Do migrant networks foster transnational solidarity ? Network integration and remittance incentives among Senegalese in France and Italy*

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Abstract

The economic literature provides much evidence of the positive impacts of social capital on migrants' economic outcomes, in particular through assistance upon arrival and insurance in times of hardship. Yet, although much less documented, migrant networks may well have a great influence on migrants' remittances to their home country and particularly to their origin household. Given all the services provided by the network, the fear of being ostracized by its members and being left with no support system could provide incentives for migrants to commit to prevailing remittances behavior, as an affirmation of their community membership. In this paper, we thus analyze to what extent migrant networks in the destination country influence the degree to which migrants meet the claims of those left behind. We first discuss the introduction of networks in models for classical remittances motives, and provide a simple illustrative theoretical framework to account for the double impact networks may have on migrants' remitting behavior, through the provision of services to migrants and the spread of information flows between home and host countries. We then use an original dataset of 600 Senegalese migrants residing in France and Italy to explore the main intuitions illustrated by our model.

Keywords: Remittances, migrant networks, asymmetric information

JEL codes: F24, F22, D82

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1 Introduction

The economic literature provides much evidence of a positive impact of social capital and networks on economic outcomes through a reduction of transaction costs, access to and exchange of information. In particular, social capital has been found to facilitate access to the labor market (Aguilera, 2002; Drever and Hoffmeister, 2008) and to improve wages and occupational status (Aguilera, 2005; Lin, 1999). This role is all the more essential for immigrants. Migrant networks, indeed, foster economic and social integration of immigrants in destination countries and, for example in the presence of discrimination in the labor market, may allow them to get access to a larger set of job opportunities (Mouw, 2002). But networks have also been found to provide freshly arrived migrants with shelter and assistance (Munshi, 2003; Granovetter, 1995), and, in the course of their stay, offer them material support in times of hardship. Using data on Ghanaian migrants in the Netherlands, Mazzucato (2009) explores how migrant transnational networks are related to the ability of migrants to get secure employment or housing and to cope with problematic situations such as marital troubles, being imprisoned, losing a job or the funeral of a family member. She finds that migrant networks are essential in helping migrants address crises, especially when some financial assistance is needed. Additional evidence is provided by Menjívar (2002) who finds that Guatemalan immigrant women in Los Angeles with no access to formal health care tend to resort to alternative methods to get treatments, in which friends, family, neighbors and acquaintances are key actors.

As for Senegalese migrants in France and Italy, the recent data that we collected in 2009 within the framework of the MIDDAS project (described in section 3) support the evidence that migrant networks play a key part along those two dimensions. On the one hand, we find that upon arrival, respectively 70% and 43% migrants found a place to live and a job thanks to kinship members or Senegalese non-relatives. On the other hand, most of them got support from their kinship or Senegalese network during unemployment periods. The data also suggest that those who found their first job by themselves stayed unemployed for a longer period.

Yet, another important feature of migrant networks is that they are means of communication between migrants and their relatives in their origin country. Networks convey information but may also vehicle social norms, and as such, they may exert a control on individual behaviors in order to guarantee the cohesion of the migrant community and preserve the link to the origin

country. This may be particularly the case in the Senegalese community which seems to be structured by demonstrated solidarity values. In this perspective, continuing interpersonal relationships established with kinship members or other co-ethnics may act as a constant reminder to the migrants of their commitment to their family and relatives back home. One specific consequence is that migrants are expected to remain closely connected with their origin country, thus inducing for migrants the obligation to send monetary transfers to those left behind, for fear of being condemned. And given the large amount of services networks can supply them with, ostracism and the fear of being left with no support can be an effective threat for migrants to prevent them from reneging on their remittance obligations.

Nevertheless, despite a pervasive and growing literature on remittance motives, very few papers investigate the specific impact of migrant networks on migrants' transfer behavior. Only a few empirical works (Sana, 2005; Roberts and Morris, 2003) follow after the anthropological material published by Philpott (1968) who argues that social control with regard to remittances obligation is largely rooted in migrant networks in the case of Montserratian migrants in Britain.

In this paper, we try to fill this gap in the economic literature and investigate to what extent migrants' social networks, made up of family members, kin, fellow villagers or friends, may be related to their remitting behavior. To that end, we explore the double dimension of networks as services suppliers and communication devices. We present here the idea that origin households may control migrants' access to network resources by manipulating reputations and spreading rumors through the very network.

Therefore, we first discuss the role migrant networks could play in existing models for remittances motives and present a basic theoretical framework, general enough to encompass any other remittances motive, to illustrate their double function and give intuitions of their expected impact on migrants' remitting behavior. We then use original data on a sample of 602 Senegalese migrants residing in France and Italy to test the main predictions of our model.

The remainder of the paper is organized as follows. Section 2 draws on the existing anthropological literature to get some key insights on the main features of Senegalese migrant networks. In section 3, after briefly reviewing the network literature, we synthesize the main results of the economic literature on remittances motives, discuss the introduction of networks in existing models, and develop a basic model allowing for network effects. Section 4 presents

the survey data collected among Senegalese migrants in France and Italy and provides some descriptive statistics. Section 5 explores the intuitions summarized in the model and discusses the interpretation of the results and section 6 concludes.

2 Senegalese Migrant Networks: a Literature Review

Due to strong data limitations, the economic literature exploring the role of migrant networks in the African context is rather poor. Existing studies have mainly analyzed the role of migrant networks on the migration decision. In the case of Senegal, results in Chort (2011), based on data from a nationally representative household survey, suggest that migrant networks play a powerful role in shaping patterns of international migration from this country. Most of this influence may be attributed to the assistance and resources supplied by migrant networks to candidates to emigration in the origin country and to newly arrived migrants in destination countries. Additional insights into the complex relationship between Senegalese migrants, their origin household and the Senegalese diaspora can be found in the socio-anthropological literature. Regarding the matter in question, the recent papers by Mboup (2001), Elia (2006), and Dia (2007, 2009) are particularly instructive. Through in-depth interviews conducted among Senegalese migrants in France and Italy, they first provide strong evidence of network-based assistance and insurance mechanisms among Senegalese migrants. According to Mboup who conducted a survey among Senegalese street-sellers in Italy, migrants in Italy are hosted by their fellow countrymen, offered free accommodation and credit to start their own business (p.47) upon arrival. In addition, Elia who studied this very circle of Senegalese street sellers in Italy documents the existence of mutual aid funds raised through a weekly tax among settled members of the group of migrants, that are granted to unlucky newcomers whose goods have been seized (p.44).

As an additional insight, the above mentioned papers provide evidence that networks transmit forms of social control that reward conform behaviors or, *a contrario*, condemn deviant ones. One mechanism through which social control works is the spread of information. Indeed, as information flows easily through migrant networks, the news (or rumor) of any misbehavior may be quickly communicated not only among migrants but also back to the home country. As suggested by Dia (2007), the new information and communication technologies, and in particular

cellular phones, that have rapidly grown in Senegal have contributed to accelerate the diffusion of rumors. Information on misbehaviors may also flow from origin households to network members in the destination country. In this perspective, the concept of "multi-located village" coined by Dia (2009) well accounts for the network structure of the Senegalese diaspora, as well as for the circulation of information between its members and the origin country. According to Dia, the overall control through reputation, by the use of rumor, plays as a permanent adjusting or re-adjusting mechanism for individual behaviors within the group. Remitting funds to those left behind (be they members of the origin household, the extended family or the community) is one of the behavioral standards Senegalese migrants are expected to conform to. Satisfying the financial requests emanating from the community of origin is thus socially rewarded [1].

By contrast, migrants not fulfilling their obligations expose themselves to the disapproval of their peers. Very interestingly, Elia (2006) mentions the translation of implicit control of peer migrants into clear warnings when individuals are considered to weaken the link with either the origin or the migrant's community by being reluctant to work or send remittances. Note that the author explicitly mentions young migrants' misbehaviors, suggesting that age or generation plays an important part in the control exerted by the migrant network on its members.

Pushing further their analyses, the authors provide several pieces of evidence showing that rumor spreading can constitute effective means of controlling and influencing migrants' behavior. Indeed, as declared by one migrant interviewed by Elia (2006), deviating from the norm may be expected to result in ostracism and the concomitant loss of access to some network services or resources. Elia (2006) emphasizes that the social cost of isolation is very high because it means no more reciprocity links in the destination country as well as in the origin country. Besides, Dia (2009) suggests that the cost of deviation increases with time and migration of other family members[2].

Of course, one may wonder whether the control exerted by the network is a necessary condition for the migrants to commit themselves to send money to their relatives in their home country. It could indeed be argued that solidarity norms are strongly internalized by Senegalese migrants, especially as alms-giving is an act of religious virtue in the Islamic religion. It could

[1] "The migrant who sends money regularly so as to guarantee the material welfare of his community is considered to behave well. He is said to care about his own."(Dia (2009); authors' own translation)

[2] "When several members of the same family have migrated, it becomes uneasy and risky to curb the trend by not satisfying a financial request." (Dia (2009); authors' own translation)

also be argued that migrants have altruistic feelings for those left behind, which ensures that they fulfill their remittance obligations. The altruistic motive is further discussed in the empirical part of this paper, and the influence of religion is tested by considering the influence of Koranic schooling, or Murid brotherhood. Indeed, Koranic schooling is found to have a significant influence on representations of a migrant's duty, those having Koranic education being more likely to value a model of investment in the village, to the benefit of relatives and to the detriment of oneself (Dia, 2009).

What the above quoted elements taken from the anthropological literature actually suggest is that solidarity norms may be cemented by migrant networks which act both as providers of numerous services to the migrant and as social control devices. In addition, as emphasized above, the composition of networks is expected to matter, in particular with regard to age, as shown also in Dia (2009). The author indeed provides evidence that "senior" migrants, though not always technically "elders" seem to be the guardians of traditions by passing down to their descendants or newly arrived migrants norms of intergenerational relations, even on a narrative mode, thus tacitly commanding them to materialize their gratefulness by gifts. We will therefore explore further the effects of the age structure of networks in the empirical section: individuals interacting frequently with older migrants may be expected to model their conduct on them and may thus remit more.

3 Network Effects on Remittances: A Theoretical Perspective

Both the theoretical and empirical literature on the motives for remittances is quite broad. Rapoport and Docquier (2006) provide a comprehensive summary of the economic analysis of remittances, and in particular expose separately individual and household models, referred to as family arrangements. However, very few papers investigate the specific impact of migrant networks on remittances, and to our knowledge, no attempt has been made yet to build a theoretical model of remittances motives encompassing network effects.

Our aim in this section is thus twofold: First, drawing upon the review provided by Rapoport and Docquier (2006), we recall the predictions of existing models in the literature and discuss the inclusion of migrant networks in these models, as well as ensuing results. Second, we present a very simple theoretical framework that illustrates the role played by networks as

regards migrants' remitting behavior, while keeping it general enough so that it could be either included in or adapted to one of the existing models.

But beforehand, it is necessary to briefly mention the economic literature on social networks and specify our contribution to this literature.

3.1 The Network Literature

The economic literature on social networks is rich, and mostly theoretical (for a survey, see for example Jackson (2006)). Most investigated issues include the formation of networks, the trade-off between efficiency and stability of networks, or the impact of network structure on economic outcomes. Close to our concerns, in particular, a subset of this literature focuses on risk-sharing networks, on both theoretical (Bramoullé and Kranton, 2007) and empirical levels (Fafchamps and Gubert, 2007). Note that an interesting and suggestive result of the theoretical model of networks provided by Bramoullé and Kranton (2007) is their lack of stability: under their assumptions, networks constantly change, links being cut out or created, resulting in cyclical evolutions and in greater vulnerability for peripheral agents.

By contrast the empirical studies are fewer, in particular because datasets need to have a very specific structure to allow a proper description or study of networks and their properties. Indeed, in order to study network formation or configuration one needs to be able to construct all links between agents in a relevant perimeter, representing the maximal size of the potential network.

The data we use in this paper do not allow to study the formation of migrant networks, nor give a comprehensive view of one particular network. Indeed, since we asked the surveyed migrants to list members of their social network, the information that we collected reflects for each individual what he unilaterally defines as his own network. The resulting picture is a series of disconnected individual specific networks (one per sample migrant) that are partially observed: each network is reduced to direct links issued from one particular node (representing the position of the sample migrant in the network). We thus have self-declared first-degree links of egocentric networks.

However, the originality of our dataset lies in the richness of information collected on the nature of each migrant's relations with other members of her social network. This feature

of our data allows us to address yet largely unexplored issues such as the strength and more generally the quality of links. Although the seminal paper of Granovetter (1983) is based on a distinction between strong and weak ties, this issue is still in the research agenda (Jackson, 2006). Indeed, empirical works intending to assess the impact of networks' strength rely on data that allow to identify at most different family ties. Concerning migrant networks, one of the most detailed analysis, based on Mexican data, is provided by Davis, Stecklov, and Winters (2002) who disaggregate networks according to kinship ties. Since we have data not only on family ties between surveyed migrants and the member of their networks, but also their age, origin, nationality, the geographical distance between them, and the frequency and nature of their contacts, we are able to construct original and refined measures of networks' strength, centred on each migrant. A contribution of our study to the empirical analysis of social networks and their impacts is thus to provide different empirical measures of the strength of the links between one migrant and her network, and relate them to potentially different economic outcomes, such as remitting behaviors.

In particular, as noted in the introduction, the empirical literature on migrant networks is substantial but very few papers attempt to build bridges between migrant networks and migrants' remitting behavior. One exception is the paper by Roberts and Morris (2003) which considers that remittances buy access to network services. However, their argumentation suffers a number of flaws, since they fail to recognize the endogeneity of migrant networks and adopt a quite narrow view by reducing the set of network services remittances can buy to a portfolio of potential jobs. From similar basic premises, Sana (2005) regards migrant remittances as "the fee that migrants pay to remain members of the transnational community", which confers them higher social status. Again, a unique, though different, dimension is granted to the set of services migrant networks can provide. Moreover, in both papers the assertion that remittances condition migrants' access to networks is documented by anecdotal evidence but remains unquestioned. Last, note that both examples apply to the well documented Mexican migration to the United States.

This brief summary suggests that the relation between networks and remittances remains largely unexplored, and in particular needs to be supported by some theoretical structure to allow us to fruitfully exploit previous contributions without adding yet another motive to remit

to the already sizeable list of motives modelled in the migration literature. Moreover, the assumption that remittances buy access to networks implies that household members who stayed in the origin country control part of the network. This hypothesis will be discussed, especially in the Senegalese case, and remains altogether an open empirical question.

3.2 Networks and Motives for Remittances

Although many motives for remittances are theorized about in the economic literature, including for example altruism, intention to return, loan repayment, investment, or inheritance, they can be summarized more clearly by pointing out that they basically come down to two kinds of models: altruistic (individual) and exchange (household) models. Though this point is developed below, note already that the meaning we give to the second category of models is broader than usual (and in particular in Rapoport and Docquier (2006)). Indeed, we consider that all "motives" resulting from a contract between a migrant and his origin household are mere variants of a single theoretical framework, where remittances buy a good or service provided by the household. We will now discuss how networks fit into those two different theoretical frameworks accounting for migrants' remitting behaviors.

Altruism

As emphasized by Rapoport and Docquier (2006), altruism has long been an assumption rather than a debated theory in the literature on remittance motives. Altruism has also been categorized among individual motives since it implies that migrants decide on their own initiative to transfer part of their income to their relatives left behind. However, since altruism technically refers to very particular utility functions where the satisfaction of others (household members in the home country) enters the utility function of migrants, the more general term of loyalty will be preferred. Indeed available data rarely meet the necessary conditions for altruistic models to be empirically tested. One specific and testable prediction is in particular the fact that remittances cannot increase with the recipient's income. Longitudinal data with detailed recordings of income and remittances would thus be needed. Altruistic models share with any other motive the prediction that remitted amounts increase with the sender's income. Most empirical applications additionally consider that the loyalty of the migrant decreases with the time he

spent abroad and is proportional to the closeness of her family ties with staying members.

