

### **Colombian International Migration: The Impact of Information Networks on Migration**

### **Migración internacional colombiana: el impacto de las redes de información de migración**

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#### ABSTRACT

Data from the Latin American Migration Project (LAMP) collected in Colombia between 2008 and 2015 were used to establish the scarcely studied relationship between social networks and the destinations where Colombians migrate. A logistic regression was employed to predict these migratory destinations. The contribution of this research is that it tests whether social networks tied to a destination are associated with the likelihood to migrate there. The findings support the Social Network Theory and offer an improved measure of social networks. It is shown that in migration gender matters since flow and interactions vary between men and women. There is evidence that men receive a greater benefit from social networks.

*Keywords:* 1. migration, 2. social networks, 3. gender, 4. Colombia, 5. United States.

#### RESUMEN

Datos del Proyecto sobre Migración Latinoamericana (LAMP) recopilados en Colombia entre 2008 y 2015 fueron utilizados para establecer la poco estudiada relación entre las redes sociales y los destinos a donde migran los colombianos. Se empleó una regresión logística para predecir dichos destinos migratorios. El aporte de esta investigación es poner a prueba si las redes sociales vinculadas a un destino están asociadas con la probabilidad de migración a ese destino. Los hallazgos respaldan la Teoría de las Redes Sociales y ofrecen una medida mejorada de las mismas. Se muestra que en las migraciones el género resulta relevante ya que los flujos y las interacciones difieren entre hombres y mujeres. Se evidencia que los hombres se ven más beneficiados por las redes sociales.

*Palabras clave:* 1. migración, 2. redes sociales, 3. género, 4. Colombia, 5. Estados Unidos.

Date received: October 12, 2020

Date accepted: October 29, 2021

Published online: December 30, 2022

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## INTRODUCTION

This research focuses on Colombian migration to Latin America, Spain, and the United States. The primary goal of this study is to establish the linkages between the social networks of Colombian migrants and their destinations. The data used is from the Latin American Migration Project collected in Colombia between 2008 and 2015. Many studies establish the importance of social networks in facilitating international migration, but less is known about the Colombian migration process. Extensive literature on immigrants from other countries it's been used to establish several hypotheses about social networks and Colombian migration.

There is extensive literature about Mexican migration to the United States (Contreras, 2014; Durand & Massey, 2019; Flippen & Parrado, 2015; Massey, Alarcon, Durand, & González, 1990; Nobles & McKelvey, 2015; Parrado & Ocampo, 2019). Much of the literature on Mexican migrants focuses on the impact of social networks in facilitating migration and adaptation (Aguilera & Massey, 2003; Curran & Rivero-Fuentes, 2003; Massey, Alarcon, Durand, & González, 1990). Few studies focus on other Latin American migrants (Cerrutti & Gaudio, 2010; Côté, Jensen, Roth, & Way, 2015; Donato & Sisk, 2015; Donato, 2010). Although there are studies about Colombian migration (Guarnizo, Sanchez, & Roach, 1999; Lamela, Pérez-Caramés, & Fernández-Suárez, 2012; Madrigal, 2013; Madrigal & Mayadas, 2006; Mejía-Ochoa, 2018; Silva & Massey, 2014), few address the role of social networks in facilitating international migration (Silva & Massey, 2014).

After the beginning of the second half of the 20th century, Colombian outmigration gained importance (Mejía Ochoa, 2012; Lamela, Pérez-Caramés, & Fernández-Suárez, 2012). Venezuela was largely the main destination of Colombians from 1940 through 2011 (Lamela, Pérez-Caramés, & Fernández-Suárez, 2012). It is estimated that 5 million people left Colombia in 2003 (Guarnizo, 2006). During the 1980s and 1990s, migration to the United States and Spain grew (Sperling, 2014). In 1996, about 8% of the Colombian population lived abroad (Guarnizo, Sanchez, & Roach, 1999). By 1997, about 4% of Colombians lived in the United States (Guarnizo & Díaz, 1999). It is reported that the largest Colombian population is in the United States, followed by Venezuela and Ecuador (Guarnizo, Sanchez, & Roach, 1999). A more recent study reports that the United States and Spain are the top destinations for Colombian migrants (Lamela, Pérez-Caramés, & Fernández-Suárez, 2012). This research first addresses who in Colombia decides to migrate and their decision on the country of destination.

### *Social Networks and Social Capital*

According to Flores-Yeffal (2013), social capital is the “tangible and intangible resources provided by relatives, friends, and paisanos to facilitate migration, settlement, and employment in a foreign country” (p. 19). Coleman (1990) focuses on three significant components of social networks, norms and reciprocity, trust, and information. Similarly, Portes and Sensenbrenner (1993) describe value introjection and reciprocity transactions as forms of social capital but also bounded solidarity and enforceable trust. Reciprocity is an important motivation for immigrants, as they or their

network connections may need assistance in the future. Menjivar (1997) suggests that Mexicans have a strong system of reciprocity, but Salvadorans do not.

If social capital includes intangible resources, then information about the migration process is social capital. Immigrants are especially reliant on their network contacts when migrating, as they lack information about the migration process. According to Coleman (1990), network is an important measure of information. It can facilitate the transfer of information about the migration process. In this analysis, the measures used focus on whether one's network has information linked with a specific destination.

In her book *Migration-Trust Networks*, Flores-Yeffal (2013, p. 18) outlines several ways that information would be of assistance to potential migrants. Colombian migrants can use their social networks to gather information about the migration process and demand for labor, housing, lodging, and employment. Without this social capital, migration would be more expensive, challenging, and dangerous.

Massey, Alcaron, Durand, and González wrote the book *Return to Aztlan*, which focused on the social process of migration, documenting how significant social networks were in facilitating migration and adaptation into the United States. Given that Mexicans constitute most U.S.-destined migrants, studies have focused on Mexican migration (Massey, Alarcon, Durand, & González, 1990).

