have at least a double (indigenous, European Christian) if not triple (indigenous, Arabic Islamic, European Christian) cultural heritage. Although both Ghana and and Senegal share the triple heritage, the European Christian culture (and its ideals of the nuclear family, for example) is much more influential in Ghana, while, in Senegal, the Arabic Islamic influence is stronger (and the ideals of extended family, polygamy for example). All in all, the role of extended families and households and the extent of collective decision-making appear to be the most important for the Senegal family context, in part due to the European Christian heritage's more limited role in general and especially its ability to "nuclearize" the concept of family.

As in other societies in Sub-Saharan Africa, families in the Democratic Republic of Congo are quite extended (Findley 1997). Furthermore, couples, but also parents and children, may commonly live in separate places. In matrilineal ethnic groups, wives and children are commonly engaged in circulation patterns between the husband's home and the wife's place of origin. In other cases, multi-residence of the couple is due to labor migration. In addition to a good deal of child fostering[2], RD Congo is characterized by a substantial degree of resource flows between and among households, predominantly within the same extended family (Shapiro et al., 1995). It has been demonstrated for instance that rural and urban households in Congo complement each other and form a common social unit (MacGaffey 1983). The ability of families to live apart has mainly been described in rural contexts and in socio-anthropological studies dedicated to the functioning of lineage systems. It seems that the process of urbanization, joined to the surge of new Christian churches, tends to reinforce nuclear families and co-residence ways of living of their members (Ngondo 1996). Multi-residence seems however to remain a quite common living arrangement for Congolese families.

According to Ardayio-Schandorf (2004), the Ghanaian family has a "triple heritage": in the traditional or indigenous culture, the extended family was the unit which together took care of its dependents (children and elderly), worked, owned property and could even live in several residences (2004: 132); the Arabic Islamic culture reinforced some existing indigenous practices like polygny, child fostering and communal living (2004: 134); while the European Christian culture disrupted these practices and encouraged the nuclear family and monogamy (2004: 134). Depending on the state, both patrilineal and matrilineal systems exist. In matrilineal systems, women have been denied property ownership rights (2000: 145). Traditionally, the family has

[2] According to Demographic and Health (DHS) surveys in African countries, between 9 and 35 percent of households shelter children who live without their parents (Pilon et. 2006).

had an important role in spouse selection, although parents appear to intervene less when their children are more educated (2004:138).

Like the family in Ghana, the concept of the Senegalese family is also influenced by the triple heritage, although the Arabic Islamic influence has a greater influence (Bass and Sow 2004). However, polygamy is a rather common practice in Senegal and is recognized and protected by Senegalese family law. The traditional family structure is patrilineal and involves the co-residence of several brothers, their wives, children (Gabrielli 2010). Generational hierarchies are important and respected in families (Bass and Sow 2004: 92-93) and in villages (Gabrielli 2010). Marriage also tends to be a family decision, with many marriages occurring between maternal or paternal cousins (Bass and Sow 2004). Both urbanization (Gabrielli 2010) and migration (Barou 2000) have led to a disruption of traditional family structures.

WORKING HYPOTHESES

Stages of migration

H1. We expect that network influence changes in the different stages of migration: strong ties being more important in earlier stage flow, and weak ties growing in importance in later-stage flow.

H2. In terms of amount of migrant network resources, we could expect opposing effects. On one hand, we expect that the amount of network resources drops in importance as migration flows mature, and so resources will appear to be more important for earlier stage flow than later stage flow. On the other hand, with migration becoming more difficult in recent times with increasing restrictions on migration, we could expect that later migration flows benefit especially from network resources.

H3. We expect that the diversity of network resources rises in importance as migration flows mature, and so diversity resources will be more important for later-stage flow than for earlier-stage flow.

Economic climate

H4. We expect that migrant networks grow in importance during periods of economic crisis and uncertainty (and poor labour market conditions) at origin and weaken during periods of economic growth and strength.

Ex-colonial links

H5. When comparing categories of destination countries, we expect that migrant network effects are weaker for migration to countries with ex-colonial links than for countries without these links. Countries linked by a history of colonialism are more likely to share language, culture and institutions. All these similarities *already* facilitate migration, making networks not as important.

Non-household migrant networks vs. Household migrant networks

H6. Regarding the household decision-making alternative explanation, we expect stronger household migrant network effects where the "household" measure is closest to the individuals participating or subject to "household decision-making". In Senegal, where the extended family appears to play an especially large role and where "household" network measures exclude off-site extended family who may still be subject to or participants of household decision-making, we would expect stronger non-household migrant networks effects in relation to household migrant networks than in countries where this is not the case.