How do networks matter with respect to remittances if migrants' remitting behavior is assumed to be prompted by loyalty to their relatives? Under the assumption of pure altruism, networks are actually not expected to have any impact per se, once their potential positive effect on migrants' income is controlled for.

Nonetheless, even though networks may have no direct causal impact on remittances, loyalty may well drive both migrants' remitting behavior and socialization: migrants who prove more loyal to their home country are expected to be more inserted in migrant networks *and* be more likely to remit (and remit more). In that case, networks, rather than explaining remitting behavior, would be endogenously determined by the migrant's degree of loyalty. Although this very loyalty is unobservable, it may much likely be proxied by observable individual characteristics, such as time spent in migration or nature of family ties between the migrant and the staying members of his origin household, as assumed by papers derived from altruistic models, but also gender (Lauby and Stark, 1988) or religious education.

Household models

In the general sense of the word, all motives relying on households models can be considered mere variants of a single exchange model: indeed, in this broad category of motives, remittances are assumed to buy goods, or more frequently services offered by the recipient household. All motives for remittances but altruism can thus be derived from an identical theoretical framework. Indeed, while the nature of services provided by the household can range from managing the migrant's business or assets while abroad, to insurance or credit services, for example to finance the migrant's travel, mechanisms at stake are identical. First, all of these motives imply a contract between the migrant and his origin household either explicit or not.

Insurance and investment models have an additional dimension of inter-temporal redistribution, since the services supplied by the household to the migrant are assumed to be to a great extent provided before migration, and remittances are thus meant to repay the migrant's debts. According to the insurance motive, migration provides insurance to the household by diversifying risks. Migrants benefit from the contract by being insured in turn in bad circumstances (in mutual insurance models), or insurance is a way of repaying a debt to their household that

was responsible for their own education and care, or funded their travel and settlement abroad. Both motives may be mixed, as assumed by Stark and Lucas (1988). Some services, on the other hand, may be supplied by the household while the migrant is abroad (asset management, care of the migrant's own children).

In spite of this difference, a second common feature of all households models is the existence of information asymmetries. The migrant and his origin household are by definition separated by geographical distance. Each agent's effort in complying with the agreed terms of the contract is thus at least partly unobservable to the other party, which raises monitoring issues. The interaction between both parties can be modelled as an agency relation, that may work in both directions, depending on the nature of the good or service to be exchanged. When remittances pay for the upkeep of the migrant's assets or support of his children or spouse, the household can profit from the private information it has on its own effort. On the other hand, when explained by insurance or investments motives, remittances mostly repay a service offered by the household in the past: the agent benefiting from private information on his own effort to fulfill the contract is thus the migrant. In any case, except under the very specific assumption of altruistic preferences for the agent which would ensure that the contract would be self-enforced, an enforcement device proves necessary. Inheritance, specifically developed by Hoddinott (1994), has been pointed out as a possible enforcement device in insurance and investment models (Stark and Lucas, 1988): the threat of being disinherited may prove a strong incentive for migrants to fulfill the contract. What we argue in this paper is that networks can also be used by the principal as an enforcement device.

This discussion suggests that networks can enter models formalizing any exchange motive for remittances in two different ways.

First, networks can be one of the goods or services to be exchanged. Indeed, what the above mentioned papers relating remittances and networks as well as the socio-anthropological literature specific to the Senegalese context suggest is that network access is one of the services that can be bought by remittances to the origin household. This interpretation does not imply that the origin household has a full control over the migrant network: we only need to make the plausible assumption that some network resources, for example the access to non-migrant members' own contacts or relatives in the destination country are conditioned on migrants'

remittances. This hypothesis will be further discussed in the empirical section, by differentiating networks depending on their nature and composition, but according to this interpretation, both the probability to remit and remitted amounts should increase with measures of past or present access to network services and use of network resources.

Second, networks, due to their structure and characteristics, may be used by the principal in the agency relation between the migrant and his household to balance information asymmetries. In particular, networks can vehicle information and rumors that may be useful to the household to monitor migrants' behavior. Indeed, information conveyed by the migrant network enables the household to be aware of potential misbehaviors or lies of the migrant, which can prove an effective incentive not to deviate for the migrant if he expects to be punished once detected. If we assume in addition that the household can use the network to punish the migrant, then the network can be considered a strong enforcement device. Such an assumption may be debated: one could imagine that the network conceals information to the household and is reluctant to punish deviant behaviors. In that extreme case, networks would not affect remittances at all. However, anecdotal evidence and socio-anthropological surveys of Senegalese migrants suggest that networks use different punishment schemes if necessary (and in particular ostracism), to get migrants to comply with their apparently unquestioned obligation to remit. Different elements can be put forward to explain such a mechanism: informal talks with migrants, or case studies from the anthropological literature first suggest that the network shoulders a collective responsibility when one of its members fails to comply with prevailing norms of remittances. The network may thus be careful to punish free riders' behaviors that would deteriorate the relations of all migrants with the origin country. Second, the network, as a collective agent, is in between the origin and destination countries, and its strength relies on the link it establishes between both. If this link were to be cut, the network would lose part of its role and importance. Third, the network's composition is constantly changing, with new arrivals, deaths, return migrations, which may be an obstacle to any attempt of migrants to collude against the household. Fourth, due to the high degree of endogamy in rural communities, a migrant reneging on his obligation to remit is likely to either affect negatively the well-being of other network members' relatives or cause in compensation an increase in the burden of remittances for those very network members. Fifth, elements in Dia (2009) as well as a case study of a Senegalese association in

France provided by Vari-Lavoisier (2010) suggest that at least in some cases, the organization of migrant associations, as well as the social status of its members in the migrant community are rooted in traditional hierarchies. Since the social organization of the origin country (with castes) and more precisely the social structure of the origin community (relying on inherited positions engraved on family names) provide an important source of the legitimacy of the power and social status of migrants, particularly those in charge of migrant associations, it is in their interest to encourage migrants to preserve tradition and maintain the link with the origin country through remittances. All these aspects contribute to explain why migrant networks should punish deviant behaviors of their own members, similar in this respect to the mechanism enforcing contracts in the agency relation between Maghribi merchants and their agents overseas as studied by Greif (1989). Still, they do not rule out the possibility for migrants to collude. The empirical section provides further investigation of this issue by differentiating networks depending on their nature (for example whether migrants are members of a formal origin community oriented association), their homogeneity (relative to social status, geographical origin or age), or their content (members' date of arrival, nationality).

Beforehand, we take from Rapoport and Docquier (2006) a brief summary of the predictions of insurance and investment models regarding variables of interest other than networks. If remittances repay the household its initial investment in education, remitted amounts are expected to increase with the migrant's education. According to the inheritance motive, the closer the ties between the migrant and the recipient household, the higher the remitted amounts (sons and daughters being more likely to inherit). Moreover, since siblings may compete for inheritance, remitted amounts should be positively correlated with the number of potential inheritors (or other migrants) from the same household, or there should be an inverted U-shaped correlation between both variables. As for insurance, a key feature of remittances linked to this motive is that they should not be sent on a regular basis. However, as emphasized by Rapoport and Docquier (2006), remittance motives are most often inextricably mixed.

The empirical analysis, in line with our general theoretical framework, will thus investigate the potential influence of any variable likely to affect remittances, according the above mentioned motives that are relevant in the context of Senegalese migration to Europe.

3.3 An Illustrative Model

The model sketched in this section aims at representing in a very simple way the expected impact of migrant networks on remittances, owing to their double dimension, as providers of services bought by remittances and enforcement devices in household contracts. It is kept general enough to encompass a large range of exchange models, while proving consistent with altruism.

Note that we specifically focus on one side of the agency relation, where the migrant has private information (about his own effort). Such a choice is consistent with insurance or investment models, and in line with insights from the available socio-anthropological evidence on Senegalese migration. Under the assumption that the migrant is the agent, and assuming further that the network proves an efficient enforcement device, we should observe a positive correlation between the efficiency of the network in conveying information flows, or the network loyalty to the origin household in the home country, and remitted amounts. However, since, as noted above, the agency relation may work the other way round or migrants could collude against their origin households, the expected effect of networks on remittances according to this specific information channel will remain an open empirical question.

As noted above, networks are expected to play a part in household models especially. Indeed, based on anecdotal evidence, we expect networks to influence migrants' remitting behavior both through the provision of a large range of services and an information effect. We intend to conceptualize the idea that being granted an access to network resources might provide an incentive for migrants to commit to their remittance obligations. Since ostracism seems to be a credible threat and has a high social cost, we argue that remittances can be represented as the result of a contractual agreement between the migrant and his origin household which concerns network services and is enforced through the mediation of the very network. We do not pretend that other motives are not effective, and provide a theoretical framework general enough to encompass them as well. Moreover, the predictions regarding variables other than networks of the main competing motives of remittances are also explored in the empirical part of this study.

We consider the interaction between two agents: one migrant and his origin household. In order to emphasize the different roles networks can play, and insist on the two kinds of information asymmetries at stake (adverse selection and moral hazard), we consider that the

migrant first chooses a contract among those proposed by his origin household, and then, once a contract has been agreed on, decides the amount of remittances to be sent. To illustrate this choice, we can think of a contract being concluded before the migrant's departure, whereas remittances occur once the migrant has actually reached his destination.

We restrict the model to the simple case where the migrant enters into a contract with his origin household for network resources. However, it could be easily generalized by considering that the household's offer concerns a bundle of services, associated to a given amount of remittances, among which is a granted access to the household's own network and contacts.

Migrants are assumed to differ in their valuation of network services. The heterogeneity in the migrants' types is represented by a θ parameter distributed in $[0, 1]$. This assumption allows for altruistic motives for remittances: indeed, we expect migrant's valuation of network resources to be positively correlated with the migrant's loyalty to his origin household or country. Moreover, in a more general sense, such a loyalty parameter is assumed to be driven by variables affecting the migrant's needs of network resources, such as her situation on the labor market in the country of destination, the migrant's intention to return in the home country, or her social insertion in other networks. Note that this parameter is further assumed to be private: the household does not know with certainty the degree of loyalty that characterizes the migrant.

The household designs a menu of contracts that associates a given amount of network services to a corresponding level of remittances and network control: for more convenience, we assume that the household offers two different contracts, $(0, 0, 0)$ and (b, t, α), with $b > 0$ the amount of network services, and $0 < t < 1$ a remittances rate, similar to a tax on the migrant's income, and α the characteristics of the network likely to affect the control it exerts on the migrant. The b parameter represents the numerous examples of network services provided by family or fellow-countrymen to migrants in host countries (assistance to newly arrived migrants, insurance), documented by the socio-anthropological literature mentioned in section 2. But the formulation that we chose is general enough to also encompass exchange motives for remitting summarized above: indeed, b may include a broad range of household services (education, insurance, loans, child caring) either network-mediated or not, in addition to network services, although we explicitly focus on the latter.

While of course, the interaction between the migrant and his household covers in general

more than one period, dynamic aspects are not specifically taken into consideration here. We indeed assume that if the migrant chooses the contract with no remittances and no network access, he is not offered another contract in the future. Contrary to Gagnepain, Ivaldi, and Martimort (2009), we do not investigate reputation issues and their consequences on contract renegotiation. This choice first meets tractability concerns, and is furthermore partly justified by the observation that the migrant's loyalty as defined above varies (sometimes exogenously) over time, so that the household may not be able to learn the migrant's type from his past moves, and thus readjust its offer based on updated information. Indeed, in addition to the widely encountered assumption that loyalty tends to decrease over time, it may be affected by exogenous economic shocks (for example unemployment) or health shocks affecting the migrant's needs for network based assistance or insurance. The model withstands a time dimension limited to repeated interactions without learning.

Then, as mentioned above, we consider that once the contract is concluded, those migrants who self-selected into the non-zero contract remit to their household. Under the very plausible assumption that at least some of their actions are not perfectly observed by their household, migrants may exploit this feature to cheat over the agreed contract. This potential opportunistic behavior (moral hazard) is illustrated here by the fact that the actual amount of remittances is based on the migrant's declared income, denoted $\tilde{Y}_i$. The migrant may therefore choose to understate his income in order to remit less while enjoying the use of network resources.

This is the point where the network plays a second part, as an enforcement device. Indeed, based on the assumption that the household has at least a partial control over the network, it may use network characteristics to monitor the migrant's behavior. The network is in position to collect information about the migrant since the latter is in contact with network members to benefit from network resources, and is thus likely to detect lying migrants. On the other hand, the network conveys information through the movements of its members, meetings or merely frequent phone contacts between home and destination countries, and may thus be able to report migrants' misbehaviors to their household. Note that, as emphasized above, we consider that it is in the network's interest to detect, denounce and punish deviant migrants. The possibility for network members to collude will be further discussed in the empirical section.

In particular, we can plausibly assume that if the migrant lies about his income, he has a

positive probability q to be caught and punished. We consider that this probability increases with the difference between the migrant's declared and true incomes, and the parameter above denoted α ($0 \leq \alpha \leq 1$) meant to represent the will, or ability of the network to punish a deviant behavior, or its efficiency in collecting and conveying information.

Consider the case where the probability to be punished when cheating writes $q = \alpha f(Y_i - \tilde{Y_i})$, where Y_i denotes the migrant's income in the destination country, and $\tilde{Y}$ represents the income declared by the migrant ($\tilde{Y_i} < Y_i$), and $f(.)$ is convex ($f' > 0$, $f'' > 0$), with $f(Y_i - \tilde{Y_i}) = f(0) = 0$ if $\tilde{Y_i} = Y_i$ (the probability to be punished is equal to zero when the migrant does not lie) and $f(Y_i - \tilde{Y_i}) = f(1) = 1$ if $\tilde{Y_i} = 0$ (the probability to be punished is maximal, equal to α, if the migrant declares a zero income). In order to keep the presentation simple, once punished, the migrant is assumed to have no longer access to network services.

Under all the above assumptions, if the migrant chooses the contract implying a strictly positive level of remittances, his utility writes:

$$U_i = Y_i - t\tilde{Y_i} + (1 - \alpha f(Y_i - \tilde{Y_i}))\theta_i b \tag{3.1}$$

else,

$$U_i = Y_i \tag{3.2}$$

We use a quadratic form for $f(.)$ satisfying the above required conditions, such that q writes $\alpha(\frac{Y_i - \tilde{Y_i}}{Y_i})^2$. Equation 3.1 becomes:

$$U_i = Y_i - t\tilde{Y_i} + (1 - \alpha(\frac{Y_i - \tilde{Y_i}}{Y_i})^2)\theta_i b \tag{3.3}$$

First, the participation constraint for the migrant thus writes $Y_i - t\tilde{Y_i} + (1 - \alpha(\frac{Y_i - \tilde{Y_i}}{Y_i})^2)\theta_i b > Y_i$. The inequality proves true for any θ_i positive, which means that if the possibility to cheat once abroad is internalized at the earlier stage when the contract is chosen, all migrants, whatever their individual valuation of network services choose the non-zero contract.