Social networks *facilitate* migration likely *caused* by other factors such as economic necessity (Massey et al. 1993). These are not initially a causal mechanism of migration, but once the population is established, it may become a causal mechanism to reunite family members. Migrant networks can be based on kinship, friendship, and a shared sending community (Massey et al., 1993; Massey et al., 1994). According to the Social Network Theory, social networks operate to lower migration costs, which increases the likelihood of international migration. Migrants who make the initial trips pay the highest migration costs, but successive immigrants can migrate less expensive due to the assistance of previous migrants. Those who have relatives or friends with prior migration experience should be more likely to migrate (Massey et al., 1993). Furthermore, the likelihood of migration is expected to be greater if there is a closer connection and if the relationship is stronger between the migrant and the person providing the information.

Social capital can be included within the cumulative causation theory, which proposes that migration self-perpetuates regardless of the initial cause (Flores-Yeffal, 2013; Massey et al., 1993). Migration fundamentally alters the context where the decision to migrate takes place by changing the distribution of income, land, agrarian production, the culture of migration, and the regional distribution of human capital (Massey et al., 1993). Additionally, it alters the network connections between the sending and receiving community, which decreases migration costs (Flores-Yeffal, 2013; Massey, Alarcon, Durand, & González, 1990). With the development of social capital within a country, cumulative causation occurs where the probability of migration increases because of the newly generated social capital (Massey, 1990; Massey & Zenteno, 1999). Labor migration can shift to family reunification over time (Fussell & Massey, 2004; Kandel & Massey, 2002).

Social networks are associated with Mexican migration (Massey, 1987). The probability of migration to the United States is positively associated with having a prior U.S. migrant living in the household and having a father who had migration experience to the United States (Massey, 1987; Massey & España, 1987). Additionally, during later trips, the conditions within their communities became less significant, and their own migration experience became more significant in determining migration.

Sociologists such as Granovetter (1985) have provided a detailed critique of the economic model of migration, which does not consider social relations. Economic sociology as a field has offered a critique of economic theory, which seems especially relevant to the area of international migration. Supply and demand must surely impact the decisions migrants make about whether to migrate to another country. However, the assumption that individual rational actors make decisions based on perfect information is an inaccurate description of migrants' decision-making processes. Coleman (1990) calls the assumption of neoclassical models of an independent rational actor who makes rational decisions independently of others a fiction. According to Coleman (1990), people can use social networks to gather information. Concerning the assumption of perfect information, some migrants have access to more information or more reliable information specific to the migration process. Therefore, it is important to measure information accessibility for immigrants about foreign destinations.

To immigrants, information about the migration process is an especially valuable commodity. According to Flores-Yeffal (2013), social networks can provide anything documented and undocumented migrants might need for their journey. It can help them select their destination, even if they do not have strong social ties (McConnell, 2008; Sue, Riosmena, & LePree, 2019). During their first trip, migrants lack information about migration processes but can access it through their social networks (Singer & Massey, 1998). They will use their networks to learn the laws regulating migration and perhaps how to circumvent them (Aguilera & Massey, 2003). For example, some will learn about how to get a visa (Hagan, 1994). Also, they will use their networks to acquire jobs (Aguilera & Massey, 2003). Familial and friendship social networks have been found to lead to jobs with higher pay and occupational prestige (Aguilera & Massey, 2003; Amuedo-Dorantes & Mundra, 2007; Mullan, 1989).

Granovetter's (1973) contribution to the study of labor markets was his finding about job seekers using weak ties to find better jobs. Weak ties are argued to guide them to diverse information that leads to better employment outcomes. This argument is important when considering migration but obtaining diverse information can come at the expense of trust networks. The problem as it applies to migration is that the weaker ties would, by definition, hold less trust, something immigrants need to migrate to the receiving country (Flores-Yeffal, 2013). When migrants rely on information about international migration—an inherently dangerous act—they must ensure that the information received is accurate to keep themselves safe from migration hazards. Therefore, it is expected that they would receive greater benefits from their stronger ties, which would provide more accurate information.

Social networks have been shown to impact one's likelihood of migration (Palloni, Massey, Ceballos, Espinosa, & Spittel, 2001). For instance, having an older sibling with migration experience triples one's likelihood of migration to the United States. Also, migrant networks increase it, even after correcting for unobserved heterogeneity.

A study about Colombian and Dominican migrants in Madrid, Spain, shows how information is distributed through social networks (Sperling, 2014). People communicate through the internet with their relatives. This ready access to transnational connections means that information is spread quickly through social media, which can facilitate the migration process. Colombian immigrants living in Spain or New York can communicate with their relatives globally. Therefore, gaining more information about potential destinations. Migrants employing social media can access information about multiple countries, as it easily facilitates transnational communication.

Scholars such as Lamela, Pérez-Caramés, and Fernández-Suárez (2012) have studied the social networks of Colombians in Galicia, Spain. The study reports distrust of Colombians in Spain associated with the drug trade and presumed prostitution involving some female Colombians. Also, it documented that social networks are often fragile and quickly dissolve after assistance is provided. Such inability to maintain relations was reported in the United States as well, where Colombians mainly rely on their family and close relatives (Guarnizo & Díaz, 1999; Guarnizo, Sanchez, & Roach, 1999). Colombians' role in the drug trade means that Colombians abroad are stigmatized. Especially those in the United States are reluctant to form new relationships with other Colombians for fear that they might be associated with the drug trade (Guarnizo & Díaz, 1999; Guarnizo, Sanchez, & Roach, 1999).

One study about Colombian migration links violence to international migration (Silva & Massey, 2014). The study shows that people migrate out of Colombia during times of greater violence and with increased police presence. It also provides some evidence that Colombians migrate to regions of the world where they have more social connections. The paper incorporated three measures of social capital, whether one had ties to U.S.-Canada, L.A.-Caribbean, and Europe. These measures of social capital are broad, as they connect social networks with regions of the world rather than countries. However, more precisely, measuring one's connections to people in the receiving community might shed greater light on the importance of social networks to the migration process of Colombians.