DATA AND METHODS

This paper will use longitudinal data from the three flows of the Migration between Africa and Europe (MAFE) project (2008-2010)[3] and is a first effort to develop a comparative study of migrant networks. Individuals were interviewed at origin (DR Congo, Ghana, Senegal) and at destination (Belgium, France, Italy, Netherlands, Spain and the U.K.). In the countries of origin, non-migrants and return migrants were interviewed. In the countries of destination, Congolese migrants were interviewed in Belgium and the U.K.; Ghanaian migrants were interviewed in the Netherlands and the U.K; and Senegalese migrants were interviewed in France, Italy and Spain. Nearly identical individual questionnaires were utilized in each survey location. These three migration systems are captured in Figure 2.

[3] The MAFE project is coordinated by INED (C. Beauchemin) and is formed, additionally by the Université catholique de Louvain (B. Schoumaker), Maastricht University (V. Mazzucato), the Université Cheikh Anta Diop (P. Sakho), the Université de Kinshasa (J. Mangalu), the University of Ghana (P. Quartey), the Universitat Pompeu Fabra (P. Baizan), the Consejo Superior de Investigaciones Científicas (A. González-Ferrer), the Forum Internazionale ed Europeo di Ricerche sull'Immigrazione (E. Castagnone), and the University of Sussex (R. Black). The MAFE project received funding from the European Community's Seventh Framework Programme under grant agreement 217206. The MAFE-Senegal survey was conducted with the financial support of INED, the Agence Nationale de la Recherche (France), the Région Ile de France and the FSP programme International Migrations, territorial reorganizations and development of the countries of the South. For more details, see http://www.mafeproject.com/.

The data is based on a retrospective biographical questionnaire with housing, union, children, work and migration histories documented. Detailed information is recorded for each union, child, and period (eg. housing, work). While individuals provided general information about the entire work period, they were asked to specify much of the housing information to the beginning of each housing period (including who lived in the household). Additional information about migrant networks, documentation status, remittances and properties is available.

The migrant network indicators (and the indicators for the two alternative explanations: household strategies and legal family reunification) are based on two initial questions:

1. Since you were born, has your <u>father</u> (mother, a brother, a sister, a spouse/partner, a child) lived at least one year outside Senegal?

2. Have any other members of your family or friends, on whom you could have counted on to help you to migrate, lived at least one year outside Senegal? If so, how many?

The interviewer would then record the network member's sex, relationship to the respondent, name (optional), the year they met (in case of friends) and year of death when applicable. Finally, the network member's entire migration trajectory (countries, years), starting from the first year this person lived outside of their country of origin. About 1200 current Congolese, Ghanaian and Senegalese migrants in Europe and nearly 3000 residents in the Democratic Republic of Congo, Ghana and Senegal were interviewed.

Model

Discrete-time event history analysis is employed to predict first migration to Europe from the origin countries. To test the first four hypotheses (hypothesis 1-4), three separate models (DR Congo, Ghana and Senegal) will be run, and we will apply a logistic analysis to predict first migration to Europe. To test the other hypotheses, we pool the data and apply a multinomial logistic analysis in order to distinguish among different sets of outcomes: 1. Migration to ex-colonial power vs. migration to other destinations in Europe (hypothesis 5); and 2. Migration from Congo vs. migration from Ghana vs. migration from Senegal (hypothesis 6).

Social capital indicators

Social capital indicators capture the sources of social capital (strong/weak ties, gradient tie strength), as well as the amount and diversity of resources. A kinship chart (Figure 3) illustrates

which relationships are related to which source of social capital. This is inspired, in part, by Espinosa and Massey (1999). In general, we distinguish between strong ties (siblings and parents) and weak ties (extended family members and friends). Only non-household network members are included in these measures. Household network members are a proxy for the household decision-making alternative explanation (see below). Also, spouses are excluded from all migrant network measures, but are included in the family reunification alternative explanation (see below). Only years lived by network members in Europe are included. To avoid possible endogeneity challenges, only migrant friendships which survive a rigorous treatment are included: friend and respondent must have met while both had *only* ever lived in country of origin (DRC, CO, GH); friendships are included only once they are at least three years old; friendships where date met is unknown are excluded. All network indicators are lagged by one year.

