Gender Differentials in Labor Adaptation among Migrant Groups: A Case Study of Forced Migrants in Colombia

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The literature on forced migration shows that generalized civil conflicts affect the gender roles and occupational profiles of the populations exposed. In this paper I describe differences household headship, occupation profiles and employment status among persons with different migration experiences residing in Soacha, Colombia. The data come from the experimental census of this municipality. I divided household heads and spouses according to their migration experience in non-migrants, voluntary migrants and forced migrants. Views from the literature on gender and conflict cite the advantages experienced by female forced migrants who have resettled in urban areas are not supported by the findings presented in this paper. First, forced migrant households in urban areas are not likely to be headed by women. Second, forced migrant women are not more likely to be employed than men. Third, forced migrants are more likely to be employed in the informal labor market.

One of the main characteristics of contemporary conflicts is that they are no longer held in battlefields separated from people's homes. As a consequence, the main casualties are civilians (Giles and Hyndman 2004). Traditionally during wars and armed confrontations men were active in the armed forces and at the battlefields and women were in charge of safeguarding the home and the children. Today, the participation of women in the armed forces has increased (Enloe 2000). In the case of Colombia, women are also increasingly recruited into the guerilla groups (Navas Murimacho 2000 cited in Moser 2001) and their participation in delinquency increased by 10.3% in 2004 (AFP 2005). Given the ways in which war and civil conflict have evolved over time, gender relations during and after conflict have also been modified. The ways in which these changes have affected gender roles vary considerably according to ethnic, cultural, political and economic circumstances.

Although the roles played by women in conflict situations and in the military have been increasing, male participation is still predominant. In the Colombian case, age-specific mortality patterns illustrate the effects of a long-term armed conflict on population composition. Between 1990 and 1995 deaths caused by intentional injuries caused a loss of 950,000 person-years of healthy life, and 90% of these years corresponded to males. As a result, the ratio of male to female age-specific mortality rates during the period 1990-1995 was the highest since 1900. The decline in the growth of life expectancy for males is attributed to violent deaths, principally homicides, which are linked to violence, drug trafficking and insecurity (Flórez Nieto et al. 1990).

Today in any country that has suffered a period of military intervention or civil unrest certain images are increasingly common: women refugees gazing out hopelessly

after witnessing the death of a child, women with a riffle over the shoulder and a baby the her back, mothers and daughters protesting to prevent relief trucks from reaching zones belonging to the enemy, and women surrounded by children in refugee or IDP camps.

Gender, Conflict and Development

Many studies of refugees and internally displaced persons suggest that civil wars displace substantial numbers of people and that, women and children generally constitute a majority of refugee and internally displaced populations (Kumar 2001). In Africa, Asia, and Europe, collective centers for the displaced are overwhelmingly populated by women, children, the infirm, and the elderly, since men are fighting, have chosen to stay behind to protect their land, are hiding to avoid recruitment and personal threads, or have been killed (Cohen and Deng 1998).

According to Giles and Hyndman (2004) there are three manifestly gendered elements of war: mobilization into the armed forces, the catastrophic disruption of everyday life, and brutalization of the body. Colombian women in conflict zones face rape, sexual abuse, prostitution, early pregnancies and lack of access to maternal care. These gender-specific types of violence and consequences of conflict demand special attention. This article focuses on the consequences of flight for household composition and employment during the resettlement stage in an urban area.

To understand the role of internally displaced women and men as agents in the process of resettlement and reintegration and, therefore in the development of new communities, it is necessary to look at the contrasting roles that men and women play in development. In the 1970, Irene Boserup demonstrated the extent of women's

participation in agriculture and the need to include them as agents in national development plans (Boserup 1970). Later Amartya Sen (1983, 1990) argued that instead of looking at families as units of analysis for research on poverty and given the inferior position of women, researchers should consider a gendered perspective. As in studies of poverty, research on development in post-conflict situations or resettlement during conflict must also be gendered. This analysis aims to achieve that goal.