It is important to note that not all studies portray social networks positively in the migration/adaptation process. In fact, Granovetter (1973) indicated that this kind of closed, tight-knit social network can be problematic as they inhibit new information from being transmitted through the social network. Migrants might rely on tight-knit social networks, but such reliance comes at a cost. Research has documented exploitation within these types of social networks. Unpaid and forced labor are common, as family members may also foster forced migration, debt, and unpaid labor (Barrientos, 2013; Jimenez Sifuentez, 2016; Madrid Serrano, 2016; Mahmud, 2015; Rosales, 2014; Sánchez & Yoldi, 2013; Stephen, 2007). For example, although Hagan (1998) finds that social networks help Mayans in Houston find jobs and housing, it causes a decline in the value of networks for Mayan women over time.

There is evidence that exploitation occurs within ethnic networks. For instance, Hondagneu-Sotelo (1994b) reports that more experienced immigrants occasionally exploit newly arrived Mexican immigrants. Similar findings are reported by Mahler (1995) within the Salvadorian community. Newcomers and undocumented migrants might also face exploitation, unpredictable schedules, precarious labor conditions, and underpayment by their family members and social networks from their sending community (Rosales, 2014; Hondagneu-Sotelo, 1994b).

One study on Colombian migration to Spain finds that social networks do not explain inflows of Colombian migrants, but more significant are push factors, migration history, and social change in Colombia (Lamela, Pérez-Caramés, & Fernández-Suárez, 2012). Of course, ethnic enclaves have also been found to foster exploitation. Although Portes and Bach (1985) find that ethnic enclaves are a valuable resource for Cuban success in Miami, other scholars show that ethnic enclaves provide low-paid jobs to employees (Sanders & Nee, 1987). Aguilera (2009) showed that self-employed Mexicans employed in ethnic enclaves earn lower wages than those employed in the formal economy. Since there is a debate as to what role social networks play in the migration process, there is a sufficient need to study the role social networks play within the Colombian immigrant community.

### *Gender and Migration*

Many studies have focused on the gendered nature of migration. For example, some countries send more males than females while others migrate in a more balanced proportion (Cerrutti & Gaudio, 2010; Donato, 2010). According to Cerrutti and Gaudio (2010), Mexican migration is mostly male dominated, unlike Paraguayan migration, which is more gender balanced. Similarly, Donato (2010) shows that Mexican migration is more male dominated, whereas Puerto Rican men and women migrate at about the same rate. Equally, Nicaraguans and Dominicans fell between Mexicans and Puerto Ricans. Part of the reason men migrate more than women is related to the fact that migration is gendered in the sense that men's and women's decisions are viewed from different lenses (Curran & Rivero-Fuentes, 2003).

Hondagneu-Sotelo (1994a) studied the social networks of Mexican women who negotiate patriarchal families to migrate to the United States. Additionally, the author found evidence of females' active discouragement from wanting to migrate. Women looking to migrate without the consent of their families must develop female networks to get access to capital and encouragement. Their networks operate similarly to male networks, but such ties help women negotiate "patriarchal barriers" to migration (1994a, p. 94). The social resources of the family are not equally shared with all members, as men have better access to such networks. However, women often must rely on non-family networks to circumvent their patriarchal families.

Some studies show that social networks operate differently for men and women. Hoang (2011) found that in Northern Vietnam, men receive practical assistance and information from extended social networks, but women received protection and social control from their families as women were perceived as sexually vulnerable.

Other studies show that social networks harm women's labor market performance in the United States. Livingston (2006) uses the data from the Mexican Migration Project to study the relationship between social networks and employment outcomes. The study reports that women who used social networks during their job search were less likely to be employed in the formal sector, while men received positive returns for network use.

As for this research, it has several goals. First, the study will test whether the Colombian migration process is a social process embedded in social connections. Second, it will provide a measure tying social connections to the specific destinations of migrants. Third, the project also shows that Colombians migrate to many international destinations, but this study focuses on Latin America, Spain, and the United States. The study provides statistical tests regarding the various types of ties, as some connections may be more significant for migrants. It also tests several interactions to determine how the migration process is different for men and women, particularly concerning the role of social networks in promoting migration.

## DATA AND METHODS

We used data from the Latin American Migration Project (LAMP) to analyze Colombian migration to Latin America, Spain, and the United States. Specifically, the study used the PERS and HOUSE files of LAMP-Colombia to study the migration process. The LAMP-Colombia data were collected from 14 communities in Colombia, and 200 households were surveyed from each community. The samples collected in Colombia were supplemented with snowball sampling of out-migrants who were subsequently located and interviewed in the United States and Spain, as 94 respondents were interviewed in the United States and 616 in Spain. Most of the data were collected in Colombia, and 95% of the surveys were conducted in households to collect information about the residents. When migrants reported taking a trip to another country, the LAMP survey collected additional information about their migration.

By studying Colombians residing in their country of origin, information about their international trip can be gathered. The data included in the analyses represent all household members, as the PERS and HOUSE files included data about all household members. Since all household members are included in the analyses, the regression analyses account for clustering by reporting robust standard errors. When only heads of household are studied using the LAMP-Colombia, the sample size is small, so it is necessary to include all household members, which also means an increase in the number of women. This precision is necessary since gender differences are addressed in the analyses.

The analyses define 'migrant' based on whether the respondent has ever made an international trip, as we predict their last trip. For 92% of the respondents, their last trip was their first trip. For another 6%, the last trip was their second trip. The analysis was run excluding the 8% who had taken more than one trip and excluding such cases did not fundamentally alter the findings presented.

The question of circular migration was considered as 8% of the migrants had taken multiple trips, and some took trips to multiple destinations. Although few people went to multiple

destinations, analyses were conducted to exclude these circular migrants, and the models are similar to what is presented.