The "size of migrant network" indicators report the number of individuals in the network and distinguish between household and non-household members, and also between network members located in ex-colonial countries (Belgium for Congolese, the United Kingdom for Ghanaians, France for Senegalese) and other countries in Europe.

In terms of the amount and diversity of social capital resources, I use the cumulative network experience in Europe, as measured in years, in order to capture amount of migrant social capital. For diversity, I model my diversity index after Garip's 2008 diversity index (which, in turn, is based on Shannon 1948):

$$Diversity = \frac{-\sum_{i=1}^{n} p_i \times \log(p_i)}{\log(n)} \times 10 \ ,$$

where n is the number of possible destinations, and p is the proportion of migration experience to each destination i. The index varies between 0 (all migration experience concentrated in one destination) and 10 (migration experience equally distributed among all destinations). There are four different destination categories, which exhaust the possibilities for all Senegalese would-be migrants: France, Italy, Spain and other countries.

Complementary (or alternative) hypotheses

This paper accounts for two alternative hypotheses: household migration strategies and family reunification. Both concepts are based on Liu (2013). The migrant network hypothesis has at least two complementary explanations that we will account for. First, household decision-making strategies reflect the double prediction by neoclassical economics theory and new economics of labor migration theory that individual migration may be correlated with household

or family migration due to either an effort to maximize household-level income (neoclassical economics) or an effort to diversify the risks of a household in different markets (new economics of labor migration). This was first operationalized through father migration by Palloni and colleagues (2001), and later through a time-varying indicator for household migration by Liu (2013).

Second, the promise of legal family reunification also creates a specific and special link between certain individuals at origin and destination. This is especially true for legally married spouses with one spouse at destination and another at origin, as well as minor children at origin whose parents live at destination. Since legal family reunification has a separate series of bureaucracy, costs and benefits than other kinds of migration and our focus is only on adult migration, we will follow in the footsteps of Liu (2013) to account for the migrant spouse explanation separately and to measure migrant network effects independent of it.

To capture the first hypothesis, we utilize information from the housing module and the migrant networks module to develop dynamic indicators of household and non-household migrant networks. We use household migrant network indicators as proxies for household migration strategies, and thus non-household migrant networks represent the clean migrant network effect in all models. The basic concept is illustrated in Figure 4. For the second alternative explanation, we use a proxy for spousal reunification at destination. Specifically, we measure whether Ego already had a spouse in Europe in the year previous (*t-1*) to the year of analysis *(t)*.

Covariates

In all models, we account for a range of time-varying and static covariates. These include: age, age squared, gender, *father's education* (no formal schooling; primary; lower secondary; Baccalaureate and above), *firstborn*, *number of siblings*, *own highest level of education* (no formal schooling; primary; lower secondary; Baccalaureate and above), marital status, number of children, occupational status (working, studying, unemployed, at home, retired, otherwise inactive), landownership, homeownership, business ownership, period effects (for now, we use two simple periods which approximate important periods for sub-Saharan African migration flows to Europe: before 1995; 1995 and after)[4]. The macro-economic indicators are GDP per

[4] These periods (before 1995; 1995 and after) also reflect important historical moments for each country of origin. 1995 was the first full year after Senegal devalued its currency drastically. 1995 was the final year before DR Congo fell into a period of extended armed conflict. For Ghana, 1995 marked the beginning of a time of more stable economic growth, although Ghana was still racked by sky-rocketing inflation. It was also a time of growing and consolidating democratization in Ghana. The second free post-dictatorship elections were held in 1996.

capita growth (annual %) and inflation in consumer prices (annual %). These were gathered from the World Bank's World Development indicators and are available from at least 1968 for all three countries of origin. All indicators other than those listed in italics are time-varying, year by year.

PRELIMINARY RESULTS

Table 1 displays some descriptive statistics for migrants and non-migrants. In terms of migrant networks, there is some variation among the three migration flows. Congolese migrants to Europe appear to be most likely to have non-household migrant networks in the year of migration, and these networks are significantly larger than either those of Ghanaian or Senegalese migrants.

In terms of the first hypothesis (that strong ties are especially important in earlier stage flow, and weak ties in later stage flow), we do not find evidence supporting it. While the direction of some results (Ghana and Senegal interaction of strong tie and period) are as predicted (Table 2), the only statistically significant result is that for migration from Senegal, weak ties are actually less important in later-stage migration ($p<0.05$). In other words, the evidence refutes our hypothesis. One possible explanation for why weak ties drop in importance in later-stage migration is that once migration is more prevalent, the migration information they provide is no longer as novel or as helpful as when migration is rare.

