

# **Gender differences in the role of migrant networks: Comparing Congolese and Senegalese migration flows**

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## **Abstract**

This paper uses recent longitudinal data collected within the Migration between Africa and Europe (MAFE) project to investigate gender differences in the role of migrant networks in international mobility. We compare Congolese and Senegalese migration streams to further examine how the interplay between gender and networks varies across contexts of origin. Based on discrete-time hazard models, our research confirms previous findings in other contexts of a differential influence of networks in male and female migration; it also brings out substantial differences between the two countries. While networks influence in a similar way male migration from both countries, Senegalese and Congolese women rely on different types of networks in order to migrate. The former have more chances to follow rather than to go first and to migrate once a close family network has established itself for a long period of time in the same destination. The latter are more likely to explore new destinations, are also relying on friends and extended kin to migrate and benefit less from highly concentrated networks. We relate these findings to the more rigid patriarchal norms restricting female autonomy in Senegal, both in terms of mobility and economic activity.

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## 1. INTRODUCTION

The influence of social networks on international migration has increasingly been documented by recent scholarship (Curran and Saguy 2001; Winters, de Janvry and Sadoulet 2001; Palloni et al. 2001; Curran and Rivero-Fuentes 2003). By linking individuals across borders, migrant networks influence migration at different stages: they may contribute to the decision of migration, the choice of destination and the route of migration. They may also facilitate the integration of migrants upon arrival, and shape migrants' remitting behaviour.

Another strand of literature, developing in the last two decades, has shown important gender differences in patterns of international migration. Men and women differ in their motivations for moving to another country and in their settlement patterns at destination. However, as noted by Curran and Saguy (2001), research integrating both social networks and gender issues in the analysis of migration processes has remained scarce. The effects of networks have been assumed to be the same for men and women alike. This is problematic since we could reasonably expect the role migrant networks play in men's and women's mobility to be different, given that the costs, risks and benefits of migration also differ – or rather are differently constructed – by gender. The few existing studies that have “engendered migrant networks” (Curran and Rivero Fuentes 2003) have so far provided empirical evidence for a differential effect of networks on male and female migrations and suggested several hypotheses as to why this would be the case (Davis and Winters 2000; Davis, Stecklov and Winters 2002; Curran and Rivero Fuentes 2003; Curran et al. 2005;). However, their findings, which do not always go in the same direction, are rather limited in geographical scope, being based almost exclusively on the Mexican migration to the US and the internal migration in Thailand.

In this paper, we use recent longitudinal data collected in Senegal, the Democratic Republic of the Congo (hereafter DR Congo) and several European countries within the Migration between Africa and Europe (MAFE) project<sup>3</sup>, to further investigate gender differences in the role of migrant networks on international migration. More precisely, our paper has the following objectives: first, to assess the extent to which the effect of migrant networks on individual migration propensities varies according to the gender of the potential migrant. Second, to investigate whether men and women mobilize different types of ties in order to travel abroad or, in other terms, to see which network compositions are the most effective in facilitating migration for men and women respectively. Third, we examine whether networks influence men's and women's migration through different channels. A final

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and transversal objective is to analyse whether the interplay between gender and migrant networks varies between the Senegalese and the Congolese cases.

Our research complements existing scholarship in several respects. First, there is not much research on this topic outside of the Mexico-US migration context, and to our knowledge, no such quantitative research exists on Africa. Second, comparative research between two countries, using strictly comparable data and methods, provides an opportunity to analyse the role of context-specific factors on the functioning of networks, such as cultural differences in female autonomy and historical differences in migration trends. Last but not least, this study relies on the use of longitudinal data on social networks collected at the individual level, proposing thus a new type of measure for studying the role of networks in migration.

The paper is organized as follows: section two provides an overview of the theoretical and empirical literature on the role of migrant networks in men's and women's migration processes. The third section introduces some elements of the Congolese and the Senegalese contexts, in particular relative to the prevailing gender norms and the history of migration flows in the two countries, and details our research questions and hypotheses. Section four describes the data and the methods used in this analysis, while results are described in the fifth section. A final section discusses our findings and advances our conclusions.

## ***2. LITERATURE REVIEW***

### **2.1 The influence of migrant networks on international migration**

A major development in the study of international migration has been the acknowledgment of the importance of social networks in this phenomenon. According to the networks perspective, the migration decision is not taken by the individual acting autonomously – as earlier tenants of the neo-classical economic models assumed – but takes place within larger social structures: families, friendship circles and origin communities (Boyd 1989; Ritchey 1976). As Tilly (1990) argues, networks, and not people, are at the centre of the migration process. The focus is thus placed on migrant networks<sup>4</sup>, defined as “sets of interpersonal ties that connect migrants, former migrants and non-migrants to one another through relations of kinship, friendship and shared community origin” (Massey et al. 1993: 448). The development of networks makes the process of migration less selective and less dependent on its initial causes, generating a self-sustaining process which Massey and his colleagues have called “cumulative causation”.

At an individual level, the same authors were the first to argue that migrant networks are a form of social capital that “people can draw upon to gain access to foreign employment” (Massey et al. 1993: 448). Thus, the network hypothesis predicts that people who are

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<sup>4</sup> Following Elrick and Ciobanu (2009), we propose to distinguish between *migrant* networks and *migration* networks. A *migrant* network is here understood as the personal network (ego-network) of a (would-be) migrant, in other words the individual social relations that she or he develops and that may turn out helpful in the process of migration. These migrant networks extend beyond a given community; they transcend geographical locations as well as social spaces such as communities, families or friendships. By contrast, we regard a *migration* network as the “aggregate of the various personal migrant networks available to a specific group of people, such as members of a particular community” (Elrick and Ciobanu 2009). Our focus in this paper is on migrant networks, and our analysis is thus situated at an individual level.

connected to current or former migrants are more likely to migrate in their turn. The general assumption is that a network connection to a prior migrant can lower the costs and risks of movement and increase the expected net returns to migration. It is argued in the literature that migrant networks lower the costs and the risks of migration by providing information on border crossing and living conditions at destination, by assisting the new migrant with transportation or with accommodation at destination and by (partly) financing the migration trip. Furthermore, networks are presumed to increase the benefits as they provide information on (better) jobs or refer the new migrant to employers, thus facilitating their economic integration in the host society. A growing number of empirical studies situated at the micro-level<sup>5</sup> have confirmed the network hypothesis: individuals with links to migrants have more chances of migrating (Palloni et al. 2001; Massey and Espinosa 1997) and of choosing the destinations where they have “connections” (Bartel 1989; Jaeger 2000). Ethnographic evidence going back several decades has similarly pointed to the importance of friends and family in the migration process (Macdonald and Macdonald 1964; Ritchey 1976; Caces et al. 1985).

However, the literature has too closely equated migrant networks with social capital and assumed that networks are always beneficial to individuals. As Portes says: “social capital stands for the *ability*<sup>6</sup> of actors to secure benefits by virtue of membership in social networks or other social structures » (Portes 1998: p.6). He thus makes a distinction between the social structure and the benefits one *may* secure through it. He further argues that this ability depends on the *attributes of the recipients*, on *the nature of their ties to sources* and on the *resources* the sources can command. Partly due to data limitations, many studies have analysed migrant networks as an *undifferentiated resource* and assumed their effects to be the same irrespective of their composition and across different groups of individuals. We argue here that migrant networks are not always a source of social capital, and seek to investigate precisely when, how and for whom they become one. Following Garip (2008) who applied Portes’ framework in migration studies, we examine how the effect of migrant networks depends on the attributes of the potential migrant, the nature of their ties to prior migrants and the resources these prior migrants may have.

## 2.2 The gendered nature of the migration process

Gender is one of the fundamental dimensions structuring role relations and influencing the nature of expectations and of exchanges in most societies. Gender relations have been shown to shape migration processes, as men and women tend to have different migration experiences, different settlement patterns and to maintain different relations to their origin communities (Pessar 1999; Hondagneu-Sotelo 1994; Boyd and Grieco 2003). As Cerutti and Massey argue: “In Mexico, who migrates and why is likely to be related strongly to gender and household position. Not every family member is in a position to consider migration as a realistic alternative. Cultural values, normative expectations, and social institutions, as well as historical and structural factors, inevitably shape the range and number of choices” (Cerutti

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<sup>5</sup> Most empirical studies testing the network theory are situated at an individual level and consist in evaluating the influence of networks on individual migration propensities (see Massey et al. 1998 for a review) This is also the perspective the present paper takes.

<sup>6</sup> Our emphasis

and Massey 2001:190). However, despite these findings, the role of migrant networks has mostly been analysed from a *gender-blind perspective*. Rare are the studies which do not assume that networks act in the same way and are similarly mobilized by men and women in their migration process. Moreover, few set out to investigate whether the content and “quality” of ties to prior migrants differ according to their gender.

In recent years, however, several studies have integrated a gender perspective to the analysis of migrant networks, most of them based on the context of the Mexican migration to the United States<sup>7</sup> (Hondagneu-Sotelo 1994; Kanaiaupuni 2000; Cerutti and Massey 2001; Curran and Rivero-Fuentes 2003; Davis and Winters 2000), with a few referring to internal migration in Thailand (Curran et al. 2005). Their findings point to several ways in which gender relations may shape the role played by migrant networks in the migration process.

### **2.2.1 Female migration perceived as more «risky»**

First, men and women face different barriers to moving abroad. As Lindstrom shows (1997), the prevailing discourse in rural Mexican communities is that women’s migration is more risky and that they are more vulnerable to various sorts of dangers involved in the migration process. In their research on the Senegalese River Valley, Bâ and Bredeloup (1997) document families’ reticence to allow women to travel abroad, even in order to join their husbands. This general discourse on female vulnerability serves to control and constrain women’s mobility. Research has shown that where migration is considered fraught with higher risks, as is the case with international migration compared to internal mobility, networks of assistance become more salient since they serve to diminish the uncertainty associated with migrating (Davis, Stecklov and Winters 2002). We can thus similarly expect that having an established network of migrants, knowledgeable about the perils of the trip, is more important for women than for men. Indeed, several studies in the Mexican or the Thai contexts have found that networks have a stronger impact on women’s migration propensities than on men’s (Curran and Rivero-Fuentes 2003; Kanaiaupuni 2000; Curran et al. 2005; Davis and Winters 2000)

Drawing their inspiration from Granovetter’s research on the “strength of weak ties” (1973), researchers on migration have recently tried to evaluate whether it is strong ties (between close family members) or weak ties (between more extended family members, friends or acquaintances) that are more effective in facilitating international migration<sup>8</sup>. On the one hand, relationships between close family members are characterized by higher degrees of trust, stronger norms of reciprocity and are expected to convey more reliable information. On the other hand, weak ties, connecting people belonging to different social circles, may give access to greater amounts and a wider array of information, potentially opening up a larger range of opportunities at destination. Empirical evidence has not been entirely conclusive in this respect, with some studies finding that ties among household members are more instrumental in facilitating migration (Cerrutti and Massey 2001; Kanaiaupuni 2000;

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<sup>7</sup> Using either the data from the Mexican Migration Project, collected by Douglass Massey and his colleagues, or the *ejido* dataset (Cord et al, 1998)

<sup>8</sup> Measures of migrant networks do not include the intensity of the tie, thus the correspondence with Granovetter’s distinction is only partial. Usually close family ties are considered to be strong ties, whereas community members are considered as “weak” ties.