Table 1. Variable definitions for variables used in analyses

VARIABLES	VARIABLE DESCRIPTIONS
Migrate	Dichotomous variable where those who had ever migrated internationally =1; those who had not migrated =0.
Latin America	Dichotomous variable where those who had ever migrated to a Latin American country =1; those who had not migrate to a Latin American country =0.
Spain	Dichotomous variable where respondents who migrated to Spain =1; those who did not migrate to Spain =0.
United States	Dichotomous variable where those who had migrated to the United States =1; those who had not migrated to the United States =0.
SOCIAL NETWORK	
Nuclear Family Abroad	Dichotomous variable where those with a mother, father, or sibling who had ever migrated internationally =1; those without =0.
Relatives abroad	Dichotomous variable where those with an uncle, cousin, nephew, or in-law who had ever migrated internationally =1; those without =0.
Friends abroad	Dichotomous variable where those with friends who had ever migrated internationally =1; those without =0.
Nuclear family Latin America	Dichotomous variable where those with a mother, father, or sibling who had ever migrated to any Latin American country =1; those without =0.
Relatives Latin America	Dichotomous variable where those with an uncle, cousin, nephew, or in-law who had ever migrated to any Latin American country =1; those without =0.
Friends Latin America	Dichotomous variable where those with a friend who had ever migrated to any Latin American country =1; those without =0.
Nuclear family Spain	Dichotomous variable where those with a mother, father, or sibling who had ever migrated to Spain =1; those without =0.
Relatives Spain	Dichotomous variable where those with an uncle, cousin, nephew, or in-law had ever migrated to Spain =1; those without =0.
Friends Spain	Dichotomous variable where those with a friend who had ever migrated to Spain =1; those without =0.
U.S. nuclear family	Dichotomous variable where those with a mother, father, or sibling who had ever migrated to the United States =1; those without =0.
U.S. relatives	Dichotomous variable where those with an uncle, cousin, nephew, or in-law who had ever migrated to United States =1; those without =0.
U.S. friends	Dichotomous variable where those with a friend who had ever migrated to the United States =1; those without =0.
Labor experience (years)	A continuous proxy measure of work experience of work experience calculated as age-(edys+6).
Education	Total years of education completed.

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Female	Dichotomous variables where females =1; males =0.
Married	Dichotomous variable where the married =1; unmarried =0.
HUMAN CAPITAL AND DEMOGRAPHIC	
Visa holder	Dichotomous variable where those with a visa =1; those without =0.
Age	Age is a category variable where 1=less than 20 years, 2=20-29 years, 3=30-39 years, 4=40-49 years, and 5=50+.
Duration of last trip abroad	Categorical variable where 1=0-5 years, 2=5.01-10 years, 3=10.01-15 years, and 4=15.01+ years.
Duration of last domestic trip	Trip duration of last domestic trip in months.
Owned property	Dichotomous variable where those who own property =1; those who do not =0.
Owned a business	Dichotomous variable where those who own a business =1; those who do not =0.
Pratio	The prevalence ratio is described “as the number of people with international migratory experience divided by the total number of people alive.”
Pueblo	Dichotomous variable where those who live in a town or ranch =1; those from a metropolitan or smaller urban area =0.
Deaths	Number of annual deaths in municipio.
Occupation	Occupation is a grouping of occupations for the last job possessed in Colombia: Unemployed =0, Professional =1, Technical workers =2, Agriculture =3, Manufacturing =4, Transportation =5, Service and sales =6, Domestic service =7, and Security =8.
Department	There were 14 communities from six departments surveyed that were grouped into their respective departments. The departments include Risaralda =0, Quindio =1, Cundinamarca =2, Caldas=3, Valle del Cauca =4, Atlantico =5, and those with an unknown department =6.
Year	Year of last migration is grouped into six categories: 1960=before 1970, 1970=1970-1979, 1980=1980-1989, 1990=1990-1999, 2000=2000-2009, and 2010=2010-2014.

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Source: Elaborated by the authors based on data from LAMP (2012).

Table 1 provides the variable descriptions for the dependent and independent variables included in the models. Due to space considerations, the variables will only be provided in Table 1. The analyses use logistic regression to predict migration to Latin America, Spain, and the United States.

### *Findings*

The weighted descriptive statistics for the analyses are presented in Table 2. According to the instructions from the researchers who collect and maintain the data, weighting the data creates “data representative of the area formed by all of the sampling frames” (Pren, 2012, p. 5). The document indicates that it was important to weigh the data, as small towns would be overrepresented. Table 2 also provides a T-Test of difference in means to test whether the means for migrants are significantly different from the means from the broader population.

Table 2 displays the variables used in later analyses. The first variable displayed is ‘migrate,’ which compares those who became migrants to the ones who remained in Colombia. Given the extensive literature on health selectivity, it seems important to know how migrants differ from non-migrants (Bostean, 2013; Cheong & Massey, 2019; Donato, Hamilton, & Bernard-Sasges, 2019). In total, 12.3% of those surveyed migrated out of Colombia. Among all respondents, Spain is the largest receiver of immigrants, with 5.5%, followed by the United States, with 3.8%, and 1.9% for Latin America.

In terms of social networks, Colombians have access to people within their network who have been outside Colombia. Within the communities surveyed, 24.8% have nuclear family with migration experience, 44.2% have other relatives with migration experience, and 11.6% have friends with migration experience. Regarding migrants, 34.8% have nuclear family, 56.8% have other relatives, and 11.6% have friends with international migration experience. Clearly, migrants have more social connections to others who have traveled abroad as compared to others within their community.

Migration experience within networks among relatives/friends is limited in Latin America, as 6% have nuclear family, 7.8% have other relatives, and only 1.3% have friends with migration experience. Interestingly, migrants do not appear to differ much in terms of their connections to others who have migrated to Latin America, as 6.4% have nuclear family, 6.3% have other relatives, and 1% have friends who have migrated to Latin America.

In terms of migration experience to Spain, respondents indicated that 8.5% have nuclear family, 18.7% have other relatives, and 6.3% have friends who have gone to Spain. In contrast, migrants have more connections to migration experience to Spain, as 15.5% of the migrants have nuclear family, 25% have other relatives, and 5.9% have friends who have been to Spain.