In terms of the second hypothesis about either the growing or receding importance of the amount of migrant network resources, we find that the amount of network resources grows in importance in later-stage flow for both Congolese ($p<0.05$) and Ghanaian migration ($p<0.001$). It is possible that as these migration flows have developed, migration has become more difficult (possibly due to more restrictive immigration policies) and the amount of migrant network resources becomes even more important than before.

With regards to the third hypothesis about the growing importance of the diversity of network resources in later-stage migration, we find evidence that refutes our hypothesis. Indeed, network diversity appears to drop in importance in later stages for both Congolese ($p<0.001$) and Ghanaian ($p<0.01$) migrations to Europe. In other words, the more diverse (destination-wise) their migrant network is, the more likely an individual is to migrate from both DR Congo and Ghana– but that this effect falls significantly for the later period.

Table 4 shows the results in terms of the economic climate. For both DR Congo and Ghana, we

find support for how hypothesis that migrant networks drop in importance during times of economic boom. Specifically, migrant networks appear to be less important as GDP grows for migration from both DR Congo ($p<0.05$) and Ghana ($p<0.001$). The effects for Senegal are in the same direction, but lack statistical significance.

Table 5 displays the results for the analysis with regards to categories of destination countries (ex-colonial power vs. other EU countries). We find no evidence that migrant networks are less important for migration to ex-colonial powers than to other EU countries. Instead, it appears that having a nonhousehold migrant networks (which represent the migrant network hypothesis) is especially important for migration to ex-colonial power (Table 5 Model 1: $p<0.001$), while having a household migrant network (proxy for household migration strategies) appear to be especially important for migration to other EU countries ($p<0.001$). We investigated this further through indicators of network size (Table 5 Model 2) and found that both sets of stronger effects appear to be mitigated, once network size is accounted for.

The final hypothesis deals with the relative strength of non-household migrant networks and household migrant networks, as a result of different family structures and cultures in the three origin countries. We expected that since social norms value collective decision-making over individual decision-making and since the extended (possibly non-coresident) family plays an especially important role in Senegal, the influence of non-household migrant networks will be greater and may even capture some of the family-level migration strategy. Table 2 Models 1 display the results. We find comparable effects for non-household and household migrant networks for Senegalese migration to Europe. On the other hand, it is surprising that we find a very large household migration strategy effect (proxied by household migrant networks) for migration from Ghana. This is both true in absolute terms and relative to migrant networks effects (proxied by non-household migrant networks).

NEXT STEPS

This paper is an initial attempt to explore how the influence of migrant networks may vary depending on different contextual factors. We have attempted to begin clarifying how this happens by analyzing the sources (strong ties and weak ties) and resources (amount and diversity) of migrant networks.

Nevertheless, there remains much to be done. First, for the moment, our specifications are simple, perhaps overly so. Much of our current analysis relies on the identification of two periods. We seek to find better ways to specify our hypotheses. Second, the paper does not yet

explicitly deal with migration policies and how they have changed during the period of study (1970-2008). Exploring ways to do so will be very important.

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TABLES AND FIGURES

Table 1. Descriptives of the Sample, Migrants vs. Nonmigrants for DRC, Ghana and Senegal