Espinoza and Massey 1998), while others have found no difference between close family and community ties (Davis and Winters 2000; Garip 2008). A reason potentially accounting for these conflicting results is that some of the studies have not considered the gender of the potential migrant and assumed the effects of migrant networks on individual probabilities of migration to be the same for men and women.

Given the perception that female migration is riskier than men's, one can expect family migrant networks to be especially crucial in their migration, while both type of links may be equally useful for men. As Lindstrom (1997) argues, close family members have a "shield and control function" that is important in women's migration, but not in men's. Close relatives can be trusted more than friends or extended kin to protect the woman and to provide her reliable information and the necessary support. Furthermore, they are also more likely to accept such a responsibility, which may easily become a considerable burden in the context of migration (Hondagneu-Sotelo 1994). Some of the previous research in the Mexican and Thai contexts goes in this direction (Lindstrom 1997; Curran and Rivero-Fuentes 2003; Curran and Saguy 2001, Curran et al. 2005). To summarize, we expect networks to have a larger role in female migration, furthermore we expect women to rely more on their close family networks than on extended kin and friends.

### **2.2.2 The gender composition of the network**

The gender of the prior migrant may also affect the extent to which he or she influences the decision and ability to migrate of a candidate to migration. First, given that labor markets at destination are often gender-segregated, it is mostly prior migrants of the same gender who can provide the most relevant information and contacts. This is what several researchers have found concerning Salvadoran (Menjivar 1995), Mexican (Hondagneu-Sotelo 1994), and Guatemalan (Hagan 1998) migrants in the United States. This implies that networks work best along gender lines. Women would be more likely to be influenced in their destination choices by other women from their networks as they can count on them to integrate in an employment niche, such as the domestic sector (Kanaiaupuni 2000, Davis and Winters 2000), or to obtain reliable information about migration opportunities (Curran and Rivero-Fuentes 2003, Curran et al. 2005). The same can be said about men.

Second, research has shown that access to female migrant networks can be crucial for prospective female migrants in order to overcome not only the economic but also the social barriers to migration. While men's migration is generally encouraged and they are able to rely on their relatives to migrate, families may oppose women's migration projects. In this case, women may turn to their female network for help with migrating, thus circumventing the patriarchal authority (Lindstrom 1997, Curran and Rivero-Fuentes 2003). Such findings are also reported by Hondagneu-Sotelo (1994) in her research on Mexican migration to the U.S. where she shows how both single and married women manage to migrate, sometimes against their family's will, with the help of other female relatives or friends abroad.

Finally, the resources that previous men and women migrants make available to new candidates to migration are further shaped by the historical patterns of migration from a specific context. Curran and Rivero-Fuentes (2003) show that female networks are more

important in internal migration in Mexico, given their well-developed presence in these streams, whereas male networks matter more in international migration, reflecting the larger and more extensive history of male migration to the United States.

### **2.2.3 “Culture of migration” versus effective support**

Furthermore, networks could influence men’s and women’s migration through different channels. In a different research context, that of Moroccan migration towards Europe, Heering et al. (2004) introduce the concept of “culture of migration” to explain individuals’ intentions of migration. According to the authors, a culture of migration develops in a region as migration networks grow, and is measured through the level of historical networks at a regional level. They find that while male intentions of migration are high in regions with an important culture of migration, no such correlation exists with respect to female migration intentions; the latter are only influenced by the presence of current family networks abroad. Heering et al.’s arguments apply to migration intentions, which are only approximate determinants of migration behavior; however their findings could point to different mechanisms of network influence in male and female migration. They suggest that networks influence women’s migration to the extent to which they are capable of offering them an effective support at destination. On the other hand, prior migrants would exert a more diffuse and diversified influence on men, by providing information or normative models<sup>9</sup> to follow.

Prior migrants’ capacity to offer direct assistance with migration will mostly depend on the level of resources they have, whereas information and demonstrative influences will be less affected by it. If networks’ effective support is more important in female migration, we should observe a higher reliance of women on those networks that have access to a greater amount of resources. Previous studies in the literature assume that length of migration experience is a good proxy for the level of resources (Garip 2008) and find a positive relationship between migration chances and the experience of prior migrants (Massey and Zenteno, 1999; Delechat 2001; Garip 2008). However, to our knowledge no work so far has examined whether the level of resources of the network differently affects male and female migration. Furthermore, Garip (2008) includes a measure of the geographical dispersion of the network in her models of internal migration in Thailand, arguing that the more dispersed network members are between several destinations, the higher the diversity of resources, but finds no significant relationship with migration chances. We could, however, argue that the more a network is concentrated in a single location, the higher the level of resources available to the potential migrant who considers that location. In this case, we may expect a positive relationship between networks’ geographical concentration and women’s migration chances.

The review of the literature points out the gender-based character of migrant social networks. Given the findings of several studies, we expect men and women to be differently influenced by networks and to mobilize different types of networks for migrating. We further expect the role played by networks to vary by their gender composition, as men and women prior migrants give access to different resources. However, the literature investigating these

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<sup>9</sup> Mahler (1999) calls this “demonstrative effects”. Other researchers (Monsutti 2007) show how migration has become a rite of passage in defining masculinity in some societies.

issues is based on only a few contexts, all different from ours in many respects. This raises the important question of the relevance of a gender-based analysis of migrant networks in the contexts of Senegal and DR Congo.

### ***3. A COMPARATIVE RESEARCH DESIGN: INVESTIGATING THE ROLE OF THE CONTEXT***

As mentioned above, most of the work on gender, migration and networks has focused on two contexts – Thailand and Mexico - which differ in their economy and cultural norms. The former is characterized by a relatively high status of women, few constraints on their mobility and by economic growth (Curran, Garip and others 2001, 2005, 2008). Mexico, on the other hand, is undergoing an economic crisis and, despite the ongoing transformations of gender relations and a progressive feminization of migration, mobility remains locked up in traditionally patriarchal structures (Davis and Winters 2000). We might then expect that social capital functions differently in Thai than in Mexican migration. Surprisingly, many findings are similar. This could be due to the fact that research in Thailand is about internal migration, whereas in Mexico most research on this topic investigates international mobility. Also, the surveys on which this work is based differ in their methodologies and sampled populations.

To our knowledge, no research has investigated the interplay between gender and social capital in a directly comparative manner. Moreover, there has been no quantitative research on this topic in the Sub-Saharan African context. This paper attempts to fill these gaps by comparing two migration flows using identical data, in order to investigate whether and how the gender differences in the role of networks are shaped by the context. Our two case studies, the DR Congo and Senegal, differ in their economic, political and cultural contexts as well as in their prevailing gender norms, which have shaped different migration histories.

#### **3.1 Congolese migrations more recent and less differentiated in terms of gender than the Senegalese**

While both countries gained their independence in 1960, Senegal has followed a trajectory of political stability whereas the DR Congo has known violent political conflicts. Though richer in natural resources, DR Congo is facing a poorer economic situation than Senegal and is ranked as one of the poorest nations of the world.

Senegalese international migration has a long and well-documented history, going back to the First World War when many Senegalese served in France as infantrymen (Robin, Lalou and Ndiaye 2000). The flows intensified after the Independence, particularly towards some African countries experiencing an economic boom (such as the Ivory Coast and Ghana) and to France, where the expanding automobile industry was in need of workers (Pison et al. 1997; Robin 1996). From the 1980s onwards, the Senegalese turned towards new destinations in the North, such as Italy, Spain or the United States (Ma Mung 1996). Religious networks, and in particular the Mouride brotherhood<sup>10</sup>, play an increasing role in these new migration dynamics, explaining to a certain extent the diversification of destinations (Bava 2003).

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<sup>10</sup> There are several Muslim brotherhoods in Senegal; the largest ones are the Mouride and the Tijaniyyah.



Initially most migrants were recruited from villages in the Senegal River Valley, but the later period saw a diversification of departure regions, with cities in general, and Dakar in particular, assuming an increasingly key role.

The Congolese migrations are more recent and less documented than the Senegalese flows. They are to a large extent directed to neighbouring countries, such as Angola and Congo Brazzaville for migrants originating from Western DR Congo, where Kinshasa is located, while Zambia is a common destination for migrants coming from Katanga in South-Eastern DR Congo. Congolese migration to Europe started in the early 1960s, after DR Congo gained its independence from Belgium. At that time, it primarily consisted of elites - students or labour migrants - sent by companies for training in Belgium (Kagne and Martiniello 2001). The deteriorating economic situation and the political turmoil that resurfaced in the 1990s have intensified the migration flows. Towards Europe, these were increasingly composed of asylum-seekers (Schoumaker, Vause and Mangalu 2009). Over the past 30 years the profiles of Congolese migrants and their destinations have also progressively diversified. France became increasingly popular while, more recently, the United Kingdom and Germany have attracted a sizeable number.

Despite a more recent migration history, compared to men, Congolese women migrate more than their Senegalese counterparts, especially towards Western countries. Based on the only data allowing a direct comparison between Senegal and Congo<sup>11</sup>, there is no gender difference in the probability to migrate to a Western country for the Congolese, whereas Senegalese women are 40% less likely to migrate to Western countries than their male counterparts. Both Congolese and Senegalese women are however two times less likely than men to migrate to another African country (Flahaux, Schoumaker and Beauchemin 2010). Perhaps to a greater extent than in DR Congo, Senegalese women's migration tends to be stigmatized and opposed by the family and the society. Based on an in-depth qualitative study in the Senegalese River Valley, Ba (1995) finds that the international migration of unaccompanied women is stigmatized and often associated with prostitution. Those who undertake it have to reconcile their desire to make a living with the risk of challenging the social order and being marginalized.