Second, as regards remitted amounts, the migrant maximizes her utility (equation 3.3) with respect to her declared income $\tilde{Y_i}$ (which is her remittance base). If $Y_i < \frac{2\alpha\theta_i b}{t}$, there is an

interior solution characterized by:

$$\tilde{Y_i^*} = Y_i(1 - (\frac{tY_i}{2\alpha\theta_i b})) \tag{3.4}$$

On the other hand, if $Y_i > \frac{2\alpha\theta_i b}{t}$, we have a corner solution with $\tilde{Y_i} = 0$. The intuition of this result is straightforward: if the "remittance tax rate" is too high, compared in particular to the benefit the migrant can obtain by having access to the network (the b parameter weighted by the subjective valuation parameter θ), then the migrant's optimal strategy is to choose not to remit.

When there is an interior solution, the remittance base (the income declared by the migrant $\tilde{Y_i}$) is found to be a quadratic function of the migrant's income Y_i and increases with the network efficiency or ability to collect information and punish the migrant α, with the parameter representing the migrant's loyalty and need of network services θ, and the amount of services bought by remittances b. The remitted amount writes $t\tilde{Y_i}$.

The above formulation also illustrates the intuition that interactions between all three parameters, α, θ and b, may matter. This issue will be particularly developed in the empirical analysis below. Since θ cannot be directly measured, we assume that this parameter can be approximated by observed characteristics of migrants, such as their education, the time they spent in migration, their labor market status. This point is further developed in section 5.

4 Data and Summary Statistics

We focus our analysis on Senegalese migrants that have been contacted in France and Italy through the MIDDAS project. These two countries have been chosen since they nowadays represent two major destinations for Senegalese migrants. France was for a long time the favoured destination of Senegalese leaving Africa, due to historical links and common language, whereas Italy emerged as one of the top European destinations until the late 1990s. Such different contexts suggest that Senegalese migrants in both countries could constitute two distinct movements, which is confirmed in particular by the sociological studies above quoted. Among other differences, migrants in Italy are much more homogeneous than those in France with respect to religion since the Italian destination has been particularly invested by Murid networks. On the

other hand, in many respects Italian and French economies are much comparable, with similar living standards and labor market conditions, with some a few differences described below. For all these reasons, we think that the comparison between migrants in these two destination countries is both relevant and particularly instructive.

300 Senegalese migrants in France and 302 Senegalese migrants in Italy were interviewed over the year 2009 using common sampling methodology and questionnaire. Detailed information on migrants' personal networks in France and Italy has been recorded together with data on remittances sent to the origin household and home community, savings, investment projects and migrants' individual characteristics.

4.1 Sampling Method

Any attempt to carry out a survey focused on migrants faces the problem that international migrants represent a very small proportion of the population of a given country and that no survey frame is available[3]. To mitigate these two problems, we applied the same survey method as the one adopted by Lydié, Guilbert, and Sliman (2007) in their survey on Sub-Saharan Africans in Greater Paris. We first used the most recent population censuses in France and Italy to construct three strata according to the density of the Senegalese population in each district. Districts were then randomly drawn within each stratum with probabilities proportional to the number of Senegalese in those districts. We then defined the number of migrants to be surveyed in each selected district using the relative weight of each district in the total Senegalese population[4]. Surveyors were sent in the selected districts and tasked with getting in contact with Senegalese in the public space (streets, markets or shopping centers, metro stations, etc.). To be eligible, interviewees had to meet three criteria: being aged 18 and over; residing in the district; and either being a Senegalese national or a former Senegalese national. This method ensures that the resulting sample can be considered geographically representative, assuming that the geographic distribution of Senegalese migrants was well estimated in the latest census data and has not dramatically changed since then.

[3]For a detailed discussion on the difficulties raised by migrant surveys and a comparison of the performance of alternative survey methods, refer to McKenzie and Mistiaen (2009)

[4]Further details on the sampling methodology are provided in appendix

4.2 Sample Composition and Migrants' Main Characteristics

Summary statistics on the migrants' characteristics are given in tables 1 and 2. A striking feature is the difference in migrants' profiles between France and Italy, as suggested by the tests provided in column (4) of both tables. The population of migrants in Italy appears much more homogeneous: first with respect to ethnic composition (with a great majority, 77%, of wolof) or religion, since 66% of them belong to the Murid brotherhood (21% in France), and geographic origin, with more than one half coming from Dakar. Second, their migration trajectory is found to be more alike: the great majority entered Italy with tourist visa between 1998 and 2005, whereas the distribution of years of arrival in France is smoother, as shown in figure 1.

As for the representativeness of our samples with respect to gender, according to the last censuses[5] used to construct the sample, the percentage of men in the population of Senegalese migrants in France and Italy is respectively 58.2% and 78.3%. The share of women is thus twice lower in the population of Senegalese migrants in Italy, which suggests that Senegalese migration patterns are different in these two countries. Migration flows from Senegal to Italy are indeed relatively recent and anthropological works mostly document male temporary migration. Comparing the gender ratio in our sample to census data, we see that our sample of Senegalese migrants in France is biased in favor of males, due to a high non-response rate of female interviewees. The Italian sample, on the other hand, is well representative with regard to gender since the proportion of male migrant is 77.2%[6]. Most migrants are people of working age, with very few retired individuals.

Interestingly enough, a large majority of migrants in our sample who attended formal school also attended Koranic school at least for a few years, suggesting that both school careers are considered relevant educational choices by Senegalese households. This is especially true for Senegalese in Italy who mostly belong to the Muridiyya and have, for that reason, studied at *daaras* for several years. Last, migrants in our samples mainly come from Dakar, the capital city of Senegal (respectively 48.7% and 56.0% for France and Italy). In the case of France, the next most represented regions of origin are areas located along the Senegal River, namely Saint-Louis, Matam and Tambacounda while Senegalese in Italy come from other regions such as

[5] 1999 census for France, 2008 data for Italy.

[6] Census data that were available at a sufficiently disaggregated level to allow us to draw our sample include information on gender only. We are not able to assess the representativeness of our sample according to age or education for example.

Diourbel, Louga and Thies. Network effects could explain part of these differentiated patterns, with individuals originating from the same place quite naturally choosing to migrate in the same destination countries.

Table 2 presents descriptive statistics on migrants' living conditions in France and Italy. Overall, our data challenge the widespread representation of Senegalese migration flows to France being mainly made up by young and single male workers who share collective rooms in workers' homes[7]. Indeed, more than one third of all migrants interviewed in France actually live with their spouse and/or children, and an additional 26% reside with other relatives or friends. In addition, 71% Senegalese migrants in France live in a flat or a house. In the case of Italy, most migrants are found to co-reside either with their spouse and/or children or with other relatives or friends.

Migrants' Labor Market Performances

Given the age distribution of the migrants in our samples, most of them are either employed or looking for a job (table 3). On average, Senegalese in France are found to have more favourable working conditions than those residing in Italy: their unemployment rate is lower (14.3% against 20.9%) and their employment status less precarious (85.4% of those who are employed are wage earners against 72.6% in Italy, where the proportion of self-employed is as large as 25.5%), whereas among wage workers, the proportion of individuals with a permanent contract is slightly but not significantly lower in the Italian case. On the other hand, migrants' incomes in both sub-samples are much comparable.

Migrant Networks and Network Services

The MIDDAS survey provides detailed information on each migrant's social capital. The questionnaire has been designed to account for different forms of social capital that may affect migrants' behavior in various ways (family networks, home-town associations, etc.). Family networks are measured by the number of relatives living in France or Italy and the strength of the network inferred from the frequency of the migrant's contacts with his relatives. Survey results show that respectively 64.4% and 45% migrants in France and Italy had a relative already living in France (Italy) at the time they migrated. At the time they were interviewed,

[7] In French *foyers*

31.3% (28.5%) declared that other members of their origin household were residing in France (Italy), elsewhere than in their own household. Social capital is also measured by the migrants' participation to social, religious, cultural or even sports associations formed by fellow countrymen or home-town members. Respectively 25% and 48% migrants surveyed in France and Italy belong to at least one association, and 19.7% and 37.1% to a home-town, community-based or Senegal-related organization. In addition, between 14 and 15% migrants participate to a rotating savings and credit association (ROSCA) in both countries. Last, when asked to give the names and details of the persons they trust and regularly interact with (excluding co-residents), migrants in our sample cited two persons on average, most of them being also Senegalese migrants. Mostly made of fellow-countrymen, this close network is not necessarily homogeneous with respect to age, since 15.2% migrants in France and 12.9% in Italy mention one or more persons being at least 10 years older than them.

Table 4 provides insights on the type of financial and non financial support received by migrants from the members of their network. Support to find a job or a place to live is acknowledged by a majority of migrants: respectively 52% and 45% declare that they were helped by their family to find a housing at the time they arrived in France and Italy; and 16% and 8% still relied on their family to find their current housing. In terms of job access, the support provided by other Senegalese has been key for 25% of the migrants at the time they arrived in France, and 16% found their current job thanks to Senegalese acquaintances. The figures are even slightly higher in the case of Italy (27% and 18% respectively). Financial support from the family and members of the Senegalese community in France and Italy in times of hardship is also cited by a majority of our sample migrants: 57% (56%) of those who experienced periods of unemployment in France (Italy) in the past said that they received support from family or other Senegalese. There is thus strong evidence of the importance of the numerous services offered to migrants by their network in our data.

A specific section of the questionnaire was intended at measuring different characteristics of migrant's personal network. Surveyed individuals were asked to list their contacts (up to 20) and their characteristics, such as age, gender, nationality, occupation, family status, as well as information about their relation (how long have they been in contact, how did they meet, how often do they see each other). The number of listed contacts varies between 0 and 15. The

average network size is 2.0 and in both countries, more than 55% surveyed migrants name one or two contacts. 56.1% of the migrants in France, and 41.7% in Italy name either one relative or another migrant originating from the same village or area. In both subsamples, migrants' personal network is entirely Senegalese in almost 70% of the cases. Whatever the country of living, over 80% of the listed contacts live at less than one travel hour, and surveyed migrants meet them in most cases at least once a week. Finally, personal networks are quite homogeneous with respect to age since only 15% of the surveyed individuals name among their contacts a Senegalese significantly (at least 10 years) older than them.

Migrants' Remitting Behavior

As reported in table 6, a remarkable feature of the migration pattern is the high proportion of remittance senders among Senegalese migrants. In the French (Italian) sample, 83.3% (79.1%) of them sent remittances either in cash or in kind to Senegal in the twelve months preceding the survey, a proportion that is slightly higher for men (85.9% in France and 81.1% in Italy) than for women (75.3% in France and 72.5% in Italy).

Remittances sent to the origin household amount to 2,232 euros on average for the pooled sample when restricted to remittance senders only, with a very small and non-significant difference between migrants in France and Italy, which correspond to a contribution of 186 euros per migrant per month. Most migrants use money transfer services to send funds to their origin country, and most of them send funds on a regular and frequent basis.

In order to investigate whether the provision of information and services by the network is correlated with the remittance behavior of our sample migrants, we now turn to a multivariate analysis of the determinants of remittances.

5 Regression Analysis of Remitting Behavior

In this section, we empirically explore the relation between access to migrant networks, the nature of these networks and remittances behavior of Senegalese migrants in France and Italy, using elements of the theoretical discussion conducted above. In particular, building on the intuitions illustrated by the model, we consider successively the probability to remit, jointly with the probability of access to network facilities, and remitted amounts. In the light of our

results, alternative interpretations and classical remittances motives are discussed at the end of this section.

5.1 Variables Definition

A summary table of all variables used with their definition is provided in Appendix. However, the construction of the network variables needs to be detailed. Note that, in line with the model sketched in conclusion of the theoretical discussion, we try to differentiate network services (referring to the b parameter in the model) from network characteristics determining the degree of control exerted on the migrant (α), although we are well aware that both dimensions are intertwined.

Migrant valuation of network: proxies for θ

We assume that θ, though not directly observable can be captured by a set of observable characteristics, denoted X_i in the remaining part of the section. This vector is a set of the migrants' characteristics, that are likely to affect his valuation of network services and attachment to his origin household and country. As emphasized in the theoretical discussion, the model is general enough to encompass any remittance motive, related to either altruistic behavior or exchange models. In particular, in order to assess the respective contribution of remittances motives encountered in the theoretical and empirical literature we include in this vector, together with basic controls for age, gender and migrant's income, the variables described below with their expected sign discussed. Note that most of them are likely to capture different effects and may be interpreted differently depending on which motivation to remit we implicitly refer to: in such cases the expected sign is unclear.

- A dummy for Koranic schooling, meant to proxy for migrant's internalization of solidarity norms, according to models with altruism. Note that this variable could also be correlated with the characteristics of migrant networks, since specific networks can emerge within the sphere of influence of Koranic schools. It could thus also enter the α parameter, as well as θ, without our being able to differentiate these two channels.

- The number of years spent in the destination country, in order to test the widely encountered assumption that altruism fades over time, but that could also capture the fact that

migrants' needs of Senegalese network resources decrease when they have settled abroad for a long time.

- A dummy for migrants' plans to return, and settle in Senegal as well as a dummy that equals one if host language is spoken at home (in migrants' households in France or Italy) to try to capture both the attachment to the origin country and the degree of integration in the destination country.

- Migrants' labor market status, and in particular a dummy for insecure jobs or unemployment that equals one if the migrant has either a fixed-term contract, temporary works, is self-employed or is unemployed at the time of the survey. The underlying intuition is that migrants with insecure jobs or unemployed may be more likely to need network insurance and thus more likely to both have received network help and potentially remit, provided they have a sufficient income.

- The presence of the migrant's spouse or children in his origin household in Senegal, whose support would be paid by remittances (a relevant example of exchange models)

- A dummy that equals one if the migrant attended university, in order to test for another variant of the exchange model, such as investment motive, according to which remittances would repay the origin household its earlier investment in the migrant's education. This variable may however capture other motives that would reverse the expected effect: first, migrants with tertiary education are more likely to integrate successfully into host societies and be less attached to the home country. Second, individuals who migrated to study abroad (in France), and are currently university students are expected to remit less[8].

- A dummy that equals one if the migrant's ancestors are noble, as well as a dummy that equals one if the head of the origin household has local responsibilities, either formal or informal, political or religious[9]. Both variables are included in order to test for variants of exchange motives developed in particular in Sana (2005) where migrant's remittances

[8] In order to try to isolate those effects, a dummy for no or primary education is additionally included in some specifications, but its coefficient is not significantly different from 0, suggesting that less educated migrants are not remitting more than migrants with secondary education (the reference), once controlled for income, which is not what would be expected in investment models.

[9] Among other examples, mayor, imam, marabout, party leader, president of association, member of the village elders' council. Note also that contrary to what one could expect, both dummies are uncorrelated.

buy social capital. Indeed, the value of social capital migrant's remittances can buy is expected to depend on his origin household's status in the community. Both dummies are thus meant to capture higher social status, and thus higher value of social capital likely to be correlated with higher remittances and/or probability to remit. Symmetrically, the opportunity cost not to remit and be at risk of being punished is higher[10].

- Characteristics of the origin household, and in particular a wealth index that corresponds to the first component of a principal component analysis on household's goods, such as fridges, freezers, TV, CD, DVD and radio sets, electric fans, bicycles, motorcycles and cars. Although very likely endogenous, and for lack of information on income, or variability in accommodation occupation status (95% migrants' origin household own their house), this variable is aimed at proxying the household income, which is assumed to be negatively correlated with remittances in models with mutual altruism[11].

- A dummy that equals one if the origin household lives in a rural area, with either less opportunities to have a sufficient alternative income (other than remittances) or a more volatile income.

- The number of other members of the origin household currently in migration, which is assumed to be positively correlated with the probability to remit and remitted amounts in inheritance models (up to a certain number, after which it is found to decrease)[12].