Regarding migration experience specific to the United States, 11% of respondents indicated that they have nuclear family, 23.5% have other relatives, and 6.3% have friends who have migrated to the United States. Migrants have more connections in the United States, as 15.5% have nuclear family, 31.1% have other relatives, and 6.8% have friends with migration experience to the United States. Clearly, this migration experience may help provide information about the migration process to these destination

Table 2. Weighted Descriptive Statistics for all Respondents and Migrants

DEPENDENT VARIABLE	ALL RESPONDENTS		MIGRANTS		T-TEST	
	MEAN	SD	MEAN	SD		
Migrate	.123	.328	NA	NA	NA	*
Latin America	.019	.136	.150	.357	26.75	*
Spain	.056	.230	.454	.498	51.43	*
United States	.037	.190	.319	.466	42.30	*
SOCIAL NETWORK						
Nuclear family abroad	.248	.432	.348	.477	7.88	*
Relatives abroad	.442	.497	.568	.496	8.67	*
Friends abroad	.116	.320	.116	.320	-.01	
Nuclear family Latin America	.060	.238	.064	.246	.56	
Relatives Latin America	.078	.268	.063	.243	-1.92	*
Friends Latin America	.013	.114	.010	.101	-.88	
Nuclear family Spain	.085	.280	.155	.362	8.26	*
Relatives Spain	.187	.390	.250	.433	5.41	*
Friends Spain	.063	.243	.059	.236	-.54	
U.S. nuclear family	.110	.312	.155	.362	4.91	*
U.S. relatives	.235	.424	.311	.463	6.06	*
U.S. friends	.063	.244	.068	.253	.78	
HUMAN CAPITAL AND DEMOGRAPHIC						
Labor experience (years)	21.036	19.106	22.623	14.040	2.88	*
Education (years)	8.998	4.831	11.455	3.607	17.63	*
Female	.384	.486	.366	.482	-1.25	
Married	.481	.500	.623	.485	9.65	*
Visa holder	.108	.311	.939	.239	92.47	*
Age	36.034	18.984	40.078	13.656	7.40	*
International trip duration	--	--	124.469	102.535		
Domestic trip duration	77.341	157.904	48.313	111.896	-6.39	*
Owned property	.576	.494	.511	.500	-4.50	*
Owned a business	.234	.423	.203	.403	-2.46	*
Pratio	9.699	4.402	6.575	3.833	-24.40	*
Pueblo	.271	.444	.231	.422	-3.03	*
Deaths	4 352	5 010	4 405	5 122	.36	
OCCUPATION						
Professionals	.100	.300	.118	.323	2.03	*
Technical workers	.018	.134	.016	.127	-.49	
Agriculture	.043	.203	.025	.155	-3.13	*
Manufacturing	.131	.337	.165	.371	3.37	*

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Transportation	.045	.208	.033	.178	-2.08	*
Service & sales	.220	.414	.249	.433	2.40	*
Domestic service	.015	.123	.016	.125	.13	
Security	.001	.023	.005	.068	4.74	*
Unemployed	.427	.495	.374	.484	-3.64	*
DEPARTMENT						
Risaralda	.334	.472	.398	.490	4.59	*
Quindio	.084	.278	.109	.312	3.03	*
Cundinamarca	.127	.333	.062	.242	-6.76	*
Caldas	.073	.260	.041	.199	-4.23	*
Valle del Cauca	.300	.458	.343	.475	3.22	*
Atlántico	.082	.274	.046	.210	-4.53	*
YEAR						
1960-1969	--	--	.018	.134	--	
1970-1979	--	--	.034	.181	--	
1980-1989	--	--	.085	.279	--	
1990-1999	--	--	.217	.412	--	
2000-2009	--	--	.576	.494	--	
2010-2014	--	--	.070	.254	--	
N	13 752		1 351			

Note: \* = Statistically significant at the .05 level.

Source: Elaborated by the authors based on data from LAMP (2012).

As for demographic composition, Table 2 presents the descriptive statistics of all respondents and migrants. Regarding work, migrants have more work experience and education in Colombia than others from their communities. The average work experience years are 21 years for all respondents but 22.62 for migrants. Respondents have nine years of education, and migrants have 11.46 years of education on average. Concerning gender, there is more male migration, as only 36.6% of migrants were female, in contrast to 38.4% of all female respondents. Also, migrants are more likely to be married, as shown by 62.3%, compared to 48.1% of respondents interviewed. Most migrants have a visa, as 93.9% were visa holders. On average, migrants are 40 years old, while the average for the total population is 36 years.

The average trip length of international migrants was 124 months. The average domestic trip duration was 77 months, but only 48 months for international migrants. As shown by 51.1%, migrants are less likely to have a property and/or businesses in Colombia in contrast to 57.6% of all respondents who own property. In terms of business ownership, 20.3% of migrants own businesses in Colombia relative to 23.4% of all respondents. The average Pratio was 9.69%, but only 6.57% for migrants. On average, 27% lived in a *pueblo* and 23% of migrants came from *pueblos*. The average number of deaths in the municipality was 4 352, but it was 4 405 for migrants, which is not a statistically significant difference.

In terms of occupation, migrants appear more employable than non-migrants. Their unemployment rate is 37.4%, compared to all respondents whose unemployment rate is 42.7%. Those who were employed appear to be more represented in professional occupations, as 11.8% worked as professionals compared to 10% of the total population surveyed. Migrants are also well represented in manufacturing, as 16.5% work in that sector relative to 13.1% of all respondents. Additionally, migrants are highly represented in service and sales, as 24.9% of migrants and 22% of all respondents work in that area. The occupational data shows that migrants are better qualified for the workforce.

In terms of their departments, there are differences between where all respondents came from in relation to migrants. Some departments have a greater prevalence of migration. For example, 39.8% of migrants come from Risalda, but only 33.4% of the respondents are from this department. On the other hand, Valle del Cauca has more migrants, as 34.3% come from this department and 30% for all respondents. Regarding other communities, such as Cundinamarca, Caldas, and Atlántico, there is less representation within the migrant community. Only 6.2% of migrants come from Cundimarca, but 12.7% of all respondents.

The year migration occurred is also illustrated. Most respondents went out of Colombia between 2000 and 2009 (57.6%). Between 1990-1999, 21.7% left Colombia, and between 1980-1989, 8.5% left Colombia.