### **3.2 Senegalese women, less autonomous and economically active than the Congolese**

These differences in migration propensities may be related to differences in gender relations between the two countries. In DR Congo as in Senegal, women are traditionally subordinated to male authority. In both countries, the positions of social and economic responsibility are undeniably falling on the men (Pilon and Vignikin 1996). Being less educated than men, women are also less present on the labour market where they occupy more precarious jobs. However, the severe crisis that DR Congo has been experiencing in recent decades has been operating changes in these social relations. As unemployment rose among men, women found themselves forced to take over their husbands' responsibilities, to exit the domestic sphere and take on all sorts of small jobs. The crisis has thus weakened the men's social position and

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<sup>11</sup> Household data recently collected in Senegal and DR Congo within the framework of the MAFE (Migration between Africa and Europe) project; this data will be described in detail in the following section

has forced them to accept the economic participation of their spouses, who have gained considerably in social status and decision-making power within the family (Mianda 1996; Bouchard 2003).

In Senegal, as elsewhere in Sub Saharan Africa, persistent economic hardships have similarly increased women's role in household survival strategies, but the crisis has not been as severe as in Congo, and women's economic participation does not have the same social meaning. Using biographic data collected in Dakar in 2006, Adjamagbo et al (2006:13) find that the ideal model of marriage described by both men and women envisages the man as the sole provider of the material and financial comfort of the family and excludes women from any work obligation. If a woman does happen to work, the revenues she draws from her activity are often used for her own consumption – in clothes or finery – as it is hardly conceivable for a woman to provide for the family and to challenge thus the husband's economic role. The practice of polygamy that is frequent in Senegal, a Muslim society, may further reinforce these norms.

A comparison of the labor market situation between the two countries based on recent Demographic and Health Surveys<sup>12</sup> supports these qualitative findings. In Congo, economic activity rates among men and women are almost identical: 64 % of women versus 63,5% of men are working. In Senegal, only 38% of the women were working at the moment of the survey, compared to 66% of the men. Somewhat surprisingly, in both Dakar and Kinshasa the overall percentages are lower, but we only find a considerable gender difference<sup>13</sup> in Dakar.

To summarize, traditional views about gender roles appear to preserve a stronger hold in Senegal than in DR Congo and represent a veritable obstacle to Senegalese women's economic participation. While we are not arguing that Congolese women are fully emancipated or that DR Congo has achieved gender equality, research from the two contexts seems to suggest that Congolese women are subjected to lower social control than their Senegalese counterparts and enjoy a larger autonomy manifested in higher labour market participation and an increased propensity to migrate.

### **3.3 Research questions and hypotheses**

Based on the review of the relevant theoretical and empirical literature and given the specificities of the Congolese and Senegalese contexts, our research aims to answer four sets of questions, which we further break down into eight hypotheses.

**1. We investigate whether the importance of networks varies according to the gender of the potential migrant**, as most previous research has shown. Our *first hypothesis* is that having a migrant network has a greater effect on women's migration chances than on men's.

**2. Moreover, we seek to establish whether men and women mobilize different types of networks in order to migrate.** According to our *second hypothesis*, we expect that close

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<sup>12</sup> The Demographic and Health Surveys are nationally representative surveys on health and population conducted in developing countries within the Measure DHS international project. We used here the most recent ones in the Democratic Republic of Congo (2007) and in Senegal (2006).

<sup>13</sup> 45 % of women and 65% of men were working at the time of the survey.

family ties are more important than distant ties (friends/extended family) in women's migration, while they are equally influential in men's. Previous literature is more ambiguous as to how gender composition matters. On the one hand, as discussed, there is the expectation that migrant social capital works along gender lines, since, in a gender segregated labour market, same-sex migrants are better able to provide job-relevant information and contacts. On the other hand, and sometimes going in the opposite direction, research showed that the length of establishment of gendered networks at destination is also important since it affects the level of resources the specific networks can command. Given the longer history of migration of Senegalese men, our *third hypothesis* expects Senegalese male networks to be influential for both sexes, but female networks to only be useful in women's migration. Since Congolese women are more present in the migration flows than their Senegalese counterparts, we expect them to benefit less from ties to previous male migrants and more from those to women.

**3. The paper also investigates whether networks influence men's and women's migration through different channels.** Following Heering et al. (2004), we expect networks to primarily be a source of effective support for women (taking in charge their trip, accompanying and hosting them at destination), while we expect that for men networks also serve as information and motivation sources. We assume, thus, that female migrants rely more on those network members that command more resources and who are therefore more capable of offering them the expected support. While we don't have a direct measure of available resources for network members, we construct different proxies in order to answer this question. First, we expect that migrants present abroad at the moment of the respondent's migration will be better able to offer the needed support and host the potential migrant than those network members who returned to the origin country. On the other hand, we expect returnees to be better able to hand over information since physically in contact with the potential migrant. Thus, our *fourth hypothesis* is that current migrants are more influential than returnees in women's migration, but are equally influential in men's.

Next, we consider the migration experience cumulated by the network members as a proxy for the amount of resources they can convey. A *fifth hypothesis* is that women rely more on long term migrants, who have been abroad for longer times and had thus the opportunity to accumulate more resources, while we expect recent migrants to be helpful in male migration. *Sixth*, we test the impact of the size of the network, starting from the assumption that larger networks make available a higher level of resources to the candidate to migration. We expect that larger networks are significantly more influential than smaller ones for women, while we expect the size of networks to be less relevant for men.

We also study the effect of the geographical dispersion of the network members. We argue that the more concentrated the network is in a particular destination, the larger the amount of support and resources it is able to provide to the newly arrived migrant, which we expect to be especially important in women's migration (our *seventh hypothesis*). On the other hand, the more dispersed the network, the more diverse may be the information about possible destinations, an aspect which we expect to weigh more in men's migration decision.

**4. Finally, the paper examines whether and how the interplay between gender and networks varies across contexts**, as these are characterized by different norms regarding gender and by different migration histories. Given the lower autonomy of women and the more male-dominated nature of the migration flows in Senegal, we expect gender differentials in the influence of migrant networks to be more accentuated in the case of Senegal than in that of DR Congo (our *eighth hypothesis*).

## **4. DATA AND METHODS**

### **4.1 The MAFE data**

The data for this study come from the Migration between Africa and Europe (MAFE) project<sup>14</sup>, a recent survey on sub-Saharan international migration. Drawing its inspiration from the Mexican Migration Project<sup>15</sup>, the MAFE survey aims to address the widely-recognized paucity of quantitative data on African migrations (Lucas 2006). The project collected data both at origin (among non-migrants and return migrants) and at destination (among migrants) in order to offer a more accurate picture of the migration experience. Surveys were carried out in three African countries: Senegal (2008), DR Congo (2007 and 2009)<sup>16</sup> and Ghana (2009); additionally, migrants from these respective countries were interviewed in their main European destinations: France, Italy and Spain (2008; Senegalese migrants); Belgium and the UK (2009; Congolese migrants); the UK and the Netherlands (2009; Ghanaian migrants). Through a biographic questionnaire, retrospective information was collected on various aspects of the respondent's life: family formation, education and employment, housing, assets, their own migration trajectory as well as those of their personal network, etc. The information was generally collected on a yearly basis.

In the countries of origin, the sample was limited to the greater areas of the capital cities<sup>17</sup>. A three-stage probabilistic sampling design was used, oversampling households with migration experience. The total sample in the Dakar area consists of 1,143 households out of which 1,067 individuals were interviewed. The Congolese sample at origin consists of 945 households out of which 976 individuals were interviewed. In addition, 603 Senegalese migrants as well as 429 Congolese migrants were interviewed in Europe<sup>18</sup>. While the origin country samples are representative of the population living in the capital at the moment of the survey, the migrant sample is not random<sup>19</sup>, except for the Spanish sample. A mix of various sampling strategies was used: intercept points, random walking, snowballing, and contacts obtained through associations (for a more detailed discussion on the survey methods see

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<sup>14</sup> For further information see the project website: [www.mafeproject.com](http://www.mafeproject.com)

<sup>15</sup> Most studies on Mexican migration to the United States are based on the Mexican Migration Project, a major longitudinal dataset which innovated the method of the ethno-survey.

<sup>16</sup> The results presented in this paper take into account the Congolese data collected in 2007, since the data collected in 2009 are not yet fully available.

<sup>17</sup> Due to financial constraints, a nationally representative sample was impossible to attain. In Ghana, surveys were carried out in Accra and Kumasi

<sup>18</sup> 600 Senegalese were interviewed in France, Italy and Spain (200 in each country). The Congolese were interviewed in Belgium (279) and in the United Kingdom (150).

<sup>19</sup> While the original idea was to obtain a matched sample between the households interviewed at origin and the migrants at destination, this turned out unfeasible in practice. Thus, the migrants interviewed in Europe may come from different regions in Senegal and Congo, though in both cases the percentage of those having lived in the capital is over 75%.

Beauchemin and Gonzalez-Ferrer 2011). For the present analysis, we use the biographic survey and the total Congolese and Senegalese samples (1,405 Congolese and 1,670 Senegalese), including both migrants - current and returnees - and non-migrants.

#### **4.1.1 Measuring ego's migrant network: a substantial challenge**

One of the innovative features of the MAFE survey is the longitudinal information it collects on the respondents' migrant network. Interviewees are asked whether any of their parents, siblings, children, partners have a migration experience (either a past experience or still currently abroad). In addition, they are asked whether anyone else from their more extended family or friendship circle has also had a migration experience and to whom they might have turned (or might turn) for help with migrating. The questionnaire suggests a limit of 20 persons, though one respondent named 21 persons. The total constitutes ego's migrant network. Furthermore, the questionnaire records for each member named by the respondent his or her migration trajectory, with the years and destinations of each move. The relationship to ego, the gender, the year of acquaintance (if spouse or friend) for each member are also recorded.