Network services: proxies for b

In order to proxy for the amount of services provided by the migrant network, we first use dummy variables that equal one if the migrant has received help from family members or other (non family) Senegalese to find their first or current job or housing, or during unemployment periods. Information on housing, and in particular on first housing may be preferred since it is somewhat less endogenous, and less concerned by reverse causality issues. We are in particular able to differentiate family and Senegalese non family network, which is particularly interesting

[10]Note that if social status is correlated with the household's own income (other than remittances), and if both the migrant and his household are altruistic, then migrants from noble origin or whose household head is a notable may remit less

[11]The origin household size is controlled for in some specifications but is never found significant.

[12]We chose not to add the squared number of migrants, although suggested by the latter remark, since 70% of the migrants declare no or one other migrant, and over 90% declare less than 3 migrants

when trying to disentangle the network effect we represented in our model from alternative interpretations based on loan repayment models, as developed in section 5.3.

In addition, we use the information we collected on association membership to create a dummy variable that equals one if the surveyed migrant is a member of at least one Senegalese association (whose members are recruited from the Senegalese community in country of destination) or Senegal oriented association (for example promoting the development of local communities in Senegal).

Network control: proxies for α

As mentioned above, we collected original data on each migrants' personal network's characteristics. We have information on the basic socio-economic characteristics (age, gender, nationality, education, occupation) of all individuals listed by surveyed migrants when asked to name their contacts, as well as on the characteristics of their relationship itself (how and when they first met, how often they use to see or contact each other). We use these specific pieces of information to construct measures of the "quality" of network, or "strength" of network links, and as proxies for the degree of control individuals' network may exert on them. In particular, we use the size of the network (the number of listed contacts) and whether the network includes relatives and/or individuals originating from the same community in Senegal. We expect both variables to positively affect remittances by enhancing network monitoring. Indeed, first a larger network is likely to have access to more information and to better detect deviant behavior. Second, relatives and other migrants from the same community are expected to spread information about the migrant likely to directly or indirectly come to be known to his own origin household. Moreover, as suggested by the anthropological literature, age difference between network members is likely to matter: senior migrants are expected to advocate traditional values and encourage younger migrants to transfer. Conversely, if migrants were to collude against their origin households, such a (highly unlikely) behavior may be assumed to be facilitated by their age proximity. For that reason we create a dummy that equals one if among listed network members one is at least ten years older than the surveyed migrant.

In addition, we use in some specifications information on the geographical distance between the migrant and the members of his network (as measured by travel time) and on their contacts

to construct network strength indices by weighting each network member according to his proximity.

Note that all other variables entering regressions commented below are listed and described in Appendix.

5.2 Econometric Specification

5.2.1 Joint probabilities to remit and get access to network

We first estimate the joint probability for a migrant to remit and have access to network services, as suggested by the first part of the model. We estimate a bivariate probit model, where the two dependent variables are the propensity to remit and a dummy variable representing migrants' access to network services. This model seems best suited to the theoretical framework we chose, since we represent the migrants as being faced with a joint choice of an access to network resources associated with a given tax on their income materialized by remittances. Such a specification does not address the issue of causality: both outcomes, access to network and remitting behavior, are simultaneously determined. The cross-sectional data we use do not allow anyway to identify causal effects, as we can find no credible instruments, that is to say variables that would affect the characteristics of the migrants' networks without having any impact on their remitting behavior. The set of regressors, detailed below, is the same in both equations, since, as suggested by the above theoretical discussion, we expect that the same migrants' characteristics, intending to capture their loyalty or attachment to their origin country, would affect both outcomes. The bivariate probit specification allows error terms in both equations to be correlated, and thus allows for possible unobservable characteristics of migrants that would also drive their remitting behavior as well as their network insertion in the destination country.

The two equations of the estimated model write as follows:

$$\begin{cases} t_i = a_1 + a_2\theta_i + a_3 Y_i + a_4 Y_i^2 + \epsilon_{1,i} \\ b_i = a_1 + a_2\theta_i + a_3 Y_i + a_4 Y_i^2 + \epsilon_{2,i} \end{cases}$$

where $\theta_i = f(X_i)$, as discussed above, the valuation of migrant network is assumed to be a function of a set of migrants' observable characteristics. t_i is a dummy equal to 1 if migrant i

sent remittances in cash or kind in Senegal over the past 12 months and b_i is a dummy proxying for individual's access to migrant network services, as defined above, and Y_i is the migrant's income. Both equations are estimated simultaneously and individual error terms $\epsilon_{1,i}$ and $\epsilon_{2,i}$ are allowed to be correlated across both equations.

5.2.2 Remitted amounts

Then, we estimate remitted amounts, according to the second part of the theoretical model. Based on the main predictions of the model, our empirical model for remitted amounts is summarized by the following equation, estimated using OLS and Tobit methods.

$$R_i = a_1 + a_2\theta_i + a_3 b_i + a_4\alpha_i + a_5 b_i * \theta_i + a_6\alpha_i * \theta_i + a_7\alpha_i * b_i + a_8 Y_i + a_9 Y_i^2 + u_i \qquad (5.1)$$

where the dependent variable R_i is the total amount remitted to any household in Senegal, in cash or kind. $\theta_i = f(X_i)$, with X_i being the set of individual characteristics described above assumed to explain the propensity to remit. b_i refer to variables proxying for migrants' access to network services, including indices used as dependent variables in the second equation of the bivariate probit model exposed above. α_i is a vector of variables proxying for network quality and ability to monitor migrants' behavior. As suggested by the theoretical discussion, interactions between those three sets of variables are likely to matter. In order to assess the validity of this intuition, we add interaction terms to the model. In tables 10 to 12 results from OLS and tobit regressions are presented together. Indeed, tobit models are most appropriate in order to take into account the fact that our dependent variable is left-censored (zero amounts), but the interpretation of OLS results when interacting variables is more straightforward. Note in addition that in most cases, both models return very similar coefficients.

Regressions are run on the pooled sample as well as on separate subsamples of migrants residing in France and Italy. A control for the country of residence (a dummy that equals one for migrants residing in Italy) is included in regressions on the pooled sample.

Tables 6 and 7 present the results of bivariate probit estimations of equations 5.1 on the French and Italian subsamples separately, using as dependent variable in the second equation a dummy that equals one when the migrant has been helped by family members or other

Senegalese since his arrival in the host country.

The determinants of remitted amounts are then explored in tables 10 to 14. Table 10 summarizes in particular the results of regressions of remitted amounts on some variables used as controls (and not shown) in the subsequent tables, on pooled, French and Italian samples.

In the next three tables, we explore the interaction between a variable proxying for the migrant's needs of network services (an insecure labor market status) and different network variables, representing both the amount of network resources the migrant can rely on and the degree of network control over the migrant. We indeed expect the interaction term to be significant, since a higher amount of services expected from the network or a higher risk to be punished and deprived of network resources are both likely to constitute stronger incentives to remit for those migrants who need network services most.

In table 12, we explore interactions between the same network variables and a proxy for the migrant's loyalty or attachment to his origin country and solidarity values. We indeed construct a score to proxy for this dimension, based on a principal component analysis using dummies for Koranic schooling, intention to return, the presence of the migrant's children or spouse in the recipient household, dummies for noble origin, notable recipient household head, rural origin household, and a dummy that equals one when the migrant has at most some elementary education.

Table 13 investigates potential substitution effects between proxies for the migrants altruism or loyalty (Koranic education), or insertion in larger networks (Murid), and network access or network ability to monitor migrant's behavior.

Finally, results of interactions between network quality measures and association membership are presented in table 14.

5.3 Results

5.3.1 Propensity to remit and network access

Before commenting our results, the similarity of migrants' average propensity to remit and remitted amounts in France and Italy is worthy of remark. This finding is indeed suggested by descriptive statistics shown in table 6 and confirmed in all our regressions on the pooled sample by the result that the coefficient on the Italian dummy is not significantly different from zero.

Senegalese migrants in France and Italy have similar probabilities to remit and send on average identical amounts, which justifies the relevance of the comparison between these two countries. However, some differences may emerge, as regards *motives* for remitting. Indeed, as illustrated by summary statistics, migrant samples in both countries differ on a number of characteristics such as ethnicity, religious practices or geographical origin. In order to bring to light potential differences in the determinants of remittances between them, we prefer in most cases showing regressions on separate subsamples.

Tables 6 and 7 present marginal effects of listed explanatory variables on the probability to remit (column 1), the probability to have received network help (column 2) and the joint probability to remit and have been helped by migrant networks (column 3), obtained after bivariate probit regressions on the French and Italian subsamples, respectively[13]. Tables 8 and 9 present similar results after substituting the dummy for network help by a dummy that equals one if the migrant is member of an association formed by Senegalese and/or intervening in Senegal.

Note first that in both cases (France and Italy), whatever the variable used as a proxy for network access, the test for the correlation between error terms in both equations (shown at the bottom of tables) is not significant which suggests that the bivariate probit specification allowing such a correlation is not necessary and that separate probit could be run. Such a finding can accept two interpretations: first, the theoretical model presented above assuming that the same individual characteristics drive migrants' choice of a bundle of network access and remittances level may not be an adequate representation of migrants' behavior since those two outcomes do not appear to be as much correlated as the model suggests. A second interpretation that does not challenge the theoretical representation of migrants' behavior could be that the selected explanatory variables that enter both equations constitute good enough proxies for migrants' degree of loyalty or attachment to their origin country and that no unobservable component remains, since unobservable characteristics driving both choices would imply a positive correlation between error terms.

As emphasized above, our choice of such a general specification allows us to investigate different remittance motives through the inclusion of various relevant variable in both equations. A first noticeable finding is the fact that our two outcomes of interest (probability to remit and

[13]Missing values in particular for migrant's income result in slightly reduced size of regression samples

network access) are not correlated with the same variables.

With regard to remittances first, unsurprisingly and consistently with any remittance motive, the results suggest a quadratic relationship between remittances and migrant income, consistently with our theoretical model. However, despite this common feature, significant differences between migrants' remitting behavior in France and Italy come to light. The latter, unlike those in France, are found to be more likely to remit when they have some tertiary education or when the head of their origin household has local responsibilities in the origin community. In addition, the number of years spent in the host country is negatively correlated with the probability to remit for migrants in France, and positively for those in Italy. Note however that migrants in Italy have on average been staying for a shorter period than those in France, as illustrated by figure 1, and did not arrive before 1982, whereas 15% of the migrants in France have been there before this date.

Then, regarding migrants' access to network services, our results bring evidence that the two variables chosen to proxy for migrants' access to network resources capture different use of network services. Indeed, in both countries women are more likely to have been helped either to find a job or a housing. Such a result is consistent with women's status of "associational" migrants brought to light by the empirical analysis of Senegalese migrant networks in Chort (2011). In addition, in the French case, note that migrants with some university education are less likely to have been helped by family members or other Senegalese, whereas those with an insecure status on the labor market have more often been helped. Both findings are not surprising, and suggest that migrants with higher education levels are less likely to be in need of help, may be thanks to their command of the French language, or the protective role of their diploma on the French labor market. In addition, migrants from noble families and whose relatives have local responsibilities in Senegal are less likely to have been helped, after controlling for income.

On the other hand, men and notable dummies are positively correlated with the association membership variable, in France. In Italy, university, time spent in host country, noble and notable dummies are all positively correlated with association membership in Italy. We thus uncover relations between household social status based on traditional (caste) and/or modern (for example local public office) hierarchies in origin country and migrants responsibilities in

the Senegalese diaspora, suggested by the case study provided by Vari-Lavoisier (2010).

Since as noted above, the correlation between error terms in the two equations estimated with a bivariate probit (for the probability to remit and the propensity to have been helped by network) is not significant, we propose an alternative specification whose estimation results are shown in table 16 in Appendix. Indeed, since once controlled for proxy variables for migrants' loyalty there is no residual correlation between the probabilities to remit and network resources dummies, we directly investigate the correlation between remittances and network variables by running a probit model for the probability to remit, using network variables as explanatory variables, and controlling for proxies for loyalty (including all variables shown in previous regression tables). Only coefficients on network variables are shown in table 16: most of them are not significantly different from zero. One exception is the dummy for Senegalese network help which is positively correlated with the propensity to remit for migrants in France. However, this correlation may not be very robust since it is significant only when additional variables controlling for network "quality" are added to the model, which raises a serious concern with the reduced sample size due to missing observations about network composition. Note also that being a member of a Senegal oriented association is associated with a greater probability to remit, but this correlation is not significant when probit regressions are run on country-specific subsamples.

5.3.2 Migrant's valuation of network services, networks and remitted amounts

We now turn to the estimation of models for amounts actually remitted. Tables 10 to 14 show results of OLS and/or tobit regressions for total remitted amounts (in the last 12 months).

In line with our illustrative theoretical model, we interact different measures of either network resources or proxies for network ability to monitor the migrant's behavior and proxy variables for the migrant's valuation of network services. As regards the latter, we focus in particular on migrants' situation on the labor market (having an insecure job, basically no long-term contract, or being unemployed) since it may be considered rather an exogenous characteristic, at least when compared to intention to return or even education. However, we also explore interactions with a loyalty score, that we computed as above explained, allowing in particular for migrants' choices (planning to return and settle in Senegal, having a spouse or

children in Senegal) and including information on Koranic and formal schooling, as well as origin household characteristics (rural location, noble origin or local responsibilities of the household head).

Among network variables proxying for migrants' access to network resources, we consider dummy variables for family help and help provided by other Senegalese (excluding family members). Both are constructed by aggregating information on more specific help to find either a job or a housing, as detailed in Appendix. Note that all results hold in particular when using only information relative to help to find a housing, and in particular migrants' first housing, at their arrival in the country[14]. This latter variant may indeed be less subject to some endogeneity concerns since it is less directly related to migrants' present income than help to find a job, and less affected by reverse causality issues than help received by migrants to get their current housing or job.

As for variables intended to proxy network quality, we use in particular the size of migrants' close social network (the number of persons the migrant named when asked who he was seeing or could rely on), and a measure of the age heterogeneity within this close network. As above mentioned, this latter variable is included to test the assumption based on anthropological material that migrants belonging to older generations could exert a more effective control than same age peers on migrants' behavior.

Before focusing on interactions between the three sets of variables above described, we present in table 10 the results of tobit and OLS regressions without interactions on pooled data (column 1), and on the subsamples of migrants in France and Italy (columns 2 and 3). Again, similar features characterize migrants' remitting behavior in both countries: male migrants, with either a spouse or child in Senegal, and with a higher income are found to remit more. Then, a few findings are country specific: migrants in France with no or few education or some koranic schooling remit more, whereas those with insecure labor market status remit less (though this latter result is significant in the tobit specification only). As for Italy, as already mentioned for the propensity to remit, the number of years spent in the country is positively correlated with remitted amounts. One coefficient only is significant for both countries but with reverse sign: migrants remit less in the French case, and more in the Italian one when the head of the recipient household is a notable.

[14]See table 19 to 21 in Appendix

Heterogeneity in network effects depending on migrants' type: Concerning networks, we find no significant correlation between any network variable and remitted amounts. In order to explore further the relation between network and remittances, as suggested by the theoretical discussion, we add to the model interaction terms between network variables and proxies for migrant's valuation of network services. As explained above, we choose to first proxy migrants' need of network services by their situation on the labor market in the host country.

First, unsurprisingly, results on pooled data (table 11) show that insecure migrants remit less after controlling for income. Interaction terms between network variables and migrants' insecure labor market status are all significant and positive, apart from family help. Insecure migrants with access to non family network remit at least as much, and very likely more than migrants in more secure situations. On the opposite, insecure migrants helped by family members are found to remit less on average.

Tables 17 and 18 in Appendix present the results of the same regressions run separately on the subsamples of migrants in France and Italy. Aside from the positive coefficient on the interaction between Senegalese association membership and insecure work status, driven by Italian migrants, coefficients have comparable magnitude and same signs in both samples, but are less significant due to greater variance.