Forced displacement represents a traumatic rupture in the time and space of domestic and social reproduction across all dimensions (Kumar 2001;Meertens 1996). Displacement disrupts social and community relations, alters the structure and size of households and changes family patters and gander roles. During displacement families and households are often torn apart or fragmented. Although for women the process of displacement is more traumatic, they also seem to display greater flexibility in their adaptation to new environments and conditions as a survival strategy (Moser 2001). In some cases, displacement offers an opportunity for renegotiation of gender relations. Women tend to take on more and different roles as providers and protectors of families when productive older males become separated from households when they leave for work, security or recruitment into the military. During displacement and resettlement generally yield a higher proportion of single female headed households, and often these women develop a new sense of political consciousness and agency. In sum, women in displacement are forced to fulfill new roles that change gender power relations, whereas men find themselves cut loose end unable to reestablish their position as bread winners and decision makers (Cohen and Deng 1998;Bouta, Frerks and Bannon 2005; El Bushra 2000).

Bouta and Frerks (2002) suggested seven roles in which women are found during times of conflict: as victims of sexual violence, combatants, peace workers in NGOs, workers in formal peace politics, coping and surviving actors, household heads, and occupying informal and formal employment opportunities. In the literature, I found a vast number of frameworks and case studies focusing on the effects of conflict on women, but unfortunately I only found few references about the effects of war on men (El Bushra 2000; Moser 2001). The literature on gender and development sees the behavior of men and women as conditioned by social and cultural explanations, rather than by innate or natural differences between the sexes (Indra 1999). Assuming the underlying equality of men and women in this paper, I will analyze not only the characteristics of internally displaced women, but also those of internally displaced men[1].

Gender and Conflict in Colombia

Donny Meertens has documented changes in the roles played by internally displaced women in Colombia (Meertens 1996;Meertens 2001). She argues that women are victims and survivors of displacement as widows, spouses and leaders. The majority of displaced peasant women were raised in a patriarchal tradition of subjection to male authority characterized by a rigid feminine role centered on domesticity and agricultural activities that occurred close to the home. In a case study on displaced women from the department of Córdoba, Meertens observed that displaced women went to Monteria (the capital city of the department) for three main reasons: because they had family there, because they could achieve anonymity, and because they expected to find jobs more

[1] In this chapter the terms internally displaced persons and forced migrants refer to the same population, and should be considered equivalent.

easily than in a small town. She identifies three key factors in successfully becoming established in the city and in the labor market: specific conditions before displacement; duration since displacement, which is conceptualized as a traumatic psychological event; and stage in family life cycle. She also found that the increase in unemployment for males was more than fivefold the increase for women, a differential partially explained by the agricultural background of males and the difficulties they face in adapting skills to urban labor markets.

The fact that women are more likely to be employed after displacement than men does not mean that their jobs are stable and well remunerated. Internally displaced women are more likely to be employed as domestic servants or in the informal labor market, usually in personal services (Bouta et al. 2005). In the case of Bogotá, recent increases in labor force attachment of mothers of young children has increased the demand for child care and domestic services, which are offered more in the informal than in the formal sector. Among women, research suggests that the presence of children increases the probability of being employed in the informal sector, thus allowing more flexibility for family care (Ibañez 2004;Ribeiro 2003).

The possibilities of return for males and females are distinct. In general, most people reaching regional urban centers are less willing to return to their rural areas of origin (Conferencia Episcopal Colombiana 1995; Ibañez 2004). According to a survey implemented by the *Consultoria para el Desplazamiento Forzado y los Derechos Humanos* (CODHES 1995), only 12% of female heads of household wanted to return. Displaced women in urban areas were more likely to be employed than men and after displacement generally experienced grater power and autonomy. The incentives to return

are less attractive than the incentives to integrate themselves in the cities. Since they are more likely to stay, their motivation to integrate themselves in the urban space and achieve an improved standard of living is likely higher than for males.

Flor Edilma Osorio (Osorio 1997) using data from the Sistema de Información sobre Desplazamiento Forzado y Derechos Humanos en Colombia (SISDES) that was collected by the Consultancy on Internal Displacement and Human Rights in Colombia from 1992 to 1995, found that the number of members per household was larger in displaced female headed households than in male headed households. Regarding education she found that internally displaced women were generally less educated than males because of their restricted access to technical and higher education.

She also found important gender differences regarding the source of aid or help. Women tend to find more support through in their family networks, NGOs, community organizations and the church. Males were more likely to contact unions, political parties, and cooperatives. These differences in the source of social capital might be explained by two factors: traditional male and female roles in the Colombian society, and the need to implement a strategy with as many sources of aid as possible in order to insure survival.