		D.R. Congo				Ghana				Senegal			
		Migrants		Nonmigrants		Migrants		Nonmigrants		Migrants		Nonmigrants	
Network variables	Non-household migrant network												
	Having network	0.47	(0.08)	0.17	(0.01)	0.32	(0.04)	0.12	(0.01)	0.36	(0.03)	0.29	(0.02)
	Size of network	1.15	(0.17)	0.31	(0.03)	0.48	(0.06)	0.16	(0.02)	0.69	(0.06)	0.52	(0.05)
Alternative Explanations	Household migrant network												
	Having network	0.16	(0.03)	0.11	(0.01)	0.24	(0.04)	0.03	(0.01)	0.31	(0.03)	0.17	(0.02)
	Size of network	0.39	(0.09)	0.19	(0.03)	0.51	(0.11)	0.04	(0.01)	0.49	(0.04)	0.25	(0.03)
	Migrant Spouse	0.18	(0.08)	0.00	(0.00)	0.09	(0.02)	0.02	(0.01)	0.09	(0.01)	0.02	(0.00)
CO-VARIATES	Age	29.4	(0.9)	39.6	(0.6)	28.1	(0.5)	39.2	(0.6)	26.94	(0.31)	38.94	(0.66)
	Male	0.47	(0.08)	0.40	(0.02)	0.52	(0.05)	0.35	(0.02)	0.69	(0.03)	0.46	(0.02)
Origin Household	Firstborn	0.17	(0.03)	0.23	(0.02)	0.26	(0.04)	0.24	(0.02)	0.27	(0.02)	0.24	(0.02)
	Number of Siblings	7.2	(0.5)	7.3	(0.1)	6.1	(0.3)	6.0	(0.2)	7.24	(0.24)	8.33	(0.27)
Father's	No schooling	0.06	(0.02)	0.11	(0.01)	0.14	(0.04)	0.21	(0.02)	0.45	(0.03)	0.45	(0.02)
Education	Primary	0.10	(0.02)	0.19	(0.02)	0.07	(0.02)	0.20	(0.02)	0.21	(0.02)	0.15	(0.02)
	Lower secondary	0.47	(0.08)	0.43	(0.02)	0.40	(0.05)	0.37	(0.02)	0.27	(0.02)	0.20	(0.02)
	Baccalaureate & above	0.25	(0.04)	0.11	(0.01)	0.32	(0.04)	0.09	(0.01)	na		na	
	Father Unknown	0.04	(0.01)	0.08	(0.01)	0.08	(0.02)	0.07	(0.01)	0.07	(0.01)	0.09	(0.01)
Own household & situation													
	Number of Children	1.4	(0.2)	3.4	(0.1)	0.9	(0.1)	2.4	(0.1)	0.77	(0.07)	2.97	(0.16)
	Have a child	0.52	(0.08)	0.79	(0.02)	0.49	(0.05)	0.77	(0.02)	0.37	(0.03)	0.74	(0.02)
Own	No formal schooling	0.00	(0.01)	0.02	(0.00)	0.00	(0.00)	0.07	(0.01)	0.16	(0.02)	0.27	(0.02)
Education	Primary school	0.00	(0.00)	0.04	(0.01)	0.01	(0.01)	0.03	(0.01)	0.21	(0.02)	0.32	(0.02)
	Lower secondary	0.04	(0.01)	0.17	(0.02)	0.04	(0.01)	0.09	(0.01)	0.24	(0.03)	0.14	(0.01)
	Baccalaureate & above	0.94	(0.01)	0.66	(0.02)	0.72	(0.04)	0.68	(0.02)	0.39	(0.03)	0.15	(0.02)
Occupational Status	Working	0.20	(0.08)	0.58	(0.02)	0.54	(0.05)	0.71	(0.02)	0.63	(0.03)	0.54	(0.02)
	Studying	0.49	(0.08)	0.06	(0.01)	0.38	(0.05)	0.04	(0.01)	0.18	(0.02)	0.03	(0.01)
	Unemployed	0.12	(0.02)	0.13	(0.02)	0.04	(0.01)	0.03	(0.01)	0.08	(0.01)	0.04	(0.01)
	At Home	0.10	(0.02)	0.10	(0.01)	0.02	(0.01)	0.05	(0.01)	0.10	(0.01)	0.21	(0.02)

	Retired	0.01	(0.00)	0.00	(0.00)	0.01	(0.01)	0.05	(0.01)	-		0.03	(0.01)
	Other Inactive	0.09	(0.02)	0.01	(0.00)	0.01	(0.01)	0.01	(0.00)	0.01	(0.01)	0.02	(0.01)
Property ownership	Land	0.08	(0.02)	0.14	(0.02)	0.07	(0.02)	0.13	(0.02)	0.05	(0.01)	0.09	(0.01)
	House	0.08	(0.02)	0.13	(0.01)	0.04	(0.01)	0.06	(0.01)	0.07	(0.01)	0.10	(0.01)
	Business	0.06	(0.01)	0.23	(0.02)	0.06	(0.02)	0.26	(0.02)	0.04	(0.01)	0.08	(0.01)
	N	327		1739		372		1293		585		1083	

Note: Data are weighted. Migrant values from year of migration, Nonmigrant values from survey year

Source: MAFE 2010.