The positive interaction terms involving Senegalese network help and network size and composition are consistent with some of the intuitions formalized in the simple model sketched above: the most insecure migrants, who are likely to value most network resources, are found to remit more when having benefited from past network services (and thus experienced how valuable network resources could prove), and when their actual and current network is larger or supposedly more likely to influence their behavior.

The negative sign of the coefficient on the interactions with family help variable is somewhat puzzling: however two main interpretations can be put forward based on the observation that the two kinds of network help (provided by family members on the one hand, and other Senegalese on the other hand) seldom overlap. First, such a result suggests that migrants relying on family help are not pioneer migrants: they are very likely new links in the family migration chain. Such households with an ancient tradition of mobility may rely less on remittances sent by one particular migrant, and remittances by senior migrants (or those in a more secure economic

situation) may meet the needs of household members stayed behind. Second, migrants who were helped by family members may be in debt to them and obliged to repay them, limiting thus their financial capacity to remit.

The finding specific to Italy that insecure migrants who are members of a Senegalese association remit more may suggest another interpretation: since the only significant interaction term involves association membership, it could be that Senegalese migrants in Italy obtain direct financial assistance from these associations, that would help them maintain their standards of transfers when being in temporary (financial) difficulties. Note however that these results are obtained once controlled for the migrant's income, which includes labor income and social benefits.

5.3.3 Robustness checks

Proxying migrants' type with a "loyalty" score: In order to explore other aspects of migrants' expected valuation of network resources, we interact a score meant to capture migrants' attachment to their origin household with network variables described above. Results are presented in table 12. Whatever the specification, we observe a positive coefficient on the score variable, consistently with the interpretation suggested by the theoretical model (those migrants valuing most network services remit more). Then, as regards the interaction between this score and network variables, as expected, migrants with a higher loyalty score who were helped by family members are found to remit more. When considering in particular network help to find first housing, the coefficient on the interaction term is positive for family help and negative for Senegalese non family help (table 12, last four columns). Note however that as concerns the latter, the sum of the coefficients on the loyalty score dummy and the interaction term makes about zero: more loyal migrants remit thus as much when they were helped by non family network, and more when helped by family members.

Networks, Murid brotherhood and Koranic education: We investigate in table 13 the possibility of substitution or complementarity between networks and other institutions, likely to ensure migrants' loyalty or monitor their behavior. We focus on two particular institutions, Koranic education and Murid brotherhood, each playing an important part respectively in France and Italy, as emphasized by the summary statistics commented in the previous section.

The first four columns present results of tobit regressions run on the subsample of migrants in France. Besides the usual dummies for family and other Senegalese network help, we consider two additional proxy variables likely to capture networks' ability to monitor migrants' behavior: a dummy that equals one if migrants' close network is made of fellow-countrymen only and a dummy that equals one if the surveyed migrant named at least either a relative or an individual originating from the same community when asked to list his contacts. Apart from the interaction involving family network help, all interaction terms between network variables and the Koranic schooling dummy are negative and significant, whereas both main effects are positive and significant. This finding suggests that Koranic schooling and either Senegalese network help or a network composition likely to allow a more efficient monitoring of migrants' behavior act as substitutes.

As for Italy, we have a similar finding for the interaction between the Murid dummy and the dummy for Senegalese only network, suggesting that being Murid, in a similar way as having some Koranic schooling for migrants in France, is a substitute for being surrounded by (or surrounding oneself with) fellow-countrymen to remind migrants their solidarity duty. The fact that Murids remit less when helped by non family Senegalese may be explained by other obligations implied by their membership to the Murid community. Transfers intended for the religious brotherhood could indeed partially supplant remittances to family. On the other hand, when helped by family, members of the Murid brotherhood are found to remit slightly more than non Murid not helped by family.

Exploring interactions between migrants' type and network control α: Finally, we explore in table 14 the interactions between measures of network quality, using in particular the dummies for Senegalese only network and kin in social network and Senegalese association membership. Results for France and Italy are presented together. Again, as in the previous table, Senegalese only network and the presence of kin in migrants' network seem to act as substitutes of Senegalese association membership. We also consider the interaction between association membership and a measure of the closeness between surveyed migrants and their close contacts[15]. The constructed variable averages categorical variables for the geographical distance (as measured by travel time) between the surveyed migrant and each listed contact. It

[15]See the exact definition of this variable in Appendix

is thus not directly interpretable, but its mean is 6.5 over the whole sample. Results presented in column 5 suggest that those migrants in France who are members of a Senegalese association remit all the more since they live closer to the members of their network.

5.3.4 Other remittances motives

Since the previous comments were especially focused on network variables, we now turn to the interpretation of the other results in light of the different remittance motives discussed in section 3.3.2.

Altruism: As noted above, altruistic motives are accounted for in the model we chose for migrants' propensity to remit since we allow migrants degree of altruism, or more generally, loyalty, to drive both the probability to remit and network access. As already mentioned, the absence of correlation of residuals in the bivariate probit may be interpreted as evidence that the variables we assumed to explain migrants' loyalty (Koranic schooling, time spent abroad among others) are good enough proxies. This very absence of residuals' correlation, added to the fact that the signs of most coefficients differ in both equations (for propensities to remit and have been helped by network members or be member of a Senegalese association) also seems to rule out the idea that we should be concerned by an omitted variable bias, due for example to the internalization of norms by migrants that would lead them to both value more networks and be willing to remit more.

However, all variables suspected to affect migrants' loyalty and willingness to remit are controlled for in all regressions involving remitted amounts.

The negative impact of the time spent in migration on the probability to remit for migrants in France is in line with predictions of altruistic models, while the opposite result in the Italian sample is more puzzling and might be interpreted as an income or wealth effect not fully captured by the income control, or may be driven by differences in the time patterns of migration flows in both countries.

As expected, close family ties with members of the origin household, and in particular, having children living in Senegal is positively and significantly correlated with remitted amounts, whatever the sample used in the regressions (as shown in table 10). However motives other than altruism could explain this finding, since one could consider that remittances compensate the

origin household for taking care of migrants' dependants when he is abroad.

As noted above, the most convincing remarkable prediction of altruistic models requires, to be tested, income measures of both recipients and senders. For lack of information on origin households' income, we use a proxy for the main recipient household's wealth. Although showing sign opposite to what is predicted, our results do not necessary rule out altruistic motives since the positive correlation between remittances and this wealth score could partially reflect information asymmetries and migrants' subjective and biased estimation of remote households' wealth (the more one migrant remit, the more wealthy he estimates his household must be), or else, could be in part a consequence of in kind transfers.

Finally, we find that, once usual variables are controlled for, individuals ranking their origin household among the poorest of the community are more likely to remit (not shown here). However this result holds on the pooled and Italian samples only, and remitted amounts are not found to be affected by this variable.

In conclusion, we cannot exclude that some altruism may drive remitting behaviors, in particular in the Italian case, but altruism cannot satisfactorily account for the correlations involving network variables.

Exchange of services: Some of the variables that could be involved in the altruistic motive may also reflect an exchange, other than the one we described in the theoretical section. In particular, it could indeed be argued that migrants with a spouse or children living in Senegal and especially in their origin household remit more often (not shown) and remit higher amounts (table 10) because their remittances compensate members of their origin household for taking care of their relatives. Again, this motive may be effective but is not likely to drive our results on networks.

Inheritance: In order to control for this specific motive, we created a dummy that equals one if the migrant is the son or daughter of the origin household head (not shown). This variable does not affect the probability to remit nor remitted amounts, which suggests that the inheritance motive plays no significant role. In the Italian case however, our finding that the number of migrants from the same household is positively correlated with the probability to remit (in particular table 9) could be consistent with an inheritance motive, although remitted

amounts are not found to be affected.

Insurance: We collected information on the migrant's perception of shocks having affected the origin household in the last years, and used this information to test for the insurance motive. Remitted amounts are not found to be affected by migrant's perception of negative shocks. Such a perception may of course be biased, since information on shocks affecting the origin household is obtained from the migrant, and not the origin household itself. However, whatever biased this variable may be, we expect the migrant aware of negative income shocks having affected his origin household, be it actually the case or not, to remit higher amounts. We find no evidence of the insurance motive, since neither negative shocks nor positive shocks are found to be correlated with transfers amounts (not shown here). Moreover, a large majority (72%) of migrants who remit do so on a regular basis, which excludes the insurance motive.

Investment and loan repayment: Our data provide no clear evidence of the investment motive, in particular when focusing on the French sub-sample. If remittances were repaying the household for investment in the migrant's education, we would expect migrants with higher levels of education to remit more, which is not what we find. Indeed, remitted amounts are not significantly affected by the university dummy (see table 10). As for the probability to transfer, migrants with a university degree settled in France are not more likely to remit[16]. In the Italian case, the positive correlation between the university dummy and the probability to remit could be in line with the investment motive, and at least suggests that labor migration prevails over education motives.

As for loan repayment, and in particular repayment of travel funds, no evidence emerge, and in particular the variables that we computed using information collected on the origin of funds used to pay migrants' travel are not correlated with the probability to remit nor remitted amounts (not shown).

[16]Note that this could in part be explained by the larger range of motives for migration to France than to Italy, including education, because of the common language. Indeed students who came to France to obtain university degrees may have no financial resource to transfer, which could cancel a possible positive education effect. Both are not easy to differentiate since many migrants arrived in France with a student visa in order to circumvent the restrictive migration legislation.

5.3.5 Discussion

A major issue for the interpretation of the above results, and in particular the interaction terms between insecure job status and network variables would be the correlation between individual labor market outputs (which we use to proxy for the migrant's type) and network variables. Our findings are quite comforting, since once controlling for usual variables, those individuals having insecure jobs or being unemployed are not found to be more likely to be a member of a Senegalese association. On the other hand, having benefited from network services in the past is not correlated with current employment status (results not shown here).

As discussed above, the main challenger to our interpretation is altruism, although in light of the results of the bivariate probit regressions it seems unlikely to drive our results on networks. Furthermore, if networks were only proxying for the strength of migrants' links with their home country and their willingness to remit, then we should observe a positive correlation between remitted amounts and network variables. However, this is not what we find, since the coefficients on network variables are most often not significantly different from zero, in all specifications including interaction terms between insecure status or loyalty score and networks (tables 11 to 12).

Another alternative interpretation would consist in considering that migrants having benefited from past help on the part of network members would remit today in order to repay for this service. First, a striking result is that network variables involving only family members do not significantly affect neither the probability to remit (table 16), nor remitted amounts (table 10). If remittances were driven by a variant of the loan repayment motive, we would expect their amount to be at least as much correlated with services done by family members, as with non-family network services. This is not what we observe in most specifications: we find most often no significant correlations between family help and remittances and positive correlations between Senegalese network help and remittances. If the latter correlation is to be interpreted as loan repayment, it implies that loan by non-family network is paid back to the origin household. Such an interaction where the exchange of services between a migrant and his origin household is mediated by the network is consistent with our the theoretical representation proposed in section 2. Furthermore, although modelled as a one period game, the exchange we represented between the migrant and its household, mediated by the network may of course

generate inter-temporal redistribution.

6 Conclusion

This paper invests a neglected area in the study of the determinants of migrants' remittances to their origin household. Indeed, if one excludes some studies by socio-anthropologists, very few papers have explicitly assessed the role of migrant networks in migrants' remitting behavior.

Our aim in this paper is thus to explore this issue both theoretically and empirically using original data on Senegalese migrants that we collected in France and Italy in 2009.

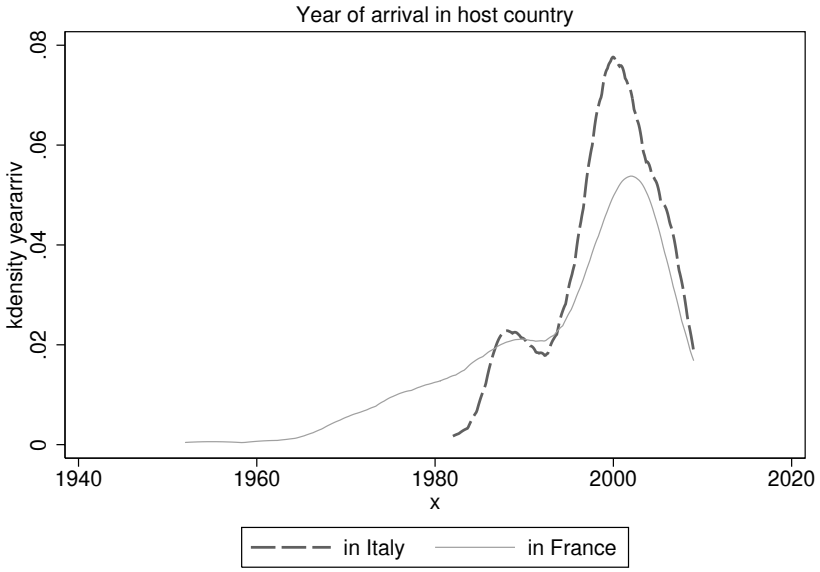
We start with a theoretical discussion of remittances motives and the way migrant networks could fit into existing theoretical models. We then propose a very simple and general model in which we account for the double function of migrant networks as providers of services or assistance to their members, but also as conveyors of information between home and host countries. Thanks to (or because of) this double function, we argue that migrant networks may be used by household members in the home country to control a substantial share of migrants' monetary resources. The classical principal (household) - agent (migrant) model with adverse selection we develop is based on the assumption that the migrant population is heterogeneous, with some migrants valuing more (or being in greater need of) network resources than others. The household's ability to extract migrants' information rent (individual valuation of network services) is assumed to depend in particular on the efficiency of the network in collecting and spreading information and on its ability to punish deviant migrants.

We then proceed exploring whether these predictions are consistent with empirical evidence. To this end, we use an original dataset of 600 Senegalese migrants living either in France or Italy. The results from our multivariate analyses, while not challenging those from previous studies of the determinants of remittances, suggest that network characteristics additionally play a non negligible role in explaining migrants' transfer behavior. Migrants are indeed found to be more likely to remit and remit significantly more when they are expected to value more network services and/or when the efficiency of the network in providing resources and exerting control tends to be higher.

Obviously, one should be very careful to draw strong and definitive conclusions from these findings. The empirical evidence, although fully consistent with our theoretical model, is based

both on a small sample of migrants and on cross-sectional data which makes it difficult to deal adequately with unobserved heterogeneity. However, this article is an original attempt to conceptualize the way family and kinship ties may affect individuals' transfer behavior in the context of a community of migrants. Remittances may indeed be, in part, the price for access to network facilities. Implications in terms of welfare remain however an open question that is left for further investigations.