Regarding to the intention of return, Osorio noted that access to land for women is more restricted than for men. Sixty nine percent of female headed households abandoned their land in rural areas and those arriving from the Departments of Córdoba, Antioquia and Cundinamarca registered the highest levels. This pattern implies that families expelled from other departments found strategies to keep their land, such as renting it or asking family or friends to look temporarily after it.

Comparing the occupation profiles of internally displaced women before and after displacement, Osorio observed an increase of employment in domestic services, a decrease in the frequency of homemakers, an increase in petty cash and vendor activities (for both male and women but at lower levels for women), and a decreasing role of women as teachers or educators. For men the most salient trend was increasing unemployment linked to the lower demand for agricultural workers in urban areas and the difficulty of transferring their skills to urban labor markets.

The Solidarity Safety Net, which collects official information on the characteristics of the internally displaced people, provides data on of female headed households with or without partners at the place of reception. Table 1 shows figures at the department level, revealing that in about half of all departments (53%) the size of female headed households is larger than those headed by males. The number of members per household among female headed households ranges from 3.24 to 5.63 members, whereas in male headed households it goes from 3.83 to 5.18 members.

On average, 39% of internally displaced households are headed by women. The department in which this figure is the highest is Atlántico with 50.78%. According to data from the Demographic and Health Survey (DHS) collected in 2000 in Colombia, 28% of households were headed by females and the percentage of female headed households with or without a partner has been growing over time. In 1995 the percentage of female headed households was only 24%. There are considerable rural-urban differences. However, the percentage of male headed households in rural areas is 19% and in urban areas 31.3% (PROFAMILIA 2000). Comparing DHS data with those reported by the

Solidarity Safety Net, it is apparent that the prevalence of female headed households among the internally displaced is higher than in the total population.

To analyze regional patterns and correlations between the patterns of forced migration and the prevalence of female headed households, I used two measures. Intensity of reception was measured by taking the ratio of the accumulated number of internally displaced persons arrived by department from 1995 to April 30, 2005 over the estimated departmental population for 2005 (DANE 1998). A department's relative with respect to internal displacement is measured as the percentile in the distribution of internally displaced persons received by department. The correlation, however, analysis did not reveal any regional patterns or relationship between the prevalence or size of female headed households and either the intensity of reception or the department's ranking as a place of reception. The Pearson correlation coefficients, although positive, were weak and non-significant.

As discussed in the foregoing paragraphs, much of the literature on gender and conflict centers on the position of women as household heads and the burden it implies for them. However, defining who is the household head in the presence of two adult authority figures (usually a husband and a wife) depends on traditional gender roles and power relations within the couple. In Colombia, as in many countries in Latin America, males are traditionally the household heads. This role is changing due to the increasing female education, and labor force participation, which has empowered women. Particularly for the case of internally displaced women it is relevant to explore their role as household heads after displacement, when they are more active in the labor market and

more familiar with activities outside the home, such as political and community organizations.

Osorio (1997) argues that the definition of women as household heads, even when they are bread winners, is diminished by a lack of recognition by the family and society, which only makes quantification more difficult. She distinguishes a non-evident female household headship. Examples of this type of household are those in which the female is working and the male is not and not looking for a job, when the husband is not permanently present but still recognized as the household head, and may be the case of female widows with living with their sons. Although women may be in charge of the provision of resources and the care of household members, males are still recognized as household heads. In this sense Budlender (2003) argues that the classification of the household head should be based on observed characteristics and not on perceptions of household members.

Methodological Approach

In this chapter I describe gender differentials within the internally displaced population and among other migration groups in an urban area of reception. The literature just reviewed emphasized the burden of armed conflict on women and their relative advantage in the urban labor markets. In the next paragraphs I focus on the labor market experiences of internally displaced men and women. Using micro-data from the Experimental Census of Soacha, Cundinamarca that was described in the research design section. I classify the population of Soacha in three groups according to their migration experience: forced migrants, voluntary migrants and non-migrants. Forced migrants

include all those who had ever been forced to leave their usual place of residence as a consequence of the armed conflict (eg. confrontations, personal attacks, family threats or for general insecurity). Voluntary Migrants are those who were not living in the municipality in 1998 (5 years before the census was collected) but were never forced to leave their usual place of residence. Non-migrants are those who were living in Soacha before 1998 and had never been forced to leave their usual place of residence.