This information is quite different from what most other studies of the role of networks are based on. Two measures are generally used in the literature. A "household migration network" is usually constructed based on a household questionnaire identifying members of the household with previous migration experience. The indicator is however restricted to members of the household and assumes that everyone has access to the same network, which may not always be the case. Also, only the dates of the members' first and, in some cases, last trips are recorded, which does not allow knowing their location at the moment the respondent (may) migrate. Moreover, this measure does not include family members who are not part of the household or the respondent's friends or acquaintances who are living or have lived abroad. The second common measure tries to get at the latter: the "community migration networks" are a simple count of other people who have already migrated from the community. This is often extrapolated from the sampled population (a part of the community, sometimes quite small) and thus equals the aggregate of all household migration networks. This measure assumes that social relationships actually exist between the members of the community, which may be more or less the case according to the context. Fussel and Massey (2004) have shown that in an urban setting community networks measured in this way have no influence on the individual's migration chances. Finally, both these measures are static, as they miss the inevitable variation that exists in the community and the household over time<sup>20</sup>, as well as the potentially very complex migration trajectory of the network members.

We can thus see how the MAFE data introduces a different measure of migrant networks, since the information is directly collected at an individual level. While the intensity of the relationship between ego and each of his or her network members is not recorded<sup>21</sup>, it is actual (and not supposed) relationships that the data is measuring. Also, detailed information is collected on all the moves of the members of the individual's migrant entourage, thus

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<sup>20</sup> The household networks are based on the composition of the household at the moment of the survey, but this may have been different at the moment of the respondent's migration.

<sup>21</sup> We do know however the year when ego met the respective network member, if not part of the family.

introducing a much more dynamic measure of networks. The composition and location of the network may change with time as (more) members of the respondent's family and friends migrate abroad, change their location or return to Senegal/Congo.

Though innovative, this measure is also subject to a series of limitations. While information is collected on all immediate family members with migration experience, irrespective of whether or not they are part of the respondent's household (parents, siblings, children, and partners), the question which enquires about prior migrants more remotely connected to the respondent may introduce at least two biases in this measure. First, given the way the question is formulated and the retrospective nature of the data, it is most likely that only those relationships which survived and which the individual maintained up to the time of the survey, perhaps because they were most helpful with the migration process<sup>22</sup>, will be recorded. This may lead to overestimating the effect of this type of networks on migration propensities. Furthermore, as Palloni et al (2001) argue, there is a process of selection into networks: people are not randomly developing ties between themselves, but are influenced in their choices by a series of factors which may also influence their propensity to migrate. Thus, the direction of the causality is often ambiguous when studying network effects. However, our main interest lies in investigating differences between men and women in the role played by migrant networks. There is little reason to expect these biases to vary systematically by the gender of the respondent.

## **4.2 Methods**

We start with a descriptive overview of differences between men and women in access to migrant networks and in their networks' composition (the chances of knowing someone with migration experience, the size of the migrant network, its composition in terms of gender and type of link). However, these measures are limited since they give a static view of the network: they describe respondents' networks at the time of the first migration (for migrants) or at the time of the survey (for non-migrants). We continue by exploiting the dynamic nature of our data in order to trace the timing of our respondent's moves abroad in relation to the moves of their network members. More precisely, we seek to evaluate the part, among men's and women's moves, of "independent" versus "follower" migrations, expecting women to be more dependent on their network and thus more likely to follow rather than to go first.

In a second step, we carry out discrete-time event history analysis in order to estimate the effects of different network compositions on the likelihood of first international migration among men and women from the two countries. As discussed by Allison (1982) and Yamaguchi (1991), this method divides the time into discrete intervals (calendar years) and estimates the probability of observing the event within each interval, given that it has not yet occurred. Using the respondents' detailed migration histories, we construct a time-varying dichotomous measure indicating whether a migration event occurred in the current year. In order to better study network mechanisms, we restrict our interest to first adult migrations and

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<sup>22</sup> There is a way of evaluating the magnitude of this bias. The questionnaire contains a series of questions on whether the migrant received help with taking the decision to migrate, with traveling abroad or with financing the trip from any member of his network, and in particular of his migrant network. The share of network members from whom ego actually received one of these forms of support was similar among friends or extended kin and among close family members.

thus exclude those migrations taking place before the individual turned 18<sup>23</sup>. While we also have information on subsequent migrations, we chose to only focus on the first one, as there are reasons to expect networks to play differently once the individual has accumulated personal migration experience. Hence, individuals enter the risk set at age 18 and are followed until they leave the origin country for the first time or until the survey date, whichever occurs first. We use logistic regression to estimate the hazards of first migration, and present the coefficients as odds ratios, which are interpreted as the proportional effect of a change in a given variable on the hazard odds of ever migrating.

Separate analyses are carried out by gender and by country. We test differences between the coefficients for men and women using t-test statistics in the separate models and interactions between the gender and the network variables of interest in a pooled two-sex model<sup>24</sup> for each country. For purposes of clarity, we have chosen to only present the single-sex models (by gender and by country) since differences in the effect of covariates are more easily read. We use sampling weights in both our descriptive and multi-variate analyses to take account of the sampling design and of differential non-response rates.<sup>25</sup>

#### **4.2.1 Migrant network variables**

In order to test our research hypotheses, several specifications of the migrant network are tested successively in a series of models. The variables describe different aspects of the respondent's migrant entourage, measured annually. All migrant network variables are thus time varying and are lagged by one year<sup>26</sup>, in order to ensure a chronological anteriority between the network members' migration and the respondent's potential migration. Our different network variables refer to the composition of the network currently abroad, its size (the number of people known to the respondent abroad at any time), its location (currently abroad or returned to the origin country), and its geographical concentration. For a more detailed description of all variables see Table A1 in the Appendix.

In terms of composition, several aspects are measured. First, to examine the influence of the gender composition we use two continuous variables: the number of males and the number of females currently abroad. Second, to investigate the influence of ties in terms of the relationship to ego, we distinguish the current partner, other close family members - such as the parents, siblings or children - and extended kin and friends currently abroad. The latter two variables are continuous. Finally, we also take into account the migration experience of the network members and divide them in three types: recent migrants (who have spent less than 5 years abroad), experienced (between 5 and 10 years abroad) and long term migrants (over 10 years abroad), which we introduce as continuous variables (number of recent migrants, etc).

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<sup>23</sup> In those cases where the respondent migrated as a child before migrating again after having turned 18, we consider his or her second migration as the "first adult migration".

<sup>24</sup> We estimate a model for each country in which we pool together men and women. Results available from the authors upon request

<sup>25</sup> In each sample, inflation factors are computed as the inverse of the sampling rate and are adjusted for differential non-response rates. The weights are normalized in the pooled sample.

<sup>26</sup> Similar results are reached when the variables are measured at time t or at both t and t-1 (a network member must be abroad both the year before and during the year that the event may occur).

To measure the extent to which the network is concentrated in a particular country or otherwise dispersed over several locations, we constructed a ratio dividing the maximum number of migrants in the same country to the total number of migrants in the network that were abroad at any time. This is the only variable we do not lag since the location of the network is important at the time of migration. We regroup the ratio into several categories, considering that a network is dispersed when less than half of the members are in a same destination, that it is concentrated when half or more members share the same location and is extremely concentrated when all members are in a single country. We distinguish the case of networks made up of a single person, for which we do not calculate the ratio.

#### **4.2.2 Control variables**

Besides the network variables, each model controls for a set of individual variables. Most of these are time-varying and are lagged by one year to reflect the anteriority of ego's status compared to a potential migration. Age is introduced as a continuous variable and age squared is also introduced as we expect a nonlinear relationship between this variable and migration. Since the dependent variable reflects a non-repeated event, age also captures the duration since ego becomes at risk of experiencing the event (all individuals start being at risk at 18). To account for the year of migration, we introduce period as a categorical variable (decades), with the period before 1990 as the reference value.

Human capital attainment has been shown to influence migration chances in a different way for men and women. Here, we control for education and occupational status. A time-varying count variable of the years spent in school is calculated for each individual. Taking into account the structure of the education system in the two countries, we group the values into four categories reflecting the level achieved: no education, primary level, secondary level and higher level. For the Congolese, due to the low numbers of uneducated persons, no education is combined with primary level. We further control for the occupational status held by ego the previous year and distinguish three statuses: in education (the reference category), working and unemployed or inactive<sup>27</sup>.

Two dummy variables are used to take into account the family life cycle of the individual, which we expect to have strong gendered effects on migration risks (Kaniaupuni, 2000). We control for partnership status - whether in union or not - and for having children under the age of six. We chose a broad definition of the union, without restricting it to married spouses. In models which control for the location of the partner, a variable with three categories combined these two variables: 'being alone' (reference), 'having a partner in the country of origin' or 'having a partner abroad'.

Finally, qualitative findings from the two countries have shown that religion belonging also shapes migration opportunities. In Senegal, an almost entirely Muslim country (90% of the population) the relevant distinction is between the particular Muslim brotherhood the individual identifies with. We distinguish the two main brotherhoods: the Mouride and the Tijaniyyah, but have to group the others together; we are also able to distinguish the Christian

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<sup>27</sup> Given the few cases of inactive men and unemployed women we have to group these together, though their meaning for migration may well be different.



minority. In Congo, a large number of religions coexist, but the majority of Congolese are Catholic or Protestant. For decades, a growing number of individuals also joined the evangelical Church of Christ. Others religions and people belonging to no religion are grouped in a fourth category.

### 4.2.3 Characteristics of the sample population

Table 1 in Appendix presents a quick overview of some characteristics of our sample populations. The gender distribution is similar across the two contexts, with women being slightly overrepresented. The mean age at survey is lower for the Congolese since the eligibility started at 18 years old in the country of origin sample, while in the other samples only people older than 25 were interviewed (to have long enough life histories)<sup>28</sup>. It is with respect to education that the two populations differ the most, as the Congolese are largely more educated than the Senegalese, fact confirmed by other, nationally representative, data (DHS-DRC2007, ENPS-II Senegal, 2009). The weighted data shows that a similar percentage of women in both countries have had at least one migration trip abroad (8 %), while migrations by Senegalese men are slightly more frequent than among the Congolese (around 21% against 16% for Congolese men). The mean age at the first adult migration is similar in both countries and among men and women, and is situated at around 28 years for men and 29 for women. In terms of the (un-weighted) number of first adult migration events, we have slightly fewer cases for women than for men in both countries, and for the Congolese compared to the Senegalese. Due to our sampling design, a large share of these has a European destination. However, once we take into account the sampling design using weights, the share of African migrations is increased, especially for the Congolese.<sup>29</sup>

## 5. FINDINGS

### 5.1 Descriptive statistics on men's and women's migrant networks

Given the dynamic nature of our network measure, a descriptive static outlook is clearly limited. However, it can give us a first idea of whether there are significant differences in men's and women's access to networks and in their composition. Since the dependent variable of our models is the *first migration*, the following descriptive statistics are calculated at the time of this first migration, for those who undertook one, or at the censoring date, which is the time of the survey, for the non-migrants).<sup>30</sup>

Table 2 shows the proportion of men and women from Congo and Senegal who have a migrant network<sup>31</sup> as well as the average size of their network and further breaks these down by educational level and migrant status. The descriptive results reveal significant differences both between genders and between countries. At first sight, both the percentage and the mean size of migrant networks are remarkably similar between men and women from both countries. A majority of individuals knows at least one person with migration experience, with the

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<sup>28</sup> Models were estimated with and without the under-25 years old individuals interviewed in Congo, reaching the same results. In order to maximize our number of cases, we have chosen to keep them in our analysis.