Table 3. Logistic Regression Predicting Odds Ratio of Migration

SOCIAL NETWORK	MODEL 1			MODEL 2			MODEL 3		
	ODDS RATIO	ROBUST SE	P	ODDS RATIO	ROBUST SE	P	ODDS RATIO	ROBUST SE	P
Nuclear family abroad	1.529	.123	**	2.140	.281	**	--	--	--
Relatives abroad	1.402	.106	**	1.704	.151	**	--	--	--
Friends abroad	1.279	.134	*	1.739	.287	**	--	--	--
Nuclear Latin America	--	--	--	--	--	--	2.731	.742	**
Relatives Latin America	--	--	--	--	--	--	2.160	.676	*
Friends Latin America	--	--	--	--	--	--	20.919	18.944	**
HUMAN CAPITAL & DEMOGRAPHIC									
Labor experience (years)	.993	.007		.992	.007		.966	.019	
Years of education	1.086	.013	**	1.085	.013	**	.887	.033	**
Female	1.264	.100	**	1.263	.100	**	1.810	.365	**
Married	1.059	.085		1.056	.084		1.081	.211	
Visa holder	--	--	--	--	--	--	1.172	.335	
Age 20-29 years	2.351	.423	**	2.367	.426	**	5.449	3.229	**
Age 30-39 years	5.273	1.145	**	5.364	1.167	**	6.198	4.239	**
Age 40-49 years	4.847	1.309	**	4.920	1.330	**	6.890	5.541	*
Age 50+	3.749	1.341	**	3.808	1.363	**	9.916	10.026	*
Trip 5.01-10 years	--	--	--	--	--	--	.228	.052	**

(continues)

*(continuation)*

Trip 10.01-15 years	--	--	--	--	--	--	.102	.029	**
Trip 15+ years	--	--	--	--	--	--	.082	.027	**
Domestic trip duration	.998	.000	**	.998	.000	**	1.000	.001	
Owned property	.783	.058	**	.786	.059	**	.771	.147	
Owned a business	.596	.053	**	.598	.053	**	2.395	.472	**
Pratio	.459	.020	**	.459	.020	**	.967	.038	
Pueblo	.071	.012	**	.072	.012	**	.395	.149	*
Deaths	1.000	.000	**	1.000	.000	**	1.000	.000	
OCCUPATION									
Professionals	.881	.116		.870	.115		1.150	.378	
Technical workers	1.508	.300	*	1.474	.295		.261	.175	*
Agriculture	.671	.136	*	.670	.137	*	1.534	.688	
Manufacturing	1.073	.124		1.068	.124		1.024	.303	
Transportation	1.735	.293	**	1.690	.287	**	.877	.344	
Service & sales	1.537	.149	**	1.538	.149	**	.710	.178	
Domestic service	3.807	.960	**	3.754	.958	**	.362	.238	
Security	--	--	--	--	--	--	.316	.286	
DEPARTMENT									
Risaralda	53.772	17.053	**	53.936	17.062	**	1.884	1.130	
Quindio	.001	.001	**	.001	.001	**	.795	.483	
Cundinamarca	1.417	.238	*	1.410	.237	*	.538	.361	
Caldas	.020	.005	**	.020	.005	**	2.974	1.051	**
Atlántico	.001	.000	**	.001	.000	**	9.339	2.894	**
YEAR OF MIGRATION									
1970-1979	--	--	--	--	--	--	19.140	27.046	*
1980-1989	--	--	--	--	--	--	4.483	6.388	
1990-1999	--	--	--	--	--	--	2.702	2.765	
2000-2009	--	--	--	--	--	--	1.570	2.209	
2010-2014	--	--	--	--	--	--	2.023	2.952	
INTERACTIONS									
Nuclear*Relatives	--	--	--	.612	.100	**	--	--	--
Relatives*Friend	--	--	--	.625	.131	*	--	--	--
Constant	42.837	18.808	**	39.421	17.197	**	.170	.259	
Log likelihood	-2.544			-2.538			-454		
Pseudo R2	.424			.425			.339		
N	13.744			13.744			1.344		

Note: \* = Statistically Significant at the .05 level.

Note: \*\* = Statistically Significant at the .01 level.

Source: Elaborated by the authors based on data from LAMP (2012).

Tables 3 through 5 provide the principal findings of the research. Table 3 includes the results for the logistic regressions predicting migration regardless of destination and migration to Latin America. The first section of Table 3 focuses on social networks, specifically whether relatives and friends have ever migrated out of Colombia and whether they had migrated to Latin America. Migration in general and to Latin America is predicted based on connection to others who had migrated to these destinations.

The first model shows that three measures of information networks are related to migration. For instance, respondents with nuclear families with migration experience are 1.529 times more likely to migrate. As for Colombians with relatives who have migrated, they are 1.402 times more likely to migrate. Lastly, friends with migration experience result in 1.279 times more likely to migrate. The analyses show that when deciding to migrate, having family members with migration experience increases the probability that one will make an international trip.

The second model predicting international migration includes several interactions. Since this is an interactive model, the main effects of this model provide the odds ratios for the main effect, assuming that the other main effect in the interaction is zero. The odds ratios in the first model show that some social networks holding migratory experience are more influential in predicting international migration, but interaction is necessary to provide a formal test of significance. The literature about Colombian migrants' social networks provides some evidence that social networks might be more important in predicting migration. It is necessary to determine which networks are more strongly related to migration.

The first interaction exhibited in Model 2 shows that having a nuclear family is more strongly associated with migration than relatives—who are more distant family members—as the interaction demonstrates that the migration odds for migrants with a nuclear family with migration experience is a 2.140 odds ratio. However, for relatives with migration experience, it is 1.704. As for those with both network types (nuclear family and relatives with migration experience) is 3.232. The second interaction shows that friends with migration experience strongly relate to migration more than having other relatives with migration experience. The odds of migration for respondents with relatives with migration experience is 1.704 and 1.739 for respondents with friends with migration experience, and when respondents possess both, it is 2.818.

Lastly, the third model predicts migration to other Latin American countries. In this model, all the respondents who emigrated to a Latin American country were combined, since there were very few cases (292) to compare. This classification makes the social network variables imprecise. In terms of migration to other Latin American countries, social networks appear to play an important role. For instance, Colombians with nuclear family who have migration experience to Latin America are 2.731 times more likely to migrate to Latin America. Similarly, those whose relatives have migration experience to Latin America are 2.160 times more likely to migrate to Latin America. Also, having friends with migration experience to Latin America greatly increases the likelihood of migration to a Latin American country.