Figure 1: Migrant's year of arrival: Comparison between migrants in France and Italy



Tables

Table 1: Migrant's main characteristics

	(1) **France** %	(2) **Italy** %	(3) **Total** %	(4) **Diff (1)-(2)**
Male	75.7	77.2	76.4	
Age groups				
18-25 years	11.0	9.6	10.3	
25-35 years	35.7	33.8	34.7	
35-45 years	28.3	39.7	34.1	***
45-60 years	22.0	16.9	19.4	
60-75 years	3.0	0.0	1.5	***
Schooling				
No schooling	18.0	10.9	14.5	**
Elementary school	18.0	12.3	15.1	**
Middle school	16.3	25.2	20.8	***
High school	14.3	18.9	16.6	
Vocational	8.3	6.3	7.3	
University	25.0	26.5	25.8	
Last grade completed				
none	31.7	15.6	23.6	***
CEP	18.3	15.6	17.0	
BEPC	11.3	22.5	17.0	***
CAP/BEP	7.0	8.0	7.5	
Bac/brevet	9.0	17.6	13.3	***
undergraduate	6.3	11.6	9.0	**
university, graduate	16.3	9.3	12.8	***
Type of schooling				
None	2.7	1.7	2.2	
Koranic only	15.3	9.3	12.3	**
Formal only	17.3	11.9	14.6	*
Both koranic and formal	64.7	77.2	70.9	***
Ethnic group				
Wolof	27.3	77.8	52.7	***
Peul	25.0	8.3	16.6	***
Soninke	19.7	0.7	10.1	***
Religion (brotherhood)				
Murid	20.7	66.2	43.5	***
Region of origin				
Dakar	48.7	56.0	52.3	*
Thies	7.7	10.9	9.3	
Diourbel	2.3	11.3	6.8	***
Fatick	1.0	0.7	0.8	
Kaolack	2.7	4.3	3.5	
Louga	0.7	10.3	5.5	***
Saint-Louis	2.0	2.3	2.2	
Matam	6.0	0.7	3.3	***
Ziguinchor	6.0	0.7	3.3	***
Kolda	3.3	0.7	2.0	**
Tambacounda	16.0	0.7	8.3	***
Other country	1.7	0.3	1.0	**
Unknown	2.0	1.3	1.7	
Observations	**300**	**302**	**602**	

Source: MIDDAS Survey, 2009

Table 2: Migrant's situation in host country

	(1) **France**	(2) **Italy**	(3) **Total**	(4) **Diff (1)-(2)**
	In %, except [a]			
Place of residence				
Main cities	72.3	48.0	60.1	***
Type of household				
Alone	39.3	14.2	26.7	***
With spouse and/or children	34.7	35.4	35.1	
With other relatives or friends	26.0	50.3	38.2	***
Household size				
1	39.3	14.2	26.7	***
2	25.3	20.2	22.8	
3	13.3	28.1	20.8	***
4	7.3	20.5	14.0	***
5	5.0	8.6	6.8	
More than 5	9.7	8.3	9.0	
Date of arrival				
Born here or arrived aged under 15	9.0	2.3	5.7	***
Arrived before 1990	21.0	11.6	16.3	***
1990-2000	23.7	32.5	28.1	**
After 2000	46.3	53.6	50.0	*
Type of documents				
Tourist visa	31.4	56.3	44.8	***
Work permit	4.5	5.6	5.1	
Family reunification	14.7	16.0	15.4	
Other visa (including student)	46.9	19.1	31.9	***
Social networks				
Member of at least one Senegal related association	19.7	37.1	28.4	***
Average size of close network[a]	2.1	1.8	2.0	
Older (at least 10 years) individuals in close network	15.2	12.9	14.1	
Observations	**300**	**302**	**602**	

Source: MIDDAS Survey, 2009

Table 3: Migrant's labour status and income

	(1) **France** %	(2) **Italy** %	(3) **Total** %	(4) **Diff (1)-(2)**
Labor status				
Regularly employed	73.0	68.9	70.9	
Occasionally employed	4.0	2.6	3.3	
Unemployed	14.3	20.9	17.6	**
Inactive	6.3	4.0	5.1	**
Other	2.3	3.6	3.0	
Observations	**300**	**302**	**602**	
Employment status (for regularly employed migrants only)				
Unknown	0.5	0.5	0.5	
Unpaid family members	0.5	1.4	0.9	*
Self-employed/Entrepreneur	13.7	25.5	19.4	***
Wage workers	85.4	72.6	79.2	***
Permanent contract	62.6	58.9	60.9	
Fixed-term contract	19.3	16.6	18.0	
Temporary/Interim	11.2	7.3	9.5	
Apprenticeship	2.1	0.7	1.5	
Informal/No contract	4.3	13.9	8.6	
Unknown	0.5	2.6	1.5	
Socio-economic classification				
Lower technical occupations	45.7	50.0	47.8	
Lower services, sales and clerical occupations	28.8	7.2	18.3	***
Intermediate occupations	6.4	3.4	4.9	
Small employers and self-employed occupations	0.0	24.0	11.7	***
Large employers, higher grade professional, managerial occupations	5.5	1.9	3.7	
Other	11.9	10.1	11.0	
Unknown	1.8	3.4	2.6	
Wage categories				
less than 500 euros	3.2	9.1	6.1	*
500 to 1000 euros	22.4	23.6	23.0	
1000 to 1250 euros	26.5	28.8	27.6	
1250 to 1500 euros	17.8	14.9	16.4	
1500 to 2000 euros	17.8	9.1	13.6	*
2000 to 2500 euros	4.6	0.5	2.6	**
2500 to 3000 euros	0.5	2.4	1.4	**
3000 to 5000 euros	2.7	1.0	1.9	
5000 to 8000 euros	0.5	0.0	0.2	
Unknown	4.1	10.6	7.3	
Observations[(a)]	**219**	**208**	**427**	

[(a)] regularly employed migrant only
Source: MIDDAS Survey, 2009

Table 4: Source of financial and non-financial support received by migrants

	(1) **France** %	(2) **Italy** %	(3) **Total** %	(4) **Diff (1)-(2)**
Access to housing				
How did you find a housing upon arrival ?				
No support	11.0	7.3	9.1	
Family	51.7	45.4	48.5	
Senegalese non relatives	14.0	28.1	21.1	***
Friends from host country	5.0	12.9	9.0	***
Other	13.0	4.3	8.6	***
Unknown	5.3	2.0	3.7	**
How did you find your current housing?				
No support	18.0	43.0	30.6	***
Social services	17.7	5.3	11.5	***
Family	16.0	7.6	11.8	***
Senegalese non relatives	18.0	9.6	13.8	***
Friends from host country	16.0	12.3	14.1	
Other	7.3	18.9	13.1	***
Unknown	7.0	3.3	5.1	***
Access to job				
How did you find a job upon arrival? [a]				
No support	13.1	9.5	11.2	
Social services	7.4	7.2	7.3	
Family	13.1	19.3	16.3	
Senegalese non relatives	25.4	26.9	26.2	
Friends from host country	11.9	27.3	19.9	***
Other	19.3	5.7	12.2	***
Unknown	9.8	4.2	6.9	
How did you find your current job? [b]				
No support	31.0	15.9	24.3	***
Social services	13.9	25.8	19.2	***
Family	9.1	4.0	6.8	*
Senegalese non relatives	16.0	17.9	16.9	
Friends from host country	12.8	23.8	17.8	**
Other	13.9	11.9	13.0	
Unknown	3.2	0.7	2.1	
Financial support during unemployment periods				
When unemployed, who did you get support from? [c]				
No support	33.8	28.2	30.8	
Family	39.7	43.6	41.8	
Senegalese non relatives	16.9	12.3	14.4	
Friends from host country	7.4	8.6	8.0	
Other	0.0	6.1	3.3	***
Unknown	2.2	1.2	1.7	
Since unemployed, who have you got support from? [d]				
No support	29.1	35.2	32.5	
Family	30.9	47.9	40.5	
Senegalese non relatives	9.1	4.2	6.3	
Friends from host country	10.9	1.4	5.6	**
Other	5.5	11.3	8.7	
Unknown	14.5	0.0	6.3	**

[a] Among those who ever worked since arrival
[b] Among those regularly employed
[c] Among those currently working, with past unemployment spells
[d] Among those currently unemployed
Source: MIDDAS Survey, 2009

Table 5: Remittances behavior

	France		Italy		Total	
	mean	sd	*mean*	sd	*mean*	sd
Remittances to any household						
- In cash (%)	76.0	(-)	62.3	(-)	69.1	(-)
- Total amount in euros	2277	(2024)	2551	(1983)	2401	(2008)
- In cash or kind (%)	83.3	(-)	79.1	(-)	81.2	(-)
- Total amount in euros	2338	(2063)	2594	(2051)	2454	(2059)
Remittances to the origin household						
- In cash (%)	75.3	(-)	59.9	(-)	67.6	(-)
- Total amount in euros	2117	(1941)	2373	(1930)	2232	(1938)
- In cash or kind (%)	75.3	(-)	60.3	(-)	67.8	(-)
- Total amount in euros	2177	(1979)	2420	(2002)	2285	(1990)
Observations[(a)]	**300**		**302**		**602**	
Frequency of money transfers (%)						
Monthly	50.4	(-)	66.2	(-)	58.3	(-)
Bimonthly	7.4	(-)	4.5	(-)	5.9	(-)
Quarterly	4.2	(-)	0.3	(-)	2.2	(-)
Annually	0.3	(-)	0.3	(-)	0.3	(-)
Irregularly	36.1	(-)	27.5	(-)	31.8	(-)
Unknown	1.6	(-)	1.3	(-)	1.4	(-)
Sending channel (%)						
Money transfer services	66.8	(-)	83.0	(-)	74.9	(-)
Bank	1.3	(-)	3.1	(-)	2.2	(-)
Post office	6.3	(-)	4.2	(-)	5.3	(-)
Hand-to-hand	9.2	(-)	2.4	(-)	5.8	(-)
Fax/telephone/shopkeeper	14.0	(-)	0.3	(-)	7.1	(-)
Other	0.3	(-)	0.8	(-)	0.5	(-)
Unknown	2.1	(-)	6.3	(-)	4.2	(-)
Observations[(b)]	**379**		**382**		**761**	

[(a)] one observation per migrant
[(b)] one observation per recipient in the origin household
[(b)] remitted amounts are computed on the subsample of migrants with non zero transfers
Source: MIDDAS Survey, 2009

Table 6: Bivariate probit regression for the probability to remit in Senegal and get network help: France

Bivariate probit model: Marginal effects Dependent variables: R = remit in Senegal - N = helped by migrant network			
	(1)	(2)	(3)
Migrants in France	Prob($R = 1$)	Prob($N = 1$)	Prob($R = 1 \& N = 1$)
Age	0.011	0.006	0.017
	(0.013)	(0.012)	(0.017)
Age squared	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)
Male (d)	0.066	−0.061*	0.006
	(0.050)	(0.033)	(0.057)
Attended university (d)	−0.076	−0.089	−0.154**
	(0.052)	(0.055)	(0.067)
Total income ($10^3 EUR$)	0.186***	0.081	0.255***
	(0.061)	(0.058)	(0.079)
Total income squared	−0.035	−0.027	−0.059**
	(0.023)	(0.018)	(0.027)
Koranic schooling (d)	0.055	0.029	0.080
	(0.056)	(0.052)	(0.069)
Intention to return (d)	0.060*	0.021	0.077*
	(0.032)	(0.034)	(0.043)
Spouse/child in recipient household (d)	0.016	0.077**	0.089*
	(0.043)	(0.034)	(0.052)
Insecure job or unemployed (d)	−0.025	0.103***	0.075
	(0.036)	(0.036)	(0.048)
Time since arrival	−0.006***	0.005*	−0.001
	(0.002)	(0.003)	(0.003)
Host language at home (d)	−0.019	0.026	0.007
	(0.038)	(0.034)	(0.048)
Noble caste (d)	−0.022	−0.082*	−0.099*
	(0.040)	(0.047)	(0.057)
Origin household head notable (d)	−0.138*	−0.061	−0.184**
	(0.079)	(0.060)	(0.086)
Wealth score recipient household	0.009	−0.006	0.003
	(0.009)	(0.007)	(0.011)
Origin household in rural area (d)	0.076**	−0.022	0.050
	(0.031)	(0.050)	(0.056)
Nb migrants from origin household	0.002	0.009	0.010
	(0.010)	(0.011)	(0.014)
Estimated probability	0.918	0.924	0.846
Likelihood-ratio test of$\rho = 0$: chi2(1) = .527 Prob > chi2 = 0.468			
Observations	252	252	252

Marginal effects; Standard errors in parentheses
(d) for discrete change of dummy variable from 0 to 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: MIDDAS Survey, 2009

Table 7: Bivariate probit regression for the probability to remit in Senegal and get network help: Italy

Bivariate probit model: Marginal effects Dependent variables: R = remit in Senegal - N = helped by migrant network			
	(1)	(2)	(3)
Migrants in Italy	Prob($R = 1$)	Prob($N = 1$)	Prob($R = 1 \& N = 1$)
Age	0.027	−0.053***	−0.017
	(0.017)	(0.016)	(0.021)
Age squared	−0.000	0.001***	0.000
	(0.000)	(0.000)	(0.000)
Male (d)	0.005	−0.076***	−0.055
	(0.050)	(0.027)	(0.054)
Attended university (d)	0.071	−0.040	0.031
	(0.045)	(0.036)	(0.052)
Total income ($10^3 EUR$)	0.217**	0.011	0.207**
	(0.087)	(0.048)	(0.091)
Total income squared	−0.035	−0.016	−0.044
	(0.043)	(0.019)	(0.043)
Koranic schooling (d)	0.002	0.059	0.049
	(0.061)	(0.060)	(0.074)
Intention to return (d)	−0.054	−0.012	−0.058
	(0.051)	(0.029)	(0.053)
Spouse/child in recipient household (d)	0.079*	0.006	0.077
	(0.046)	(0.026)	(0.048)
Insecure job or unemployed (d)	0.017	−0.013	0.006
	(0.048)	(0.027)	(0.050)
Time since arrival	0.009*	−0.000	0.008
	(0.005)	(0.003)	(0.005)
Host language at home (d)	−0.150*	0.038	−0.114
	(0.085)	(0.023)	(0.084)
Noble caste (d)	−0.044	0.040	−0.010
	(0.050)	(0.026)	(0.052)
Origin household head notable (d)	0.076*	0.015	0.082*
	(0.044)	(0.028)	(0.048)
Wealth score recipient household	0.012	−0.005	0.007
	(0.008)	(0.004)	(0.008)
Origin household in rural area (d)	0.017	0.010	0.023
	(0.065)	(0.037)	(0.069)
Nb migrants from origin household	0.021*	0.013	0.029**
	(0.013)	(0.010)	(0.014)
Estimated probability	0.869	0.949	0.832
Likelihood-ratio test of$\rho = 0$: chi2(1) = 1.436 Prob > chi2 = 0.231			
Observations	270	270	270

Marginal effects; Standard errors in parentheses
(d) for discrete change of dummy variable from 0 to 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: MIDDAS Survey, 2009

Table 8: Bivariate probit regression for the probability to remit in Senegal and be member of a Senegalese association: France

Bivariate probit model: Marginal effects Dependent variables: R = remit in Senegal - N = member of Senegalese association			
	(1)	(2)	(3)
Migrants in France	Prob($R = 1$)	Prob($N = 1$)	Prob($R = 1 \& N = 1$)
Age	0.007	0.008	0.009
	(0.013)	(0.016)	(0.015)
Age squared	0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)
Male (d)	0.056	0.133***	0.130***
	(0.047)	(0.045)	(0.043)
Attended university (d)	−0.075	−0.004	−0.010
	(0.050)	(0.058)	(0.055)
Total income ($10^3 EUR$)	0.187***	0.141	0.150*
	(0.059)	(0.092)	(0.090)
Total income squared	−0.033	−0.040	−0.041
	(0.021)	(0.030)	(0.029)
Koranic schooling (d)	0.037	0.083	0.082
	(0.049)	(0.053)	(0.051)
Intention to return (d)	0.057*	0.032	0.036
	(0.031)	(0.050)	(0.049)
Spouse/child in recipient household (d)	0.031	0.124*	0.122*
	(0.038)	(0.066)	(0.064)
Insecure job or unemployed (d)	−0.018	−0.069	−0.067
	(0.035)	(0.049)	(0.047)
Time since arrival	−0.006**	−0.002	−0.003
	(0.002)	(0.004)	(0.003)
Host language at home (d)	−0.027	0.022	0.019
	(0.038)	(0.052)	(0.050)
Noble caste (d)	−0.014	0.037	0.035
	(0.038)	(0.053)	(0.052)
Origin household head notable (d)	−0.136*	0.165**	0.133*
	(0.074)	(0.080)	(0.074)
Wealth score recipient household	0.009	−0.007	−0.006
	(0.009)	(0.009)	(0.009)
Origin household in rural area (d)	0.072**	0.017	0.022
	(0.030)	(0.060)	(0.059)
Nb migrants from origin household	0.000	−0.004	−0.004
	(0.010)	(0.014)	(0.013)
Estimated probability	0.918	0.156	0.150
Likelihood-ratio test of $\rho = 0$: chi2(1) = 1.199 Prob > chi2 = 0.274			
Observations	263	263	263