To describe gender and household composition differentials among groups I undertake the analysis in three steps. First, I describe the age and sex composition of the population according their individual migration experience. Second, step I analyze differences between the three migration groups with respect to education, civil status, employment status, and occupation standardizing for the population structure of the non-migrant group and restricting attention to household heads. Household heads are normally those who care and provide for other members, and therefore their characteristics and behavior are thus critical to understand the conditions of other household members. I classify the households into four groups: those with head and spouse headed by males, those with head and spouse headed by females, single male headed households, and single female headed households. I use this classification to compare the experiences of the persons in the three migration groups.

In the last step, I estimate the probability of being employed for household heads and then estimate their probability of being employed in the formal or informal sector. The relevant independent variables in this models are whether the household is mono-parental or bi-parental, and in the case of bi-parental if the spouse is employed, duration

since arrival in the municipality, type of migration experience, and gender of the household head.

Demographic Structure and Socioeconomic Composition

Figures 1, 2 and 3 show population pyramids for the three migration groups: non-migrants, voluntary migrants and forced migrants[2] to reveal two salient differences: the voluntary population is concentrated in the working ages and the forced migrant population has more people at older ages and fewer at younger ages than the non-migrant population. The mean age for the voluntary migrant population is 25.51 years, compared with 29.45 years for the forced migrant population and 27.16 for the non-migrant population[3,4].

To better describe the sex composition of the three populations by migrant group Figure 4 shows sex ratios by age group. The graph suggests three age ranges where differences in sex ratios among the groups are relevant. From ages 10 to 25 the sex ratio

[2] Figure 1 in Chapter III (Research Design) contains a graph of the forced migrant population by year of arrival. Seventy three percent of the migrant population arrived to Soacha after 1998. Given the time of arrival to Soacha it is possible to compare them with the voluntary migrant population that is defined for this section of the analysis as the population that arrived to Soacha since 1998 (5 years before the data were collected) and who were not forced to leave their usual place of residence because of the armed internal conflict.

[3] The dependency ratio by migration group and sex was estimated. Non-Migrants (Males=0.6673, Females=0.4232) Voluntary Migrants (Males=0.5186, Females=0.6126) Forced Migrants (Males=0.3934, Females=0.5012). I found some problems with these estimates. First by definition there is no population in the age group 0 to 4 for voluntary migrants, second although the proportion of population over 65 is larger for the forced migrant population than for any other group, the dependency ratio is affected by the low proportion of population in the first age group. In this analysis I am referring to individual migration experiences. In migrant households (according to the migration experience of the household head) there are young children who were born in Soacha and therefore they are for the purpose of these analysis non-migrants although they are living in forced migrants or voluntary migrant households.

[4] To address this caveat I construct the population pyramids for all groups classifying the migration experience for all the members of the household as the migration experience of the household head. The population pyramids are similar. The dependency ratios using this classification are 0.7128 for Non-Migrant Males, 0.7092 for Non-Migrant Females, 0.7089 for Voluntary Migrant Males, 0.6486 for Voluntary Migrant Females, 0.6358 for Forced Migrant Males and 0.6182 for Forced Migrant Females. The dependency ratio for the forced migrant population is the lowest, meaning that there are more working age people in this group per children under age 14 or people over age 65.

among voluntary migrants is lower than among non-migrants or forced migrants. From ages 25 to 55 the sex ratio is high for both the voluntary and forced migrants. Finally, for the population 55 years and older, there are fewer males per 100 females in the voluntary migrant groups than in the non-migrant group, but more males per 100 females in the forced migrant group. This age and sex pattern suggests that the forced migrant population is not positively selected by age, since is not concentrated in the working age groups, or by sex, since for the age group 80-84 the sex ratio is closer to one.

Civil status, education, labor force status and occupation are variables that allow us to detect differences in household stability and socio-economic status. It is well known in the literature that any rupture in a conjugal relation due to separation, divorce or widowhood has negative consequences for well-being (Blanchflower and Oswald 2004; Bradbury and Katz 2002; Lichter, Graefe and Brown 2003). Table 2 shows the distribution of the population by civil status, education level, labor force status and occupation in six groups defined by migration experience and sex [5]. The distribution of the population by civil status shows that female forced migrants are more exposed to widowhood than women in non-migrant or voluntary migrant populations. The forced migrant population is more likely to be in a consensual union than married and less likely to be single than any other group. The proportion separated or divorced is highest for voluntary migrants[6]. This differential pattern of separation and divorce among the migrant groups suggests that forced migration to the metropolitan area of Bogotá consists

[5] Due to the observed differences in the age distribution of the population the distributions presented in Table 2 are standardized by the age pattern of the non-migrant population. Each group by sex and migrant experience totals 1.