Table 4. Logistic Regression Predicting Odds Ratio of Migration

SOCIAL NETWORK	MODEL 1			MODEL 2			MODEL 3		
	ODDS RATIO	ROBUST SE	P	ODDS RATIO	ROBUST SE	P	ODDS RATIO	ROBUST SE	P
Nuclear Spain	3.617	.847	**	3.627	.856	**	--	--	--
Relatives Spain	1.760	.300	**	2.094	.378	**	--	--	--
Friends Spain	.951	.258		1.569	.436		--	--	--
U.S. nuclear	--	--	--	--	--	--	2.527	.496	**
U.S. relatives	--	--	--	--	--	--	2.511	.399	**
U.S. friends	--	--	--	--	--	--	1.285	.348	
HUMAN CAPITAL & DEMOGRAPHIC									
Labor experience (years)	.989	.019		.989	.019		1.042	.020	*
Years of education	.949	.027		.950	.027		1.166	.039	**
Female	.826	.132		.827	.133		.668	.118	*
Married	.722	.115	*	.725	.116	*	1.356	.234	
Visa holder	2.252	.512	**	2.340	.545	**	.604	.131	*
Age 20-29 years	.532	.201		.505	.191		.420	.188	
Age 30-39 years	.878	.424		.833	.401		.247	.135	**
Age 40-49 years	.921	.585		.902	.573		.207	.139	*
Age 50+	.728	.602		.704	.581		.250	.211	
Trip 5.01-10 years	3.555	.698	**	3.479	.690	**	1.146	.237	
Trip 10.01-15 years	6.766	1.516	**	6.646	1.535	**	1.349	.315	
Trip 15+ years	13.707	4.016	**	13.094	3.848	**	1.770	.425	*
Domestic trip duration	1.000	.001		1.000	.001		1.000	.001	
Owned property	.475	.072	**	.468	.071	**	2.103	.354	**
Owned a business	.994	.178		1.041	.188		.591	.118	**
Pratio	.983	.032		.983	.033		1.055	.039	
Pueblo	.397	.116	**	.383	.113	**	2.740	.767	**
Deaths	1.000	.000	**	1.000	.000	**	1.000	.000	
OCCUPATION									
Professionals	.526	.174		.509	.170	*	1.085	.337	
Technical workers	1.148	.469		1.143	.473		2.368	.969	*
Agriculture	.913	.437		.892	.436		1.510	.651	
Manufacturing	1.725	.413	*	1.772	.428	*	.414	.117	**
Transportation	1.288	.378		1.355	.396		.354	.126	**
Service & sales	1.171	.230		1.195	.237		.699	.146	
Domestic service	1.899	.922		1.938	.948		1.544	.729	
Security	1.599	1.488		1.618	1.492		.759	.591	

(continues)



(continuation)

DEPARTMENT									
Risaralda	.565	.257		.573	.263		2.237	.951	
Quindío	1.920	.954		1.834	.924		1.284	.576	
Cundinamarca	2.580	1.006	*	2.526	.985	*	.417	.180	*
Caldas	1.425	.492		1.360	.475		.500	.177	*
Atlántico	.244	.069	**	.231	.066	**	.246	.091	**
unknown	2.415	.838	*	2.337	.821	**	.577	.207	
YEAR OF MIGRATION									
1970-1979	.184	.276		.181	.271		.381	.321	
1980-1989	.544	.663		.542	.656		.905	.751	
1990-1999	4.856	5.686		4.697	5.463		.452	.374	
2000-2009	22.619	27.548	**	21.618	26.176	**	.219	.189	
2010-2014	27.718	35.259	**	26.066	33.009	*	.235	.229	
INTERACTION									
Relatives*Friends	--	--	--	.230	.134	*	--	--	--
Constant	.086	.112		.090	.117		.082	.087	*
Log likelihood	-665			-661			-609		
Pseudo R2	.352			.356			.263		
N	1 483			1 483			1 483		

Note: \* = Statistically Significant at the .05 level.

Note: \*\* = Statistically Significant at the .01 level.

Source: Elaborated by the authors based on data from LAMP (2012).

Table 4 provides the logistic regression predicting migration to Spain and the United States. The first model in Table 4 predicts migration to Spain. It shows that Colombians with nuclear family, who have migrated to Spain, are 3.617 times more likely to migrate to Spain. Colombians with other relatives who have migrated to Spain are 1.760 times as likely to migrate there. Additionally, the migration of friends to Spain is not significantly associated with their decision to migrate.

The second model in Table 4 includes interaction between relatives and friends with migratory experience. This interaction is included in the model to test whether either network type was more strongly associated with migration to Spain. The statistically significant interaction shows that having relatives with migration experience is more strongly associated with their decision to migrate to Spain than if friends have migration experience. The odds of migration for respondents with relatives with migration experience is 2.094, 1.569 for respondents with friends with migration experience, and 3.433 for those with both network types.

Finally, the third model predicts migration to the United States. Those with nuclear family members that have migration experience to the United States are 2.527 times more likely to migrate there. Similarly, Colombians with other relatives who have migrated to the United States are 2.511 times more likely to migrate to the United States. As for friends with migration experience in the United States, it is not significantly associated with their decision to migrate there.