<sup>29</sup> The weighted share of African migrations among all first migration represents 72% for Congolese men, 65% for Congolese women, and 33% for both Senegalese men and women

<sup>30</sup> This date varies between surveys since there were collected between 2007 and 2009.

<sup>31</sup> For this first rough indicator, the partner is included in the measure if s/he went abroad before ego's event or censorship. All results are weighted.

Senegalese being slightly better connected than the Congolese (respectively 68% and 66% among the Senegalese against 60% and 56% among the Congolese).

**Table 2: Network characteristics by ego's gender, education level, and migration status<sup>32</sup>**

	Congo (N=1415)		Senegal (N=1670)	
	Males % and (mean size)	Females % and (mean size)	Males % and (mean size)	Females % and (mean size)
<b>Total</b>	60,4 % (1,7)	55,8 % (1,6) <i>n.s</i>	67,8 % (1,6)	66,3 % (1,4) <i>n.s</i>
<b>Migrant status</b>				
Non migrants	61,3 % (1,8)	54,5 % (1,5) <i>n.s</i>	70,1 % (1,7)	63,3 % (1,3) <i>n.s</i>
Migrants	56,3 % (1,4)	68,4 % (1,9) <i>n.s</i>	62,5 % (1,4)	87,0 % (2,2) ***
<b>Education</b>				
None	40,8 % (1,1)	42,4 % (0,9) <i>n.s</i>	58,0 % (1,1)	51,8 % (1,1) <i>n.s</i>
Primary			64,6 % (1,4)	71,1 % (1,4) <i>n.s</i>
Secondary	58,9 % (1,6)	55,7 % (1,6) <i>n.s</i>	72,1 % (1,9)	80,0 % (1,9) <i>n.s</i>
Higher	69,1 % (2,4)	81,3 % (2,3) <i>n.s</i>	80,0 % (2,4)	81,8 % (1,8) <i>n.s</i>

In both countries, men and women do not differ significantly in their likelihood of having a migrant entourage or in the size of their migrant networks. However, significant gender differences are revealed once we break down by migrant status. While among non-migrants in both countries women less often have access to migrant networks and their networks are smaller on average, even though not significantly so, the opposite pattern is found among migrants. In both countries, women with migration experience are more likely to have a migrant kin or friend than migrant men, and the average size of their migrant network is larger. Even though this pattern goes in the same direction in both countries, gender differences are more pronounced and only significant in Senegal. Next, we compared men and women within each educational level and found no significant difference in their access to and size of networks. However, the table reveals a positive association between the education level and the possession of a migrant network in both countries, though with a steeper gradient in Congo. The more educated are more likely to know someone abroad, but also to have a wider network.

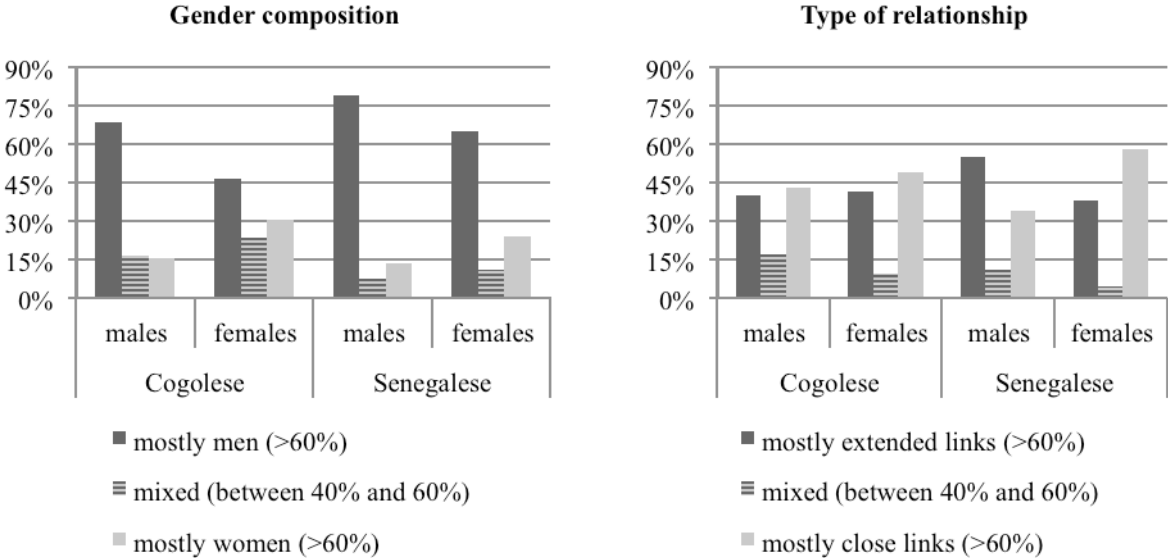
We pursue the investigation by looking in more detail at the composition of men's and women's networks by gender and by type of relationship (Figure 1). Looking at the percentage of women among all the network members of an individual (at the time of the first migration/survey)<sup>33</sup>, we find that in Congo as in Senegal, both men and women tend to have networks mostly made of prior *male* migrants, though women to a lesser extent than men. Male networks are especially prevalent in Senegal, where almost 80% of men have male-

<sup>32</sup> Significance levels for the gender differences in the proportion of people with migrant networks are shown in the table (chi square tests).

<sup>33</sup> If ego has a migrant network of 10 persons and 3 of them are women, he will have a network of 30% percent women. We grouped the variable in 3 categories: mostly women (between 100% and 60%), mixed (59% to 41%), and mostly men (40%-0%).

dominated networks as well as 65% of women (against respectively 68% and 45% for Congolese men and women). Women are thus more present in Congolese respondents' networks than in those of the Senegalese, probably due to higher rates of female migration from Congo.

**Figure 1: Type of relationship and gender composition of men's and women's networks**



Second, we compare men's and women's networks according to the percentage of close family members they have<sup>34</sup>. In Congo, men's and women's networks closely resemble each other in this respect. Around 40% of the Congolese have networks that are mostly composed of close family members while a similar proportion have networks mostly composed of extended family and friends, with the rest having a mixed balance of both. Like the Congolese, only a small share of Senegalese have mixed networks, but in contrast to the former, gender differences are significant and more pronounced. More than half of the women have networks that are mostly composed of close family, against only 34% of the men. On the other hand, women are less likely to have networks mostly composed of extended family members and friends, which are the most frequent among men.

**5.2 Timing of migration: who follows whom?**

A first way of apprehending the role of networks in men's and women's migration is to establish the timing of their migration in relation to prior migrants related to them. Following Cerrutti and Massey (2001), we consider that those migrating to a destination where no one from their migrant network is present are moving more independently but also perhaps with higher risks and uncertainties, compared to those who migrate to a country where members of their network are already present. While Cerrutti and Massey only study individuals' migration in relation to their parents or partners, we are also interested in the prior presence abroad of other close family members as well as of extended kin or friends.

<sup>34</sup> Similar calculations as for the gender composition: number of close family members divided to the total number of network members.

In accordance with our first hypothesis, we expect a larger share of female migrations to take place to a destination where they have a network. We further distinguish between the cases where the network members were already present at destination and the case where they arrived at the same time as ego, for having, in most cases, travelled together<sup>35</sup>. We introduce this distinction since we expect the network members to fulfil more often the function of travel companions for women than for men. Figure 2 shows that, as expected, first migrations of women in both countries are significantly more likely to be of a “follower” nature: within both countries, almost twice as many women than men migrate to a destination where someone of their network was already present. They are also twice as likely to be accompanied in their trip by someone, revealing thus the importance of this function of networks in female migration. However, it should also be noted that the share of follower migration – where someone known was already present at destination - is larger among the Senegalese, and especially large among the Senegalese women (almost 7 Senegalese women out of ten joined someone at destination, compared to 4 out of ten among the Congolese women). This is probably due, on the one hand, to the longer history of Senegalese international migration and thus to the more established nature of Senegalese migrant networks, especially towards European destinations which make up a large part of our sample’s first migration. On the other hand, it reveals the less autonomous nature of Senegalese women’s migration, compared to their male counterparts but also to the Congolese women.

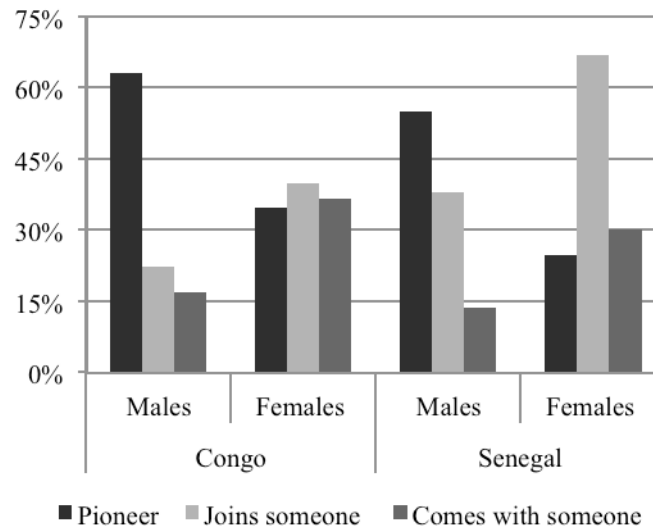
For a great majority of men in both countries, their first adult migration had as destination a country where no member of their network was present (63% and 55% respectively). We call such a move “pioneer” migration, though the term should be understood only in relation to the individual’s entourage and the particular destination. While women are substantially less likely<sup>36</sup> to migrate as pioneers it is interesting to note that a significant minority, larger in Congo (35% compared to 25% in Senegal), migrate even in the absence of a network at destination.