[6] In 1991 the Colombian constitution allows divorce. The proportion of persons divorced is very low. For this reason I report a combined category with persons separated or divorced.

more frequently of couples with children and other family members than of single-headed households.

The distribution by education level[7] shows that voluntary migrants are on average more educated, followed by non-migrants. Forced migrants are the least educated group. The lower level of education among forced migrants might reflect their rural background and restricted access to education in areas of origin (Conferencia Episcopal Colombiana 1995). For all groups, women generally reported slightly more education than men; but men reported more frequently labor force participation than women. Comparing the forced migrant population with the voluntary migrant population we see that forced migrants are less likely to be employed and more likely to be looking for a job (unemployed) or in some 'other situation'. The pattern is similar for forced migrant men and women.

Among those who were employed the distribution by level of occupation was similar for non-migrants and voluntary migrants. Voluntary migrants reported more employment in the private than in the public sector. Although occupational distributions are similar for all groups, at the margin forced migrants were more likely to be employed as blue collar workers, in domestic services, or self employed. These occupations are usually linked to activities in the informal labor market. Among blue collar workers, males were predominant and females were about 10 times more likely to be employed as in domestic workers than males.

In conclusion, forced migrants are not completely different from non-migrants and voluntary migrants in their marriage, education and labor patterns. However, I identify four different contrasting characteristics between the groups: forced migrants are

[7] Level of education is available. Years of education were not reported.

more likely to be in consensual unions or widows; they are more frequently unemployed or not participating in the labor force; and among those who are in the labor force, they are more likely to be employed as blue collar workers in the informal sector or in domestic services.

Household Heads, Types of Households and Migration Experiences

The second part of the analysis examined the characteristics of household heads (sex, civil status, education level, status in the labor force and occupation level) by type of household and migration group. I classify households into two types: those with a single head and those households with spouse present. The second row in Table 3 shows proportions of male and female household heads by type of household and migration group standardized using the age distribution of non-migrant household heads.

The prevalence of single female-headed households is not the highest for the forced migrant group (20.53%), although it is higher than for the voluntary migrant population (18.53%), it is lower than for non-migrants (22.51%). As the literature suggests, the prevalence of single-female headed households is larger among forced migrants than for migrants in general; however, it is not higher than the prevalence of the host population.

Although single female headed households are not more frequent among forced migrants than among non-migrants, the percentage of households with spouses headed by females is larger for forced migrants than for any other migrant group. According to the literature, this higher prevalence is explained by the easy engagement of women in urban labor market activities, especially in the informal sector, and the consequential shift in the

power relations among couples. These patterns suggest that the forced migrant families arriving in Soacha, or in the metropolitan area of Bogotá generally, are a selected group in which the spouse is present. Forced migrant households that arrive to other smaller cities or towns may be less selected, yielding a higher prevalence of single-headed in other areas of the country.

A point of contention, as mentioned before, is the recognition and definition of who is the household head. A household head is defined as "resident household member who is recognized as the head by other members of the household, usually is the father, the mother or the principal provider" (DANE 2003). There are no a clear and objective criteria to define who is the head. The definition of household head used by the Solidarity Safety Net and the Department of Statistics in Colombia is subjective and depends on where, when, and who is answering the declaration of displacement or the census questionnaire. This lack of objective definition might be responsible for the observed differences between the data reported in Tables 1 and 3.

Non-migrant households have on average larger households than forced migrant households and voluntary households. Voluntary households have the smaller households on average. Differences is household size might be explained by differential fertility patterns[8] among the groups, or by differential family disintegration suffered in the process of forced migration. Unfortunately there are no data available to explore if forced migrant households are complete or there are other members in hiding at places of origin looking after the family patrimony.

[8] The 2000 Demographic and Heath Survey in Colombia has a supplemental sample of forced migrant women. I am planning to explore fertility differentials in populations with different migrant experiences using these data in the near future.

In Table 3 we can observe that consensual unions are more common among the forced migrant population. Among households with spouse present, forced migrant women are more likely to be in consensual unions than forced migrant men. A large difference is observed among females in single-headed households. There are only 18.51% of forced migrants in this group relative to 25.78% for non-migrants and 29.89% for voluntary migrants. Once again the data indicate that forced migrant women are more likely to be living in households with spouse present than in single-headed households.