Table 5. Logistic Regression Predicting Odds Ratio of Migration

	ODDS RATIO	ROBUST SE	P
SOCIAL NETWORK			
U.S. nuclear	2.596	.512	**
U.S. relatives	3.266	.641	**
U.S. friends	1.267	.343	
HUMAN CAPITAL & DEMOGRAPHIC			
Labor experience (years)	1.040	.020	*
Years of education	1.164	.039	**
Female	.872	.188	
Married	1.343	.232	
Visa holder	.607	.130	*
Age 20-29 years	.438	.194	
Age 30-39 years	.267	.145	*
Age 40-49 years	.223	.150	*
Age 50+	.279	.238	
Trip 5.01-10 years	1.107	.231	
Trip 10.01-15 years	1.375	.319	
Trip 15+ years	1.790	.430	*
Domestic trip duration	1.000	.001	
Owned property	2.113	.357	**
Owned a business	.572	.116	**
Pratio	1.060	.040	
Pueblo	2.873	.808	**
Deaths	1.000	.000	
OCCUPATION			
Professionals	1.094	.340	
Technical workers	2.410	.968	*
Agriculture	1.552	.681	
Manufacturing	.406	.116	**
Transportation	.339	.123	**
Service & sales	.694	.146	
Domestic service	1.450	.664	
Security	.724	.482	
DEPARTMENT			
Risaralda	2.029	.865	
Quindio	1.322	.597	
Cundinamarca	.429	.185	*
Caldas	.509	.181	

*(continues)*

*(continuation)*

	Atlántico	.269	.098	**
	Unknown	.576	.205	
YEAR OF MIGRATION				
	1970-1979	.375	.315	
	1980-1989	.899	.744	
	1990-1999	.441	.365	
	2000-2009	.212	.183	
	2010-2014	.224	.219	*
INTERACTION	Female*Relative	.526	.165	*
	Constant	.072	.074	
	Log likelihood	-607		
	Pseudo R2	.265		
	N	1 483		

Note: \* = Statistically Significant at the .05 level.

Note: \*\* = Statistically Significant at the .01 level.

Source: Elaborated by the authors based on data from LAMP (2012).

Table 5 includes a statistically significant interaction between females and relatives with migration experience regarding migration to the United States. Interactions were tested for all social network variables and gender. This interaction was the only significant interaction. It showed that women receive significantly lower returns than men when they have relatives with migration experience. The odds of migration of men with relatives with migration experience is 3.266 greater than those without this network, but the rate is 1.868 for women.

The findings show that social networks are a significant factor in determining where Colombians decide to migrate. The relationship between social networks and migration destination holds even after including significant controls for human capital and other demographic characteristics, occupation, department, and year of migration.

## CONCLUSION

The findings show that Colombians who have social connections with people who has migration experience to a specific destination increases the likelihood to migrate to that destination. It has been well established that social networks are positively associated with Mexicans migrating to the United States, and the goal was to extend such findings to Colombian migration. This study contributes to the literature on Colombian migration by providing a more refined measure of social networks, linking Colombian migrants through their social networks to the countries where they end up migrating. By focusing on this, we offer an approach to migration that recognizes that Colombian migrants are embedded within social networks, which they use to facilitate international migration. Additionally, by using the Latin American Migration Project data, the study was able to predict migration to a multitude of destinations.

The LAMP-Colombian data enables researchers to consider the probability of migration to multiple destinations simultaneously. Consistent with previous research, the findings highlight that Colombians migrate to a multitude of countries, not just the United States (Silva & Massey, 2014). They also migrate to Spain and other countries within Latin America.

The approach is to focus on Colombian migrants' connection to network members who have migration experience in the specific destination chosen by them. Having this access is thought to provide an information channel about migration so that they can obtain specific details about such communities, which in turn lowers migration costs, risks, and dangers. Although information is expected to flow through social networks, it is recognized that other mechanisms also operate within these networks, particularly reciprocity and obligation. Data shows that closer social networks provide higher returns than distant social networks, as the coefficients are mostly larger for the Nuclear Family Abroad vs. Relatives Abroad/Friends Abroad and Relatives Abroad vs. Friends Abroad. The one exception was found in the U.S. models, but the coefficients for U.S. Nuclear and U.S. Relatives are both larger than U.S. Friends. These findings suggest that greater levels of obligation may be associated with a higher migration probability, a proposition formally tested with several interactions that will be discussed next.

Previous studies on Colombian migration have suggested that there is much distrust within the Colombian migrant population related to the country's ties to drug trafficking, which translates into distrustful treatment by people who are not close network members (Guarnizo & Díaz, 1999; Guarnizo, Sanchez, & Roach, 1999; Lamela, Pérez-Caramés, & Fernández-Suárez, 2012). Consequently, evidence shows that they benefit more from closer social network connections. The research tested three interactions between network types to determine whether networks that appear to hold more obligations are more strongly associated with migration. Three of the interactions tested are statistically significant, and two suggest that networks holding greater obligation levels are more strongly associated with migration and migration to Spain. These interactions support the contention that some networks are more useful in terms of encouraging migration. The data do not address why having access to contacts with experience in the receiving community encourages Colombians to migrate.

The data allow for statistical tests as to whether the migration process is different for men and women. The literature presents evidence as to why social networks would function differently for men and women. The current study does not find much evidence that social networks operate differently for men and women who migrated to Latin America or Spain. However, it was found that men with distant relatives with migration experience to the United States are more likely to migrate there than women.

Migration is different for Colombian women than for men. The models reveal that Colombian women are more likely to migrate to Latin America than Colombian men, but Colombian men are more likely to migrate farther to countries such as the United States and Spain. This study did not focus on domestic migration, but additional analysis available upon request shows that Colombian women are also more likely to make domestic trips. Although the measures employed in this study do not provide much evidence of their network members treating them differently or providing

more information to men than women, women's social connections may be directing them to closer destinations.

Focusing on the social contacts of Colombian migrants is a departure from previous economic models of migration that focus on wage differences and the economic drivers of migration. Through these analyses, it is recognized that migration is a social process through which Colombian migrants use their social networks to facilitate their migration. According to cumulative causation, migration may start as a result of economic factors, but it eventually becomes sustaining because of the social networks developed with migration. Migrants count on their network members to provide important information about the destinations they are considering and what moving to such destinations might entail. Access to this information means that some migrants have better knowledge of the migration process, as they have obtained information from network members with personal experience migrating to the specific receiving community.

Social networks are likely to impact Colombians' migration process in a variety of ways. They have social connections with many people, some of these connections may not be family or friends. Perhaps, this research has underestimated the impact of social processes on migration, as the data only pertains to the migration experience of their friends and family members. The findings clearly show that friendship and familial network connections in the country of destination increases the probability of migration.

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