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<sup>35</sup> We compared this information with a question asking respondents whether they were accompanied by someone when they travelled abroad and we reached a very similar result.

<sup>36</sup> Chi square tests, differences significant at  $p < 0.001$

**Figure 2: Pioneer versus follower migrations**



*Legend: Pioneer: no one present at destination*

*Joins someone: someone has been present at destination for at least a year when ego arrives*

*Comes with someone: ego travels together with (at least) a member of his or her network*

*The latter two options are not mutually exclusive, thus the total can be more than 100%*

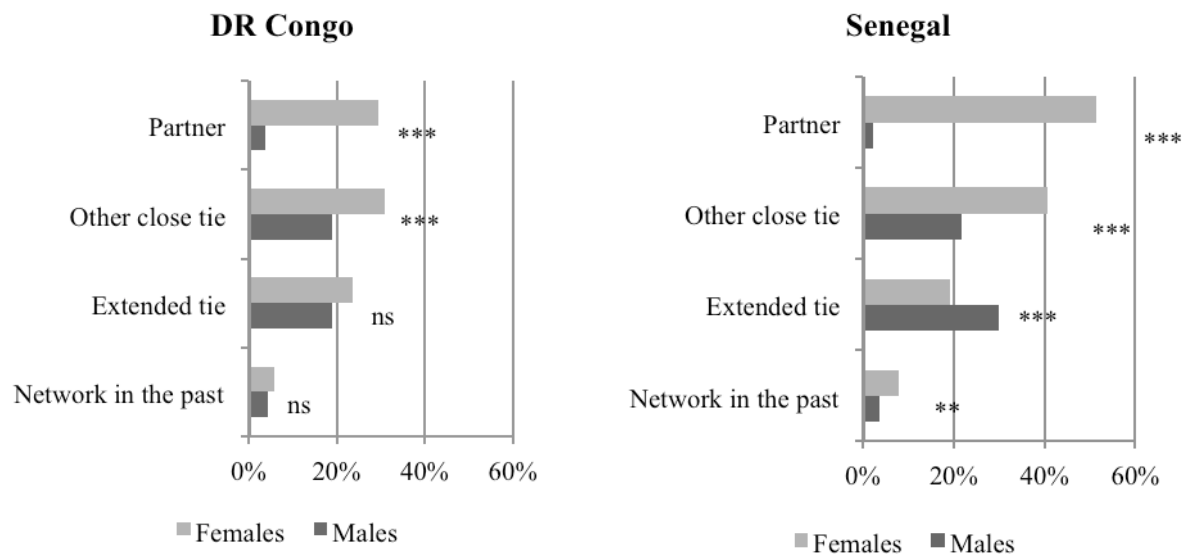
Figure 3 further distinguishes between the different types of networks present at destination when ego arrives<sup>37</sup>. Researchers have, for a long time, mainly portrayed African women as passive, associational migrants, who migrate to reunite with their spouses. More recently, there has been a surging interest in migrant women who do not fit into this category - students, tradeswomen – and more and more studies argue that there has been an increase in autonomous female migration from sub-Saharan countries (Coulibaly-Tandian 2007; Tall and Tandian 2010). The paucity of large-scale surveys in both Senegal and DR Congo – and in the latter in particular – means that there is little quantitative evidence to support such claims. Our data confirms that a large share of female migrations involves women joining their partner abroad. But there is a substantial difference between the two countries: half of Senegalese women’s migrations take place to a destination where their partner is located, whereas this represents only one third of migrations by Congolese women. In contrast, very few men in either country migrate after or at the same time as their partner.

Figure 3 also brings evidence in support of our second hypothesis, concerning the higher reliance of women on other close family networks. In both countries there are significant differences between men and women in both countries as to the percentage joining a close family member (excluding the partner) abroad: compared to men, women are more likely to join or come with a close family member with differences more pronounced in Senegal. Conversely, the migration of Senegalese women seems less connected to the migration of extended family or friends than the migration of their male counterparts, whereas

<sup>37</sup> For clarity purposes Figure 3 groups network members already present when ego arrives and members who arrive in the same time as ego. Moreover, the different categories are not exclusive, meaning ego may have both family networks and extended kin at destination, in which case he or she will appear under both categories.

no such difference appears between Congolese men and women. Finally, a small proportion of Congolese and Senegalese first migrated to a country where someone in their entourage had already migrated, but was not there at the time of ego's arrival. Slightly more women are concerned by that than are men, but this difference is significant only for the Senegalese.

**Figure 3: Type of ties at destination**



Legend for gender differences : \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , ns not significant

To sum up, we see different patterns of migration in relation to their network among men and women, but also differences between Congolese and Senegalese women. Women in both countries are much more likely than men to migrate where they have connections, in other words to follow someone rather than to go first. The presence of a network at destination appears thus to be more important for women than for men, which supports our first hypothesis. However, it is worth noting that Senegalese and Congolese women do not follow the same persons: while for the Senegalese the reunification with the partner is the predominant pattern, Congolese women's migrations are equally directed towards destinations where they have friends or family members and towards places where their partner is situated. These results point to a notable difference between the two countries in the role of networks in female mobility.

### 5.3 Multivariate event-history analysis of male and female migration from Congo and Senegal

While the descriptive patterns presented above reveal substantial gender and country differences, they do not control for personal characteristics such as age, education, partnership and occupational status, which may account for these differences since they are likely to be associated both with access to networks and with the likelihood of migration. Moreover, descriptive analyses do not allow us to estimate the relative importance of different types of network ties on the probability of migrating. Therefore, to further investigate the role networks play in men and women's migration, we estimate the log odds of a first migration in

any given year in a series of multivariate discrete-time logistic models. All coefficients are presented as odds-ratios.

### **5.3.1 The effect of individual characteristics**

We start by briefly discussing the effects of the control variables (Table 3). Not surprisingly, for both men and women, migration rates increase with age up to a turning point after which they start decreasing. The relationship is not significant for Congolese men. As regards the year of migration, no significant trend can be distinguished for the Congolese migrations<sup>38</sup>. In contrast, for both Senegalese men and women the chances of migration appear lower in more recent years. However, we have also run a model excluding the network dummy (not shown here), in which coefficients for the later periods are significantly higher for both migration flows. Thus, given the extent of access to networks in recent years, one would have expected a higher level of migration than it was actually recorded. Further analysis, for which we have no space here, is needed on the interaction between time and the role of networks.

As found in the case of Mexican migration to the US (Kanaiaupuni 2000; Feliciano 2008) education is especially important for women from both countries. In a context of low rates of female education, holding any degree, even a primary level one, strongly increases Senegalese women's migration chances. Among the Congolese women, who are more educated than the Senegalese, only a higher-level diploma significantly increases their migration propensities. In Congo, this is also the case for men, while in Senegal education has no positive effect on male migration. As regards the impact of occupational status held by the individual the previous year, gender differences exceed country differences. For women in both countries, being a student seems to increase chances to migrate, though the relationship is not significant. For men, we observe the opposite trend, but coefficients are only significant among the Congolese.

Important differences in the determinants of male and female migrations are also apparent with respect to life cycle factors. Unlike findings for Mexican and Paraguayan migration by Kanaiaupuni (2000) and Cerutti and Gaudio (2010), Congolese and Senegalese single women are not more likely to migrate than women who are in couple. On the contrary, among the Senegalese, the latter seem to have more chances to migrate, though the effect is only significant when not controlling for the migrant network. The relationship is not significant for men. Having young children is a strong deterrent for female migration (especially among the Senegalese), while it is encouraging that of men (especially for Congolese). As in other parts of the world, the role of women as caregivers and of men as economic providers means that the arrival of children in the family has opposite effects on their migration chances (Massey et al. 1987).

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<sup>38</sup> Even if coefficients are not significant, there is some evidence of an increase in female migration in later periods

**Table 3: Effects of control variables on the odds of first migration (discrete-time logistic models, coefficients presented as odds ratios)**

Variable	Category	Congo		Senegal	
		Men OR	Women OR	Men OR	Women OR
<b>Age</b>	Age (continuous)	0.96	1.41*	1.40***	1.36**
	Age squared	1.00	0.99*	0.99**	0.99***
<b>Period (decades)</b>	<i>Before 1990 (ref)</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
	1990's	0.84	1.78	0.87	0.81
	2000's	0.86	1.85	0.48***	0.43***
<b>Education</b>	<i>No education (ref)</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
	Primary level			0.60**	3.24***
	Secondary level	1.64	0.73	1.09	3.86***
	Tertiary level	2.07*	3.43***	1.15	3.35***
<b>Occupational status (t-1)</b>	<i>Student (ref)</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
	Has a job	2.55**	0.48	1.32	0.50
	Unemployed/inactive	3.51***	0.97	1.48	0.59
<b>Family status (t-1)</b>	<i>Single (ref)</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
	In partnership	0.78	1.10	1.15	1.53
	<i>No children under 6</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
<b>Religious Group</b>	Has children under 6	1.55*	0.54	0.91	0.44**
	<i>Catholic (ref)</i>	<i>ref</i>	<i>ref</i>		
	For Congolese				
	Protestant	2.78***	0.63		
For Senegalese	Eglise réveil <sup>39</sup>	1.50	1.12		
	Other	1.05	0.63		
	<i>Mouride (ref)</i>			<i>Ref</i>	<i>ref</i>
	Tidjane			0.70**	0.91
	Christian			0.57	0.89
<b>Migrant network</b>	Other Muslim			1.02	1.92**
	<i>No current MN (ref)</i>	<i>ref</i>	<i>ref</i>	<i>Ref</i>	<i>ref</i>
	Has current MN	1.62**	3.96***	2.68***	6.81***
<i>Person-years</i>		9 506	12 638	11 569	15 622
<i>Number of events</i>		306	239	448	317

Survey design and weights are used in the regression

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Religious belonging shapes the patterns of Congolese out-migration, as Protestants and also, though not significantly, members of the evangelical Church of Christ have higher rates of migration than Catholics. In Senegal, confirming previous qualitative findings, Mouride men appear to be migrating significantly more than the members of the other large Muslim brotherhood, the Tidjane. No clear religious pattern is apparent among Congolese women, while the Senegalese belonging to other Muslim brotherhoods have more chances of migrating than Mouride women.