Table 2 Logistic estimation of the odds of being a first-time migrant in a year: Network Sources

	Migration to DR Congo			Migration to Ghana			Migration to Senegal		
	M1	M2	M3	M1	M2	M3	M1	M2	M3
Non-household migrant network	2.43***			5.47***			2.65***		
Sources of Network									
Strong Tie		3.43***	2.76*		1.68	3.02**		2.68***	3.23***
Weak Tie		2.00***	2.89**		5.61***	5.88***		1.68***	2.47***
Periods (ref: pre-1995)									
Post-1995		0.46***	0.51		0.86	0.96		0.98	1.15
Interactions									
Strong Tie*Post-1995			1.4			0.43			0.76
Weak Tie*Post-1995			0.51			0.97			0.57*
Control for household migrant network	1.94**	1.98**	2.06***	10.28***	6.98***	6.67***	2.92***	2.61***	2.61***
Control for migrant spouse	152.41***	139.84***	146.19***	9.06***	9.89***	9.98***	12.87***	13.39***	13.36***

Notes: Results are presented in odds ratios. Controls include age, age sq, gender, *father's education*, *firstborn*, *number of siblings*, *own highest level of education*, marital status, number of children, occupational status, landownership, homeownership, business ownership, period effects. All indicators other than those listed in italics are time-varying, year by year. *Source:* MAFE 2010. *p < .10; **p < .05; ***p < .01

Table 3 Logistic estimation of the odds of being a first-time migrant in a year: Network Resources

	Migration to DR Congo		Migration to Ghana		Migration to Senegal	
	M1	M2	M1	M2	M1	M2
Resources of Network						
Amount	1.02***	0.99	1.03***	1.02***	1.01**	1.01
Diversity	1.22***	1.56***	1.26**	1.66***	1.11	1.17
Periods (ref: pre-1995)						
Post-1995	0.38***	0.46**	0.94	0.98	1.05	1.08
Interactions						
Amount*Post-1995		1.04*		1.02***		0.99
Diversity*Post-1995		0.67***		0.64**		0.94
Control for household migrant Network	1.98**	2.07***	8.54***	8.96***	2.93***	2.92***
Control for migrant spouse	121.43***	126.89***	10.64***	11.00***	13.18***	13.08***

Notes: Results are presented in odds ratios. Controls include age, age sq, gender, *father's education*, *firstborn*, *number of siblings*, *own highest level of education*, marital status, number of children, occupational status, landownership, homeownership, business ownership, period effects. All indicators other than those listed in italics are time-varying, year by year.
Source: MAFE 2010. *p < .10; **p < .05; ***p < .01

Table 4 Logistic estimation of the odds of being a first-time migrant in a year: Economic climate

	Migration to DR Congo		Migration to Ghana		Migration to Senegal	
	M1	M2	M1	M2	M1	M2
Having a Network	2.36***	2.03**	5.48***	9.08***	2.61***	2.71***
Macro-economic indicators						
GDP per capita growth (%)	0.96*	0.99	0.98	1.01	0.97	0.98
Inflation rate (%)	1.00	1.00	0.99**	0.99*	1.00	1.00
Interactions						
Networks*GDP growth		0.94*		0.88***		0.96
Networks*Inflation		1.00*		0.99		0.99
Control for household migrant network	1.97**	1.97**	9.64***	9.50***	2.89***	2.88***
Control for migrant spouse	148.55***	147.79***	9.18***	9.03***	13.18***	13.08***

Notes: Results are presented in odds ratios. Controls include age, age sq, gender, *father's education*, *firstborn*, *number of siblings*, *own highest level of education*, marital status, number of children, occupational status, landownership, homeownership, business ownership, period effects. All indicators other than those listed in italics are time-varying, year by year.
Source: MAFE 2010. *p < .10; **p < .05; ***p < .01

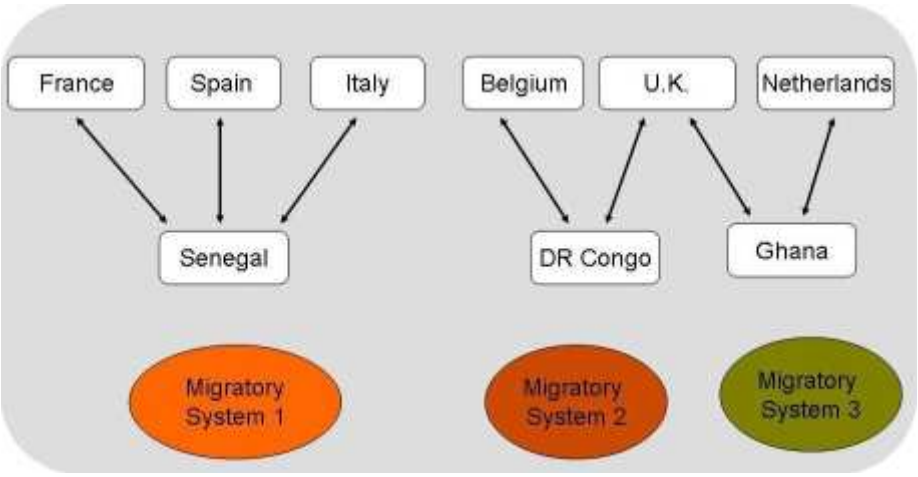
Table 5 Logistic estimation of the relative risk of being a first-time migrant in a year: Migration to ex Colonial power vs. other EU countries