Marginal effects; Standard errors in parentheses
(d) for discrete change of dummy variable from 0 to 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: MIDDAS Survey, 2009

Table 9: Bivariate probit regression for the probability to remit in Senegal and be member of a Senegalese association: Italy

Bivariate probit model: Marginal effects Dependent variables: R = remit in Senegal - N = member of Senegalese association			
	(1)	(2)	(3)
Migrants in Italy	Prob($R = 1$)	Prob($N = 1$)	Prob($R = 1 \& N = 1$)
Age	0.030*	0.034	0.042
	(0.017)	(0.029)	(0.027)
Age squared	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)
Male (d)	0.004	−0.004	−0.002
	(0.049)	(0.083)	(0.076)
Attended university (d)	0.091**	0.125	0.149**
	(0.041)	(0.077)	(0.074)
Total income ($10^3 EUR$)	0.225***	−0.037	0.050
	(0.084)	(0.123)	(0.115)
Total income squared	−0.041	0.032	0.013
	(0.041)	(0.051)	(0.048)
Koranic schooling (d)	−0.019	0.009	0.001
	(0.056)	(0.097)	(0.090)
Intention to return (d)	−0.074	−0.066	−0.084
	(0.053)	(0.069)	(0.062)
Spouse/child in recipient household (d)	0.075*	−0.036	−0.004
	(0.045)	(0.069)	(0.064)
Insecure job or unemployed (d)	0.006	0.071	0.066
	(0.045)	(0.068)	(0.063)
Time since arrival	0.007	0.011	0.012*
	(0.005)	(0.007)	(0.006)
Host language at home (d)	−0.125	−0.137*	−0.155**
	(0.083)	(0.080)	(0.068)
Noble caste (d)	−0.055	0.162**	0.121*
	(0.050)	(0.071)	(0.066)
Origin household head notable (d)	0.071*	0.208**	0.220***
	(0.043)	(0.086)	(0.083)
Wealth score recipient household	0.009	0.002	0.006
	(0.007)	(0.010)	(0.009)
Origin household in rural area (d)	0.015	0.084	0.082
	(0.063)	(0.110)	(0.103)
Nb migrants from origin household	0.025**	0.016	0.023
	(0.012)	(0.019)	(0.018)
Estimated probability	0.877	0.367	0.323
Likelihood-ratio test of $\rho = 0$: chi2(1) = .008 Prob > chi2 = 0.927			
Observations	267	267	267

Marginal effects; Standard errors in parentheses
(d) for discrete change of dummy variable from 0 to 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: MIDDAS Survey, 2009

Table 10: OLS and tobit regression for remitted amounts

Dependent variable: Total amount remitted in cash and/or kind, to any household	Pooled		France		Italy	
	Tobit	OLS	Tobit	OLS	Tobit	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Age	83.3	39.1	62.8	5.4	96.2	100.8
	(77.5)	(67.7)	(93.5)	(86.3)	(143.3)	(124.7)
Age squared	-0.6	-0.2	-0.1	0.5	-1.1	-1.2
	(1.0)	(0.9)	(1.2)	(1.1)	(1.9)	(1.7)
Male (d)	571.4**	536.9**	573.1*	409.1	580.0	652.3*
	(261.5)	(227.8)	(336.9)	(310.0)	(405.0)	(349.3)
No/elementary schooling (d)	313.5	316.7	740.9**	729.2**	14.4	-30.1
	(257.4)	(226.1)	(339.3)	(316.7)	(382.7)	(333.0)
Attended university (d)	-18.5	-0.5	-130.1	-14.8	234.1	87.5
	(265.0)	(232.2)	(361.7)	(336.1)	(387.6)	(337.4)
Total income (10^3 EUR)	1484.5***	999.4***	1258.3**	759.0	2328.7***	1850.5***
	(375.4)	(324.8)	(514.6)	(465.6)	(588.3)	(511.8)
Total income squared	-137.7	-29.4	81.2	178.8	-610.2**	-503.6**
	(136.6)	(119.8)	(167.0)	(154.0)	(241.4)	(212.4)
Koranic schooling (d)	622.8**	597.9**	1006.0***	866.5***	357.2	416.1
	(281.6)	(247.3)	(348.6)	(323.8)	(457.2)	(399.2)
Intention to return (d)	185.6	163.9	371.8	292.1	-18.8	15.3
	(214.4)	(187.9)	(275.6)	(257.8)	(332.2)	(286.5)
Spouse/child in recipient household (d)	762.8***	660.8***	807.9**	780.1**	680.1**	533.0*
	(244.4)	(216.1)	(344.4)	(327.2)	(336.8)	(293.9)
Insecure job or unemployed (d)	-250.9	-191.0	-201.7	-175.1	20.5	86.7
	(213.9)	(188.0)	(288.0)	(266.9)	(338.5)	(297.3)
Time since arrival	6.2	8.9	-29.6	-16.5	72.0**	52.1*
	(18.3)	(16.1)	(21.6)	(19.8)	(33.3)	(29.3)
Host language at home (d)	2.0	26.7	404.7	314.0	-411.2	-279.6
	(245.0)	(215.4)	(293.2)	(273.7)	(408.2)	(352.7)
Noble caste (d)	29.3	69.3	-74.1	-55.2	-12.1	120.3
	(224.8)	(196.7)	(302.7)	(282.6)	(334.0)	(288.4)
Origin household head notable (d)	134.6	160.5	-822.9**	-585.4*	669.6*	574.7*
	(268.3)	(236.0)	(370.6)	(342.9)	(384.5)	(337.5)
Wealth score recipient household	87.1***	71.3**	112.7**	103.0**	76.3*	55.0
	(33.6)	(30.0)	(53.3)	(50.5)	(42.9)	(38.1)
Origin household in rural area (d)	272.4	157.6	607.1*	427.8	-320.3	-183.3
	(283.4)	(249.8)	(330.4)	(310.7)	(496.5)	(429.4)
Nb migrants from origin household	29.7	17.8	-25.1	-1.8	64.9	23.0
	(58.0)	(51.1)	(73.3)	(68.0)	(88.9)	(77.7)
Family network help (d)	188.2	185.2	68.2	91.6	326.8	270.7
	(238.7)	(210.2)	(306.9)	(288.2)	(371.0)	(323.8)
Senegalese network help (d)	79.7	26.7	447.3	256.1	-160.5	-119.5
	(220.6)	(194.2)	(288.0)	(268.6)	(334.8)	(290.5)
Member of Senegalese association (d)	171.1	93.6	104.9	94.4	108.5	46.2
	(238.9)	(210.8)	(359.4)	(339.0)	(323.4)	(282.8)
Resident in Italy	17.1	88.1				
	(234.0)	(205.5)				
Constant	-3560.9**	-1902.8	-3881.0**	-1768.7	-3893.3	-3032.1
	(1546.0)	(1338.7)	(1918.4)	(1743.3)	(2779.6)	(2416.9)
Observations	432	432	214	214	218	218

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 11: Insecure job status interacted with network variables: All migrants

All migrants - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-672.9***	-508.1**	-804.7***	-609.4**	296.9	210.7	-783.7**	-677.1**	-231.7	-243.8
	(242.6)	(207.8)	(295.0)	(254.6)	(344.5)	(299.8)	(305.9)	(264.3)	(249.6)	(219.3)
Member of Senegalese association (d)	-73.6	-53.4								
	(318.2)	(278.1)								
Insecure job or unemployed (d)* Member of Senegalese association (d)	938.9**	680.2*								
	(445.1)	(386.7)								
Senegalese[(1)] network help (d)			-427.4	-400.3						
			(291.1)	(256.0)						
Insecure job or unemployed (d)* Senegalese[(1)] network help (d)			931.8**	734.2**						
			(417.8)	(362.9)						
Family network help (d)					586.7**	508.6*				
					(297.6)	(260.2)				
Insecure job or unemployed (d)* Family network help (d)					-994.2**	-768.4**				
					(426.3)	(369.5)				
Size of social network							-109.0	-92.6		
							(68.1)	(58.8)		
Insecure job or unemployed (d)* Size of social network							189.3*	174.2*		
							(108.4)	(93.3)		
Older Senegalese in own network (d)									-135.8	-258.8
									(421.4)	(376.1)
Insecure job or unemployed (d)* Older Senegalese in own network (d)									1000.8	1074.2*
									(635.1)	(560.0)
Constant	-5391.7***	-2888.2**	-4228.0***	-2320.9*	-5616.2***	-3202.0**	-5109.1***	-2712.3**	-6713.7***	-4241.4***
	(1422.6)	(1189.3)	(1534.1)	(1312.7)	(1495.3)	(1258.7)	(1410.0)	(1183.2)	(1670.4)	(1425.8)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	478	478	445	445	461	461	484	484	353	353

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 12: Loyalty score interacted with network variables: All migrants

All migrants - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Loyalty score	255.5**	192.5**	262.5**	194.8*	128.2	86.0	359.1***	294.9***	103.6	58.6
	(103.6)	(87.7)	(132.4)	(113.4)	(140.1)	(119.7)	(105.4)	(89.7)	(121.3)	(103.6)
Member of Senegalese association (d)	409.5*	313.1								
	(239.2)	(202.4)								
Loyalty score* Member of Senegalese association (d)	-21.9	27.1								
	(193.2)	(164.9)								
Helped by Senegalese(1) network (d)			77.4	14.8						
			(215.1)	(183.5)						
Loyalty score* Helped by Senegalese(1) network (d)			-72.8	-13.9						
			(170.2)	(145.9)						
Helped by family network (d)					237.6	222.4				
					(234.2)	(199.7)				
Loyalty score* Helped by family network (d)					266.2	251.0*				
					(172.7)	(147.6)				
Helped by Senegalese(1) to find first housing (d)							78.8	32.7		
							(271.6)	(231.3)		
Loyalty score* Helped by Senegalese(1) to find first housing (d)							-341.4*	-302.5*		
							(198.1)	(169.4)		
Helped by family to find first housing (d)									-201.3	-170.5
									(224.1)	(190.3)
Loyalty score* Helped by family to find first housing (d)									359.9**	336.0**
									(169.2)	(144.1)
Constant	-5671.8***	-2920.0**	-4640.5***	-2425.4*	-5471.8***	-2888.2**	-5551.9***	-2959.3**	-5251.8***	-2697.6**
	(1398.8)	(1135.6)	(1486.9)	(1234.8)	(1453.6)	(1191.3)	(1434.1)	(1173.2)	(1463.1)	(1198.5)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	484	484	450	450	466	466	477	477	477	477

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
(1) other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 13: Koranic schooling and Murid brotherhood interacted with network variables: Italy

Tobit model - Dependent variable: Total amount remitted in cash and/or kind, to any household	France (1)	(2)	(3)	(4)	Italy (5)	(6)	(7)
Koranic schooling (d)	1578.6***	976.1	1912.3***	1780.2***			
	(566.9)	(610.8)	(642.6)	(552.5)			
Helped by Senegalese(1) network (d)	1470.7**				903.8*		
	(658.2)				(534.3)		
Koranic schooling (d)* Helped by Senegalese(1) network (d)	-1506.0**						
	(734.6)						
Helped by family network (d)		320.2				-483.5	
		(683.5)				(543.6)	
Koranic schooling (d)* Helped by family network (d)		-405.2					
		(760.2)					
Senegalese only network (d)			1431.8**				1243.5**
			(687.0)				(585.6)
Koranic schooling (d)* Senegalese only network (d)			-1371.7*				
			(758.1)				
Kin in social network (d)				1425.4**			
				(630.9)			
Koranic schooling (d)* Kin in social network (d)				-1416.2**			
				(707.6)			
Murid (d)					735.1	-886.5*	1424.3**
					(445.6)	(484.2)	(589.8)
Murid (d)* Helped by Senegalese(1) network (d)					-1741.2***		
					(639.4)		
Murid (d)* Helped by family network (d)						1624.4**	
						(645.0)	
Murid (d)* Senegalese only network (d)							-1763.1**
							(733.2)
Constant	-5928.1***	-5848.2***	-8485.8***	-8729.7***	-3624.4	-5989.8**	-5510.9**
	(2040.5)	(1982.9)	(1893.3)	(1894.8)	(2683.0)	(2552.5)	(2677.0)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	224	236	226	226	227	231	208

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
(1) other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 14: Network quality variables interacted with association membership: France and Italy

Tobit model - Dependent variable: Total amount remitted in cash and/or kind, to any household	France (1)	Italy (2)	France (3)	Italy (4)	France (5)	Italy (6)
Member of Senegalese association (d)	2052.6**	1406.0**	1466.5**	836.6*	-2220.5*	-1081.1
	(793.8)	(606.4)	(566.5)	(437.3)	(1340.5)	(1313.9)
Senegalese only network (d)	452.9	962.5**				
	(315.4)	(479.1)				
Member of Senegalese association (d)* Senegalese only network (d)	-1832.4**	-1631.9**				
	(856.2)	(702.9)				
Kin in social network (d)			419.5	785.1*		
			(294.7)	(416.3)		
Member of Senegalese association (d)* Kin in social network (d)			-1455.6**	-1332.9**		
			(706.2)	(632.7)		
Average distance to social network					-130.5	-145.0
					(91.9)	(114.3)
Member of Senegalese association (d)* Average distance to social network					431.7**	208.4
					(203.9)	(194.7)
Constant	-6837.7***	-5935.1**	-7678.6***	-6532.2**	-6993.7***	-4545.4*
	(1813.3)	(2651.4)	(1841.4)	(2673.9)	(1970.4)	(2737.2)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	220	203	220	203	207	199

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
(d) for dummy variable
Source: MIDDAS Survey, 2009

Appendix

Table 15: List of variables

Variable	**Definition**
Attended university (d)	Equal to one if attended university; 0 otherwise
Log of total income	Log of migrant's monthly income, including social benefits
Koranic schooling (d)	Equal to one if attended Koranic schools; 0 otherwise
Intention to return (d)	Equal to one if plans to return to Senegal; 0 otherwise
Spouse/child in recipient household (d)	Equal to one if migrant's own spouse and/or children live in main recipient household
Insecure job or unemployed (d)	Equal to one if temporary work, fixed-term contract or self-employed; 0 otherwise
Time since arrival	Number of years since arrival in the country of destination (France or Italy)
Host language at home (d)	Equal to one if host country language spoken at home; 0 otherwise
Noble caste (d)	Equal to one if migrant's ancestors are noble; 0 otherwise
Origin household head notable (d)	Equal to one if the head of migrant's origin household has local responsibilities; 0 otherwise
Wealth score recipient household	Obtained by a principal component analysis on a set of durable and equipment goods possessed by the household receiving largest migrant's transfers
Origin household in rural area (d)	Equal to one if migrant's origin household is located in rural area
Nb migrants from origin household	Number of other migrants originated from the same household
Helped by family network (d)	Equal to one if was helped by family members in the destination country to find a job or housing, or during unemployment periods; 0 otherwise
Helped by Senegalese network (d)	Equal to one if was helped by non family Senegalese in the destination country to find a job or housing, or during unemployment periods; 0 otherwise
Member of Senegalese association (d)	Equal to one if member of a Senegalese or Senegal oriented association; 0 otherwise
Non member of existent village association (d)	Equal to one if there is an association of migrants from his origin village but not member; 0 otherwise
Size of social network	Number of listed contacts
Kin in social network (d)	Equal to one if family members or co-villagers among listed contacts
Older Senegalese in own network (d)	Equal to one if one or more listed contact is at least ten years older; 0 otherwise
Loyalty score	Obtained by a principal component analysis on dummies for koranic schooling, intention to return, child or spouse in recipient household, noble, notable, rural household, no or elementary education
Senegalese only network (d)	Equal to one if all listed contacts are Senegalese; 0 otherwise