<sup>39</sup> Evangelical Church of Christ



In this first model presented in Table 3 we introduce a simple dichotomous measure of migrant networks: whether or not the individual has family or friends located abroad the previous year<sup>40</sup>. As expected, the influence of the network among all populations is positive and significant, indicating that knowing someone abroad increases the hazard of migration. Furthermore, the substantially larger coefficients for women confirm our first hypothesis of a more important role of migrant networks in female than in male migration<sup>41</sup>. While gender differences are significant in both countries, they seem more pronounced in Senegal, supporting our hypothesis regarding the role of the origin context.

### **5.3.2 Network determinants of male and female migrations from Congo and Senegal**

In order to further investigate the role of different network compositions and test our various hypotheses, we have estimated the same model several times, changing only the specification of the network variables (Table 4).

Given the importance of the reunification channel for women in both countries as noted from the descriptive section, we first seek to separate the effect of having one's partner abroad from that of other network ties. Most previous studies investigating the gender-based character of networks do not analyse separately the role of the partner, which could lead to overestimating the role of networks for women. Indeed, our results show that it is the partner who, within the migrant network, is most influential in women's migration (Model 1, Table 4). Compared to being single, having a partner abroad substantially increases chances of migration for both Congolese and Senegalese women, while, among the Senegalese, women whose partner is in the origin country are the least likely to leave. Though there are only a few cases of men following their partners abroad, odds of migrating are significantly higher for Senegalese men in this situation as almost all of them migrate. Controlling for the presence abroad of the partner substantially reduces the size of the network coefficients for women, which are no longer significantly different from those for men in either country. Thus, the non-partner network continues to increase the chances of migration for both men and women but has an equivalent effect for both. In light of this last result, the next models all control for the presence of the partner abroad, and the coefficient remains as large and significant across the models. In addition, if one or more – in the case of polygamous men – partners are abroad, they are excluded from all the network variables (with the exception of the geographical concentration measure).

The next two models investigate whether men and women rely on different types of networks in their migration. Model 2 in Table 5 disaggregates networks by the type of relationship between their members and ego. The number of close family members and the number of extended family members or friends are the two variables measuring this composition. The findings support our second hypothesis, predicting a larger role of close family networks than of more distant kin and friends in female migration. Furthermore, this only applies to the Senegalese case, confirming our contextual hypothesis. Each close family member increases Senegalese women's odds of first migration by 60%. However, once

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<sup>40</sup> The variable is time-varying, and is measured at time t-1. For this rough measure, the partner is included.

<sup>41</sup> We have tested whether the difference in coefficients between men and women was significant by estimating a pooled model and introducing an interaction term between gender and networks.

controlling for the number of close family ties, having friends or extended kin abroad does not affect Senegalese women's chances of migration suggesting that female mobility out of Senegal is only dependent on the presence of close relatives abroad<sup>42</sup>. On the other hand, Congolese women, as well as men from both countries, are equally influenced by friends or distant kin and by close family members in their migration. We have further verified these results by estimating two additional models (Table A2, M2a and M2b, Appendix). We control, in both, for the size of the total network and introduce either the number of family members (M2a) or the number of friends/extended kin (M2b). Findings go in the same way: in M2b, a change in the network composition towards a larger share of kin and extended friends significantly *reduces* Senegalese women's chances. The composition of the network does not matter, however, for Congolese women, or for men in both countries.

The effects of the gender composition are investigated in Model 3 using two count variables, respectively the number of men and of women in the network, partner(s) excluded. In Senegal, the only useful network resource for men are prior *male* migrants<sup>43</sup>, supporting previous qualitative evidence about the gender segregated nature of the labour market at destination and about the importance of same-sex networks in connecting newcomers to jobs (Hondagneu-Sotelo 1994). On the other hand, for Senegalese women, both prior male *and* female migrants significantly increase their migration chances. The Congolese findings reveal two interesting aspects. First, there is no gender difference in the influence of prior men and women migrants. Second, female networks seem to play a larger role in Congolese than in Senegalese migration since they increase migration odds among both men and women. This may be due to the nature of the Congolese migration flows: unlike the Senegalese, Congolese female networks are well established as men's, at least in Europe where there is no gender difference in migration propensities. Thus, women have a larger experience with migration and occupy also a larger share of the migration networks than in Senegal, making them valuable resources for new candidates to migration, either women or men.

The last four models aim to investigate whether networks influence male and female migration through different channels. Our general hypothesis is that prior migrants who are in a better position to effectively support newcomers with their trip and with their integration at destination will be of a larger influence than less resourced network members in female migration. First, we expect network members abroad to be more influential than those who returned for women, while we expect returned migrants to also influence male migration. Findings from Model 4 reveal a different pattern: while being related to return migrants does not affect Senegalese women's migration chances, neither does it influence those of men in either country. In contrast, returnee networks seem to increase the odds of migration among the Congolese women.

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<sup>42</sup> T-tests statistics confirm that the difference is significant between the coefficients for close family members and for friends or extended kin among Senegalese women, and not significant for the other groups.

<sup>43</sup> Results are verified by estimating two additional models, in the same way as for the type of links, showing that a change in the network composition towards a larger share of males raises the odds of men's migration, while the opposite change significantly reduces them (Models 3a and 3b respectively, Table A2 in Appendix).

**Table 4: Effects of migrant network variables on the odds of first migration (discrete-time logistic model, coefficients presented as odds ratios)**

Variable	Category	Congo		Senegal	
		Men	Women	Men	Women
<b>Model 1: Partner abroad</b>					
Migrant network	<i>No current MN (ref)</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
	Has current MN besides partner	1.63**	2.30***	2.63***	1.83**
Partner location	<i>No partner (ref)</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
	Partner in Congo/Senegal	0.79	0.77	1.12	0.37***
	Has partner abroad	0.75	10.43***	4.53**	13.29***
<b>Model 2: Type of relationship</b>					
Type of links	Number close family members abroad	1.30***	1.19***	1.26***	1.60***
	Number friends/ ext. family abroad	1.21***	1.31***	1.22***	1.12
<b>Model 3: Gender composition</b>					
Gender	Number of men abroad	1.21***	1.29**	1.35***	1.30**
	Number women abroad	1.30***	1.29***	0.92	1.39*
<b>Model 4: Return network</b>					
Migrant network	<i>No current MN (ref)</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
	Number current MN	1.23***	1.27***	1.24***	1.35***
Return	<i>No return network (ref)</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
	Number return network	1.11	1.26***	0.79	1.02
<b>Model 5: Experience of members</b>					
Experience of members	Number recent migrants	1.47***	1.13	1.37***	1.16
	Number experienced migrants	1.13	1.51***	1.36***	1.41***
	Number long term migrants	1.10	1.28***	1.12	1.38***
<b>Model 6: Size of the current network</b>					
	One or two members	1.35	2.19***	2.48***	1.62*
	Three or more	2.81***	3.41***	3.22***	3.08***
<b>Model 7: Geographical concentration of members</b>					
Concentration of members	<i>Dispersed network (ref)</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>	<i>ref</i>
	No MN abroad	0.44**	0.18***	0.36***	0.30**
	Only one person abroad	0.99	0.59	0.91	1.09
	Concentrated network	2.03*	1.69	1.26	3.13**
	All members in same country	1.04	1.75*	1.53	3.52***
<i>Person years</i>		9 506	12 638	11 569	15 622
<i>Number of events</i>		306	239	448	317
Models 2 to 8 all control for having the partner abroad and exclude him or her from network variables (the number close family members, number of men or number of women (depending on the gender of the respondent), etc.)					
Survey design and weights are used in the regression					
* p < 0.10, ** p < 0.05, *** p < 0.01					

Next, we test whether women's migration chances depend more on prior migrants who have been abroad longer and had thus the opportunity to accumulate more resources than on the more recent migrants. Results support this hypothesis: female migration in both countries is only affected by prior migrants having spent five years or more abroad (Model 5). The opposite can be said about male migration where it is the more recent migrants who seem to be the most influential. Long-term migrants, settled at destination for over ten years, do not significantly improve their migration chances, nor do "experienced migrants" having spent between five and ten years for Congolese men. There are two possible explanations for this finding. On the one hand, if information is an important channel of network influence for men, we may expect fresher information to be more valuable. Migrants who have recently crossed the borders and dealt with the political and economic systems at destination probably hold more up-to-date information than migrants having entered more than ten years before. Second, a generational effect may lie behind these findings since the long-term migrants are probably also older, and therefore their example may be less relevant.

In Model 6, we test whether women need more network connections abroad in order to migrate than men. Results show an increase in migration chances in both countries when one or two members in ego's network are abroad and a larger increase when three or more persons are abroad. As expected, it is only for women – in both countries – that larger networks are significantly more influential than smaller ones<sup>44</sup>. More surprisingly, the Congolese men seem to rely mainly on larger networks, but these remain more important for women's migration than for men's migration.

Finally, we expect that networks which are more concentrated in a particular destination will be more likely to offer the kind of support women need for migrating. On the other hand, more dispersed networks, giving access to a more diverse range of information and migration choices, may be more useful in male migration. The hypothesis receives strong support in the case of Senegalese women: having networks where more than half of the members are in the same country substantially increases their chances of migration (Model 7). The geographical location of the network members does not appear to significantly impact Senegalese men's migration chances. In the Congolese case results are less clear-cut: Congolese men do appear to benefit from a higher level of concentration of the network, but the relationship is not linear: having all members in the same country is not better than having less than half in the same country. More concentrated networks appear to increase Congolese women's migration chances, but significantly so only when all the members are in the same country (compared to having a more dispersed network).

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<sup>44</sup> T-test,  $p < 0.001$

## 6. DISCUSSION AND CONCLUSIONS

Overall, our findings confirm the overarching hypotheses of this study, that gender and context shape the role played by migrant networks, and advance our understanding of their functioning.

First, descriptive statistics have shown that, among migrants, women are more likely to know prior migrants and to have larger networks. This brings initial evidence in support of our first hypothesis of a larger role of networks in female migration. While this finding applies to both contexts, gender differences are more pronounced among the Senegalese. However, the composition of migrant networks differs between the two countries. The share of females in Congolese networks is higher than in the Senegalese, probably due to higher migration rates among Congolese women, as previously discussed. Furthermore, Congolese men and women have strikingly similar networks in terms of the types of relationship, whereas substantial differences can be noted between Senegalese men and women. Immediate family members make up a large share of Senegalese women's networks, whereas the majority of Senegalese men's networks are mostly composed of extended kin or friends.