	M1		M2	
	Migration to ex Colonial power	Migration to other EU countries	Migration to ex Colonial power	Migration to other EU countries
Having a Network				
Nonhousehold migrant network	3.97***	2.50***		
Household migrant network	1.92***	3.57***		
Size of Network				
Nonhousehold migrant network			1.46***	1.31***
Household migrant network			1.53***	1.66***
Control for migrant spouse			8.10***	8.78***
N (person years)			96,100	96,100

Notes: Results are presented in odds ratios. Controls listed previously.
Source: MAFE 2010. *p < .10; **p < .05; ***p < .01

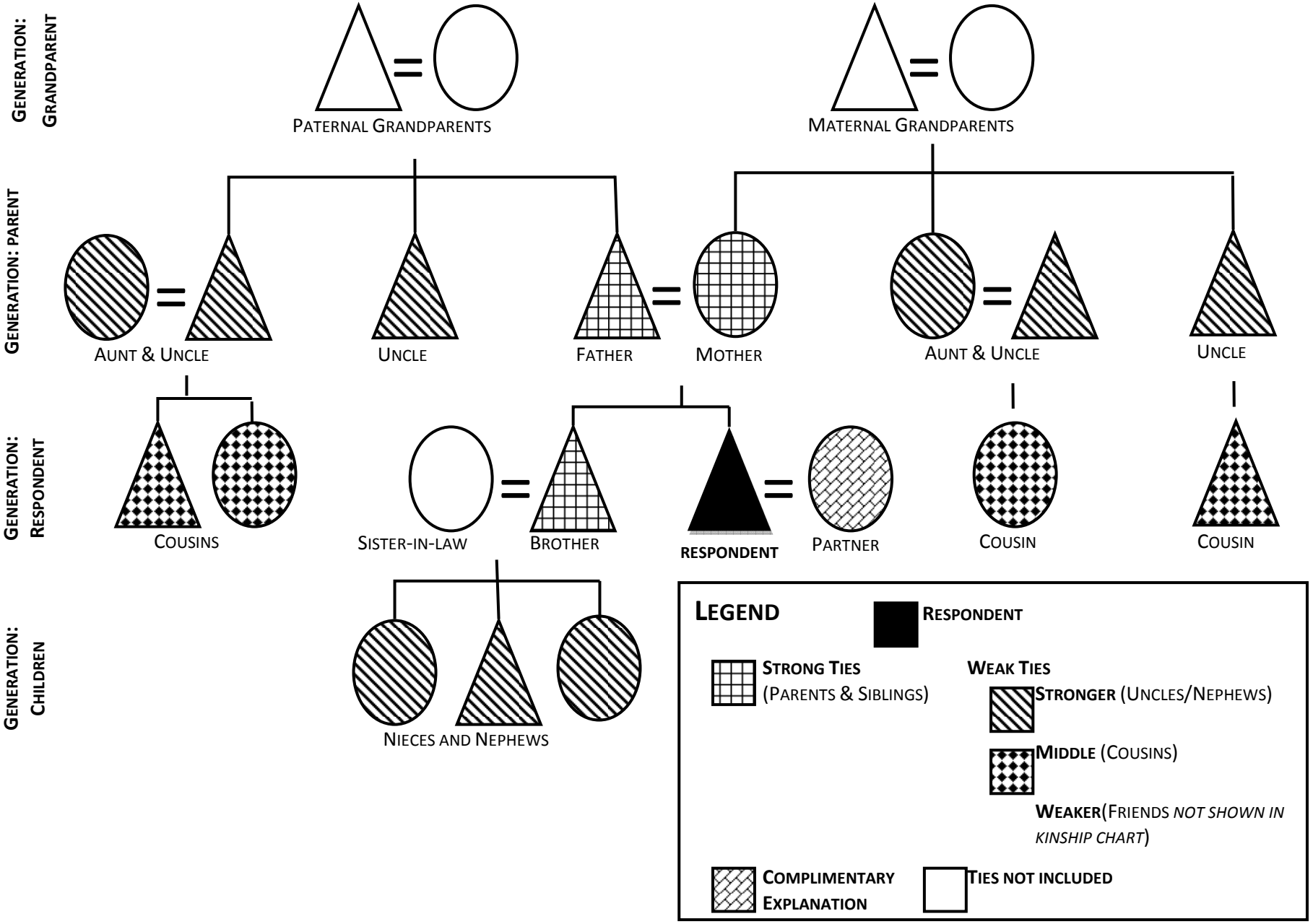
FIGURES

Figure 2: The three migration systems of the MAFE project



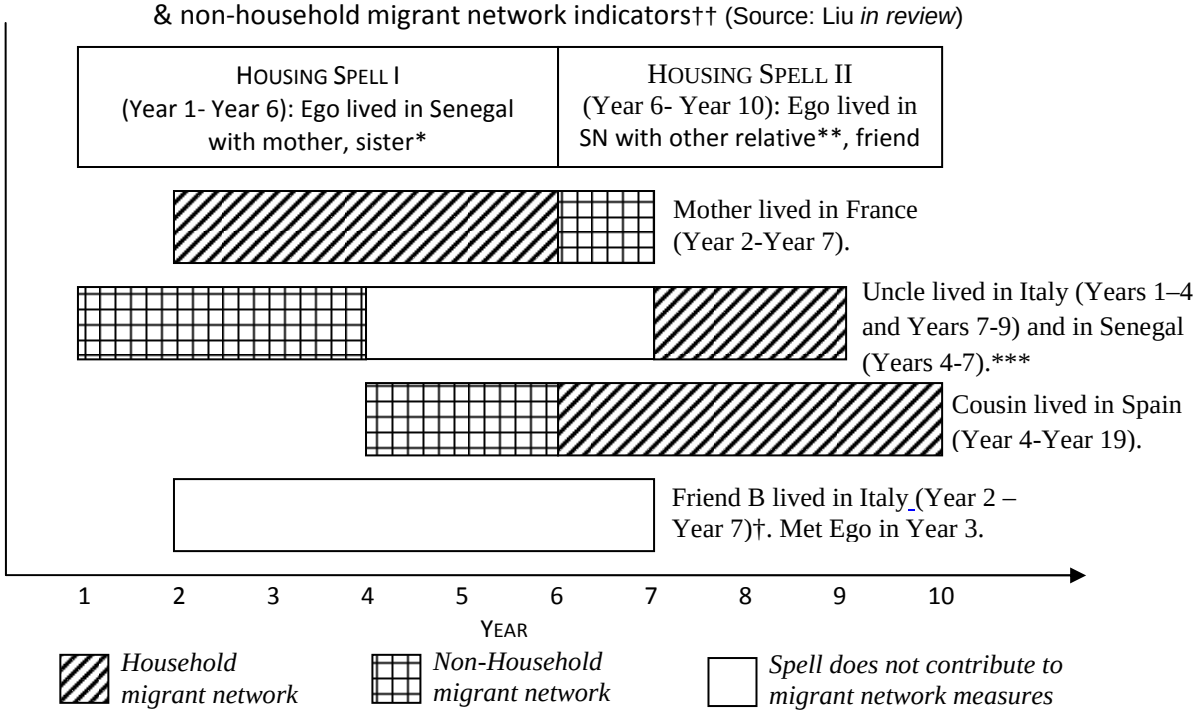
Source: http://www.mafeproject.com/

Figure 3: Kinship Chart, Strong and Weak Ties (Source: Liu *in review*)



Tie

Figure 4: Construction of household migrant network
& non-household migrant network indicators†† (Source: Liu *in review*)



* Housing composition is only available for first year of housing spell (Year 1 for Spell I, Year 6 for Spell II)
** Cousins, uncles/aunts, nieces/nephews, grandparents are all recorded as "other relative" in housing module.
*** Only years lived in France, Italy and Spain qualify for migrant network measures.
† Friend B is excluded from migrant network measures because friendship with Ego started *after* Friend moved to Italy.
†† Not shown: network indicators are lagged by one year (to avoid capturing simultaneous migration with Ego)