Table 16: Probit regression for the probability to remit in Senegal

Probit model - Dependent variable: Probability to remit in cash and/or kind in Senegal	Pooled		France		Italy	
	(1)	(2)	(3)	(4)	(5)	(6)
Helped by family network (d)	−0.070	0.050	−0.604*	−0.633	0.133	0.495
	(0.189)	(0.226)	(0.357)	(0.412)	(0.305)	(0.398)
Helped by Senegalese network (d)	0.093	0.281	0.417	0.866**	−0.107	0.161
	(0.176)	(0.209)	(0.312)	(0.394)	(0.262)	(0.333)
Member of Senegalese association (d)	0.271	0.378	0.847	0.869	−0.048	0.154
	(0.211)	(0.249)	(0.644)	(0.771)	(0.282)	(0.345)
Non member of existent village association (d)	0.014	0.110	0.323	0.537	−0.200	−0.428
	(0.213)	(0.249)	(0.390)	(0.483)	(0.314)	(0.396)
Resident in Italy	−0.171	−0.166				
	(0.183)	(0.221)				
Size of social network		−0.071		−0.006		−0.008
		(0.051)		(0.091)		(0.095)
Kin in social network (d)		0.038		0.108		−0.171
		(0.190)		(0.334)		(0.297)
K_oldernetw		0.322		0.464		0.006
		(0.260)		(0.467)		(0.398)
Constant	−1.193	−1.337	−3.751*	−5.441**	−0.347	0.221
	(1.244)	(1.480)	(2.049)	(2.615)	(2.087)	(2.625)
Controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	479	395	227	193	252	202

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 17: Insecure job status interacted with network variables: migrants in France

Migrants in France - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-620.8*	-529.1*	-1462.7***	-1113.0***	266.9	-40.4	-896.6**	-872.5**	-405.8	-470.2
	(315.3)	(285.6)	(416.8)	(375.9)	(518.0)	(481.7)	(403.3)	(369.1)	(324.0)	(298.8)
Member of Senegalese association (d)	198.0	218.0								
	(446.4)	(411.5)								
Insecure job or unemployed (d)* Member of Senegalese association (d)	510.3	391.8								
	(726.2)	(674.3)								
Senegalese[(1)] network help (d)			-374.3	-424.4						
			(366.4)	(341.0)						
Insecure job or unemployed (d)* Senegalese[(1)] network help (d)			1777.7***	1357.8**						
			(569.1)	(523.7)						
Family network help (d)					228.9	177.1				
					(376.3)	(350.8)				
Insecure job or unemployed (d)* Family network help (d)					-1006.3	-526.4				
					(621.6)	(576.0)				
Size of social network							-90.3	-94.0		
							(79.5)	(72.9)		
Insecure job or unemployed (d)* Size of social network							175.9	191.8		
							(131.2)	(120.5)		
Older Senegalese in own network (d)									-98.9	-244.2
									(481.6)	(454.1)
Insecure job or unemployed (d)* Older Senegalese in own network (d)									742.5	970.8
									(785.3)	(724.1)
Constant	-5029.0***	-2746.4*	-4470.7**	-1983.3	-5555.0***	-3272.6*	-4814.8***	-2472.0	-7747.9***	-4813.9***
	(1832.4)	(1625.4)	(2035.6)	(1821.1)	(1957.1)	(1762.2)	(1823.5)	(1620.8)	(2061.4)	(1829.4)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	248	248	220	220	232	232	250	250	187	187

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 18: Insecure job status interacted with network variables: migrants in Italy

Migrants in Italy - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-557.7	-371.0	-265.3	-194.4	731.5	678.6*	-507.2	-334.0	3.8	5.1
	(394.5)	(331.6)	(437.7)	(378.0)	(470.6)	(402.5)	(501.4)	(423.1)	(392.1)	(348.3)
Member of Senegalese association (d)	-500.9	-397.1								
	(458.9)	(394.9)								
Insecure job or unemployed (d)* Member of Senegalese association (d)	1179.5*	835.9								
	(614.1)	(521.4)								
Senegalese[(1)] network help (d)			-303.3	-265.4						
			(464.6)	(404.5)						
Insecure job or unemployed (d)* Senegalese[(1)] network help (d)			204.7	230.6						
			(613.3)	(527.2)						
Family network help (d)					1245.1**	1079.5**				
					(491.0)	(423.4)				
Insecure job or unemployed (d)* Family network help (d)					-1418.7**	-1257.6**				
					(609.8)	(518.3)				
Size of social network							-97.7	-49.8		
							(133.3)	(112.2)		
Insecure job or unemployed (d)* Size of social network							206.1	138.1		
							(193.2)	(160.9)		
Older Senegalese in own network (d)									-149.2	-243.9
									(737.7)	(660.2)
Insecure job or unemployed (d)* Older Senegalese in own network (d)									1165.2	1150.0
									(1037.2)	(918.7)
Constant	-7259.2***	-3988.9*	-4276.1	-3124.9	-7222.6***	-4480.1**	-6609.3***	-3746.6*	-4586.3	-2451.1
	(2538.1)	(2034.8)	(2677.8)	(2279.7)	(2501.3)	(2042.1)	(2483.5)	(2007.0)	(2934.5)	(2516.8)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	230	230	225	225	229	229	234	234	166	166

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 19: Insecure job status interacted with network variables: All migrants

All migrants - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-672.9***	-508.1**	-804.7***	-609.4**	296.9	210.7	-578.6**	-470.5**	251.5	241.3
	(242.6)	(207.8)	(295.0)	(254.6)	(344.5)	(299.8)	(233.8)	(201.7)	(293.7)	(255.5)
Member of Senegalese association (d)	-73.6	-53.4								
	(318.2)	(278.1)								
Insecure job or unemployed (d)* Member of Senegalese association (d)	938.9**	680.2*								
	(445.1)	(386.7)								
Helped by Senegalese[(1)] network (d)			-427.4	-400.3						
			(291.1)	(256.0)						
Insecure job or unemployed (d)* Helped by Senegalese[(1)] network (d)			931.8**	734.2**						
			(417.8)	(362.9)						
Helped by family network (d)					586.7**	508.6*				
					(297.6)	(260.2)				
Insecure job or unemployed (d)* Helped by family network (d)					-994.2**	-768.4**				
					(426.3)	(369.5)				
Helped by Senegalese[(1)] to find first housing (d)							-613.0*	-579.1*		
							(342.2)	(300.8)		
Insecure job or unemployed (d)* Helped by Senegalese[(1)] to find first housing (d)							1122.1**	961.0**		
							(497.2)	(430.9)		
Helped by family to find first housing (d)									265.5	243.2
									(292.5)	(256.1)
Insecure job or unemployed (d)* Helped by family to find first housing (d)									-1090.0***	-928.9***
									(404.8)	(349.5)
Constant	-5391.7***	-2888.2**	-4228.0***	-2320.9*	-5616.2***	-3202.0**	-5470.8***	-3119.8**	-5368.1***	-3044.8**
	(1422.6)	(1189.3)	(1534.1)	(1312.7)	(1495.3)	(1258.7)	(1475.0)	(1243.1)	(1503.1)	(1268.4)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	478	478	445	445	461	461	471	471	471	471

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 20: Insecure job status interacted with network variables: migrants in France

Migrants in France - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-620.8*	-529.1*	-1462.7***	-1113.0***	266.9	-40.4	-584.3*	-465.5	149.1	-18.3
	(315.3)	(285.6)	(416.8)	(375.9)	(518.0)	(481.7)	(315.5)	(287.5)	(423.3)	(391.9)
Member of Senegalese association (d)	198.0	218.0								
	(446.4)	(411.5)								
Insecure job or unemployed (d)*	510.3	391.8								
Member of Senegalese association (d)	(726.2)	(674.3)								
Helped by Senegalese[(1)] network (d)			-374.3	-424.4						
			(366.4)	(341.0)						
Insecure job or unemployed (d)*			1777.7***	1357.8**						
Helped by Senegalese[(1)] network (d)			(569.1)	(523.7)						
Helped by family network (d)					228.9	177.1				
					(376.3)	(350.8)				
Insecure job or unemployed (d)*					-1006.3	-526.4				
Helped by family network (d)					(621.6)	(576.0)				
Helped by Senegalese[(1)] to find first housing (d)							-365.6	-341.5		
							(484.3)	(452.9)		
Insecure job or unemployed (d)*							591.5	243.7		
Helped by Senegalese[(1)] to find first housing (d)							(782.7)	(726.4)		
Helped by family to find first housing (d)									-37.1	-59.9
									(366.9)	(341.9)
Insecure job or unemployed (d)*									-1043.2*	-641.3
Helped by family to find first housing (d)									(574.8)	(528.2)
Constant	-5029.0***	-2746.4*	-4470.7**	-1983.3	-5555.0***	-3272.6*	-5886.8***	-3225.1*	-5624.7***	-3081.8*
	(1832.4)	(1625.4)	(2035.6)	(1821.1)	(1957.1)	(1762.2)	(1966.5)	(1742.4)	(1964.6)	(1747.2)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	248	248	220	220	232	232	239	239	239	239

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 21: Insecure job status interacted with network variables: migrants in Italy

Migrants in Italy - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Insecure job or unemployed (d)	-557.7	-371.0	-265.3	-194.4	731.5	678.6*	-524.3	-444.2	686.9*	689.4*
	(394.5)	(331.6)	(437.7)	(378.0)	(470.6)	(402.5)	(357.6)	(304.4)	(413.1)	(355.1)
Member of Senegalese association (d)	-500.9	-397.1								
	(458.9)	(394.9)								
Insecure job or unemployed (d)*	1179.5*	835.9								
Member of Senegalese association (d)	(614.1)	(521.4)								
Helped by Senegalese[(1)] network (d)			-303.3	-265.4						
			(464.6)	(404.5)						
Insecure job or unemployed (d)*			204.7	230.6						
Helped by Senegalese[(1)] network (d)			(613.3)	(527.2)						
Helped by family network (d)					1245.1**	1079.5**				
					(491.0)	(423.4)				
Insecure job or unemployed (d)*					-1418.7**	-1257.6**				
Helped by family network (d)					(609.8)	(518.3)				
Helped by Senegalese[(1)] to find first housing (d)							-902.0*	-842.7**		
							(490.9)	(424.2)		
Insecure job or unemployed (d)*							1521.4**	1409.5**		
Helped by Senegalese[(1)] to find first housing (d)							(663.0)	(564.2)		
Helped by family to find first housing (d)									916.2*	853.3**
									(495.2)	(426.9)
Insecure job or unemployed (d)*									-1636.1***	-1526.8***
Helped by family to find first housing (d)									(588.4)	(500.7)
Constant	-7259.2***	-3988.9*	-4276.1	-3124.9	-7222.6***	-4480.1**	-5383.3**	-3170.7	-6440.2**	-4104.0*
	(2538.1)	(2034.8)	(2677.8)	(2279.7)	(2501.3)	(2042.1)	(2508.3)	(2060.3)	(2549.4)	(2105.0)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	230	230	225	225	229	229	232	232	232	232

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 22: Loyalty score interacted with network variables: France

Migrants in France - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Loyalty score	314.9**	272.4**	300.8*	250.8	85.0	60.1	362.0***	314.8***	93.1	52.8
	(130.8)	(115.7)	(175.3)	(157.0)	(192.2)	(173.2)	(134.0)	(118.9)	(164.3)	(147.1)
Member of Senegalese association (d)	339.7	361.4								
	(377.3)	(333.2)								
Loyalty score* Member of Senegalese association (d)	-73.4 (268.4)	-59.9 (238.8)								
Helped by Senegalese[(1)] network (d)			378.3	157.2						
			(299.2)	(266.4)						
Loyalty score* Helped by Senegalese[(1)] network (d)			-60.2 (215.1)	-1.0 (193.0)						
Helped by family network (d)					8.1	104.2				
					(312.0)	(280.2)				
Loyalty score* Helped by family network (d)					387.0* (221.6)	373.0* (199.4)				
Helped by Senegalese[(1)] to find first housing (d)							177.5	17.8		
							(412.1)	(369.8)		
Loyalty score* Helped by Senegalese[(1)] to find first housing (d)							-127.5 (285.7)	-131.5 (257.3)		
Helped by family to find first housing (d)									-495.7*	-343.8
									(294.1)	(261.4)
Loyalty score* Helped by family to find first housing (d)									472.7** (213.9)	446.4** (190.6)
Constant	-5068.6***	-2556.8*	-4729.0**	-1973.3	-4921.2***	-2472.6	-5485.8***	-2716.2*	-5034.1***	-2463.6
	(1814.2)	(1537.6)	(1976.0)	(1674.3)	(1882.0)	(1613.7)	(1919.6)	(1624.4)	(1895.0)	(1609.7)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	252	252	223	223	235	235	243	243	243	243

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
[(1)] other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

Table 23: Loyalty score interacted with network variables: Italy

Migrants in Italy - Dependent variable: Total amount remitted in cash and/or kind, to any household	(1) Tobit	(2) OLS	(3) Tobit	(4) OLS	(5) Tobit	(6) OLS	(7) Tobit	(8) OLS	(9) Tobit	(10) OLS
Loyalty score	125.1	38.2	223.1	135.2	229.4	148.5	336.0*	260.0*	129.1	74.3
	(181.3)	(147.7)	(206.1)	(172.1)	(210.5)	(172.7)	(181.3)	(149.7)	(186.0)	(153.6)
Member of Senegalese association (d)	283.6	164.3								
	(318.0)	(261.7)								
Loyalty score* Member of Senegalese association (d)	121.2	192.8								
	(291.9)	(241.8)								
Helped by Senegalese(1) network (d)			-146.9	-82.7						
			(319.3)	(264.8)						
Loyalty score* Helped by Senegalese(1) network (d)			-106.3	-42.2						
			(274.3)	(229.1)						
Helped by family network (d)					523.8	391.2				
					(366.4)	(302.4)				
Loyalty score* Helped by family network (d)					-20.1	-6.2				
					(284.4)	(234.6)				
Helped by Senegalese(1) to find first housing (d)							75.7	77.0		
							(371.8)	(306.5)		
Loyalty score* Helped by Senegalese(1) to find first housing (d)							-439.1	-383.0		
							(289.3)	(239.1)		
Helped by family to find first housing (d)									126.6	52.0
									(369.9)	(305.5)
Loyalty score* Helped by family to find first housing (d)									111.5	110.8
									(280.1)	(232.2)
Constant	-6699.2***	-3639.3*	-4052.8	-2746.8	-6632.7**	-3878.3*	-5223.9**	-2976.2	-5627.4**	-3181.3
	(2500.5)	(1957.4)	(2597.5)	(2150.9)	(2557.5)	(2035.1)	(2471.2)	(1978.3)	(2578.7)	(2072.2)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	232	232	227	227	231	231	234	234	234	234

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Included controls: Age, gender, education dummies, and all other variables shown in table XX
(1) other than family members
(d) for dummy variable
Source: MIDDAS Survey, 2009

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