Next, we compared the timing of men's and women's migrations with respect to moves of their network members. In both countries women are two times less likely than men to "pioneer" a destination where no member of their network was located. However, Senegalese women are even less likely than the Congolese to fall in this category. Furthermore, while the largest share of migrations amongst Senegalese women appears to be for family reunification (50 % of them are joining their partner at destination), Congolese women are just as likely to migrate for family reunification as they are to go to places where other types of ties were located. Moreover, in both countries women are more likely than men to migrate to a destination where immediate family members besides their partner are located. This brings evidence in support of our second hypothesis, of a larger role of close family networks in female migration, especially in the Senegalese case.

In a final step, discrete-time event-history analyses were carried out to investigate in more detail the differential effects of network composition on men's and women's migration chances. At first sight, after taking into account the year of migration as well as the age, human capital, family life cycle and the religious background of the individuals, networks appear to be significantly more influential in women's migration than in men's, confirming previous research on Mexican migration. However, when we disaggregate the network and distinguish the influence of the spouse – which most previous research has not done - we see that this is partly due to a large impact of the partner's migration on female mobility. Behind a "network effect" lies thus a "partner effect" that, once accounted for, leaves networks equally influential in women's and in men's migration.

However, even after accounting for the presence of one's partner abroad, significant differences in the *type* of ties influential in male and female mobility stand out. Furthermore, while migrant networks influence male migration from both countries in a similar way, we can see differences between the two countries in the role played by migrant networks (besides the partner) in women's migration. An important and robust finding is that Senegalese women only rely on close family members to migrate, while both ties are equally important in

Congolese women's migration, just as it is for men from both countries. We would need more qualitative data in order to discern the mechanisms responsible for this difference, which shows, in our view, how barriers to female migration are culturally constructed. In Senegal, a context of lower female autonomy where women's migration is discouraged and seen as highly risky, results suggest that networks are mainly expected "to watch over and protect" (Lindstrom 1997) women who make the trip abroad. Such a function is best guaranteed by the highly trustful social capital embodied in immediate family members. In contrast, Congolese women make a more extended use of their networks, which could be a sign of a higher autonomy in their mobility practices.

Our findings of the greater reliance of Senegalese women on networks resonate with ethnographic research on the Senegalese River Valley (Ba 1996) and on Mexican migration (Hondagneu-Sotelo 1994; Kanaiaupuni 2000), which document how autonomous female migration is discouraged. However, our results should not be read in the sense that Senegalese women are passive actors, subjected to their partners' or close family members' projects. Qualitative research has also shown how women may strategically build and instrumentalize networks in order to achieve their own projects of economic and personal advancement. Coulibaly-Tandian (2007) found that family reunification is not always a unilateral decision of the man in which women have no say, but is often a strategy used by women in order to reach a European destination. More research is needed on the way women create and sustain these networks in order to overcome gender barriers to migration.

The results further show that the effect of ties with previous migrants varies by the gender of these migrants, reflecting both the gender segmentation of the labour market at destination and the degree of establishment of the gendered migrant networks. We found that male networks are the only influential connections among Senegalese men, and that both female and male previous migrants influence women's migration chances. Given the longer migration history of Senegalese men, male networks are more established and could thus offer access to more resources than female networks for both sexes. In addition, former male migrants are better able to give job-relevant information and contacts to other men. On the other hand, previous ethnographic evidence has shown the importance of female networks for women. Though less established abroad historically, these networks have been shown to be especially crucial for women who don't have the support of their family in migrating as well as to give valuable information and assistance with finding a job. In Congo, the more established nature of female networks may partly explain their positive influence in both men's and women's migration chances. However, Congolese men and women rely equally on both male and female networks. As Davis and Winters (2000) showed in the case of Mexican women's migration, these types of networks would thus act as « substitutes ».

We have also tried to further our understanding of the mechanisms through which networks promote men's and women's migration. Based on previous research, we asked whether the main function of networks for women is to offer them a financial and logistical support with migration, whereas former migrants play various other, equally important, roles in men's migration, such as providing information and motivation. Results support our general hypothesis with regard to Senegalese women: they are much more likely to migrate if they have well-established networks, made up of long term migrants and highly concentrated

in a particular country. We assume such networks to command a higher level of resources and be better able to support women's migration. In contrast, men's migration chances depend more on recent networks, while their level of geographical dispersion does not appear to matter, or only slightly for the Congolese. Somewhere in the middle, Congolese women also profit from connections to more experienced migrants, but the concentration of the network appears less relevant than in Senegalese women's migration.

In addition to these findings, this paper makes two major conceptual and methodological contributions. First, most previous studies are limited to an investigation of the role of household networks, which they can rarely disaggregate further, and of an extrapolated measure of community networks. To our knowledge, our study is one of the first to be able to take into account the influence of the larger social circle of the individual, such as family members who are not household members, friends and acquaintances. We show their gender and context-differentiated influence, thus emphasizing the importance of collecting such information. Furthermore, the detailed longitudinal information we have on the migration trajectory of the network members allows us to deepen our understanding of the functioning of networks, and to show how the experience embodied in them affects migration chances. Second, comparable data on two migration flows allowed us to further our understanding of the role of the context. Our findings all point to more pronounced gender differences in the Senegalese case, confirming our final, contextual, hypothesis. They further reveal the heterogeneous experiences of Senegalese and Congolese women. The former have more chances to follow rather than to precede, to migrate once a close family network has established itself for a long period of time in a single destination. The latter are more likely to explore new destinations, to follow friends and extended kin and benefit less from highly concentrated networks. We relate these findings to the more rigid patriarchal norms restricting female autonomy in Senegal, both in terms of mobility and economic activity. The comparative design of our analysis thus allows us to go beyond gender, and, within the limits of a quantitative study, to show how different culturally defined gender relations affect migration patterns and network dynamics.

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## 8. APPENDIX

**Table 1: Characteristics of the sampled population at the time of the survey<sup>45</sup>**

	DR Congo (N=1405)		Senegal (N=1067)	
	Males	Females	Males	Females
Number of individuals	592	813	799	871
%	47.0%	53.0%	49.4%	50.6%
Mean age at survey date (years)	33.2	32.4	39.7	40.9
Education level				
- None			19.0 %	37.4 %
- Primary	6.9 %	18.2 %	35.8 %	33.7 %
- Secondary	66.9 %	71.8 %	30.6 %	22.4 %
- Higher	26.2 %	10.0 %	14.5 %	6.5 %
% with migration experience	16.0 %	7.5 %	20.8 %	7.8%
Mean age at first migration (years)	28,2	29	27,2	29
Number of first adult migrations	309	241	448	317
Number of migrations to Europe (out of first migrations)	189	184	340	278

**Table A1: Covariates (measured at time t-1, if not mentioned otherwise)**

Variables	Categories	Models
<b>Variables of interest: Migrant Network</b>		
<b>Current migrant network (dummy)</b>	<i>No current migrant network (reference)</i>	M1
	Has a current migrant network	Dummy. At least someone in the network is abroad ( at time t-1)
<b>Location of current partner (categorical)</b>	<i>Single (ref)</i>	M1b-M7
	Current partner in the origin ctry Current partner abroad	
<b>Type of relationship composition</b>	Number close family members abroad	M2, M2a Parents, children, siblings
	Number of extended kin or friends abroad	M2, M2b Aunts, uncles, cousins, in-laws, nephews, friends, acquaintances, etc
<b>Gender composition</b>	Number men abroad	M3, M3a
	Number women abroad	M3, M3b
<b>Returned migrants</b>	<i>No returned migrants (ref)</i>	M4

<sup>45</sup> All percentages are weighted ; the Ns are unweighted (total sample size, number of first adult migrations and number of migrations to Europe)

<b>network (dummy)</b>	Has a returned migrant network	Dummy. At least one member of the network is back in Senegal/RDC that year
<b>Experience of migration (3 continuous vars)</b>	Number recent migrants abroad	< 5 years spent abroad
	Number experienced migrants	(5; 10 years abroad) M5
	Number long term migrants	> 10 years abroad
<b>Size of the current migrant network (categorical)</b>	<i>No network abroad (ref)</i>	
	Network of 1-2 persons abroad	M6
	Network of 3 or more persons	
<b>Geographical concentration (categorical variable)</b>	No migrant network abroad	M7
	Only one person abroad	
	<i>Dispersed network (ref)</i>	< 50% members same country
	Concentrated network	(50-95%) members same country
	All members same country	All members same country
<b>Control variables: in all models</b>		
<b>Age +age<sup>2</sup> Period</b>	From 18 years old. In years before 1990	Continuous
	1990's	Categorical
	2000's	
<b>Level of education achieved (categorical)</b>	No education (ref)	Categorical. Time varying, measured t-1
	Primary level	For the Congolese, No education and primary level have been grouped due to the low number of cases
	Secondary level	
	Some tertiary level	
<b>Occupational status</b>	Student (ref)	Time-varying, measured at time t-1
	Currently working	
	Unemployed & inactive	
<b>Family status</b>	Single (reference)	Broad definition of partnership, not restricted to married spouses. Dummy. Only in M1
	Is currently in a partnership	Dummy
	No children under 6	
<b>Religious belonging</b>	Has children under 6 years old	
	Murid, Tidiane, Christian or Other	Senegal
	Catholic, Protestant, Eglise du reveil, Other	DRC

**Table A2: Effects of changes in the relationship and gender composition of the network on the odds of first migration (discrete-time logistic model, coefficients presented as OR)**

Variable	Category	Congo		Senegal	
		Men	Women	Men	Women
<b>Model 2a: Increasing share of close family members</b>					
Type of links	Network size abroad	1.16*	1.34***	1.22***	1.12
	Number close family member	1.14	0.94	1.04	1.43***
<b>Model 2a: Increasing share of extended kin / friends</b>					
Type of links	Network size abroad	1.27***	1.25***	1.26***	1.60***
	Number extended kin/ friends	0.96	1.05	0.96	0.70***
<b>Model 3: Increasing share of men</b>					
Gender	Network size abroad	1.30***	1.29***	0.92	1.40***
	Number men abroad	0.93	1.00	1.47**	0.93
<b>Model 3: Increasing share of women</b>					
Gender	Network size abroad	1.21***	1.29***	1.35***	1.30**
	Number women abroad	1.08	1.00	0.68**	1.07