Patterns of education for household heads are similar to those for the whole population. Among single-headed households, female heads seem to be advantaged, on average. In households with spouse present, men seem to have more education. For the highest level of education, some or completed professional, men in all cases showed advantage. In particularly, the data show large differences in professional education between forced migrant men and women in single-headed households. Only 1.23% of forced migrant women reported having some or completed professional education while 5.28% of forced migrant men in this household category did. Among forced migrant males, those in single-headed households evinced in the highest education level although slightly lower than the level observed for non-migrant males living in single-headed households. In conclusion, forced migrant household heads generally are at a disadvantage because their education level is the lowest, and forced migrant women are the least educated. Therefore, the economic performance of forced migrant households headed by women is expected to be poor relative to the other groups.

The labor force status of forced migrant household heads resembles that of the general population, with a large percentage employed followed by smaller share out of

the labor force and the unemployed. Nevertheless, the data reveal that forced migrant heads are more likely to be unemployed or out of the labor force than heads in any other group; and forced migrant female household heads are even less likely to be employed than forced migrant men. The patterns of employment by sex are different. Women are less likely to be in the labor force and more likely to be unemployed in all cases. In the case of forced migrants, the literature indicates that forced displaced men of rural origin are less likely then women to be employed in the urban labor market. The data on Table 3 shows that the employment patterns by sex are similar for all groups and that forced migrant males more frequently engage in labor force activities than forced migrant women.

The distributions by occupational level indicates that, in general, forced migrants are more likely to be *jornaleros o peones* (blue collar workers) or in domestic services than any other group. Comparing across household types, it is observed that, except for forced migrant women, heads in single-headed households are more likely to be employed in occupations linked to the informal labor market. Forced migrant female heads in households with spouse present are slightly more likely to be employed in the private or public sectors than being self- employed or employed in domestic services. In general, forced migrants reported less frequently employment in the private or public sectors.

Differential Performance in the Labor Market

Successful integration of forced migrants into host cities depends in large part on performance in the urban labor market. In this section I will explore the differential labor

market participation of men and women and compare it across the different migrant groups. In order to include the positive cumulative effects of time since arrival in the municipality, the definition of migration experience is changed. Non-migrants are those who were born in Soacha and have always lived there. Forced migrants are those who were forced to abandon their usual place of residence at any point in their lives and were living in Soacha on May 23, 2003. Voluntary migrants are persons who arrived to Soacha at any points in their lives.

To explore the probability of employment I estimate the following basic model:

$$\log\left(\frac{p_i}{1-p_i}\right) = \alpha + \beta_1 M_i + \beta_2 X_{iP} + \beta_3 X_{iH}$$

where:
p_i= the probability of being employed
M_i=Type of Migration Experience
X_{iP}=A vector of individual characteristics
X_{iH}=A vector of household characteristics

Table 4 contains basic descriptive statistics for the variables included in the model. The variables at the personal level are: sex, age, civil status[9] and education level. This set of variables as well as the dependent variable has been discussed at length in previous paragraphs. The vector of variables at the household level has two independent variables and a set of controls. The first independent variable is the type of household, single-headed household or household with spouse present. The second variable is

[9] The specification of the model requires that all heads in households with spouse present are married or in consensual union, for a correct specification of the model this variable is modeled as an interaction with type of household.

whether the spouse is employed, conditional on household type. In 41.7% of the households with spouse present, the spouse was employed. The control variables are employment status of other household members, socioeconomic-index[10], and presence of minors under age 14.

Table 5 shows coefficient estimates of the first model. The estimate for the forced migrant dummy indicates that *ceteris paribus* on average the probability of employment[11] for a forced migrant is 0.09 less than for a person was born and have always lived in Soacha. In contrast, the average probability of employment for a voluntary migrant is 0.041 higher than for a non-migrant. The coefficient for sex indicates that on average the probability of employment for men is 0.19 higher than for females. Single household heads are more likely to be employed than married heads married, those in consensual unions or the widowed. The coefficients for education suggest a positive and increasing relation of employment with level of education.

Looking at the second set of variables for household characteristics we notice that heads in households with a spouse present have a 0.038 higher probability of being employed than heads in single-headed households. Employment status of other households members is also positively related to the probability of employment of the household head, as are socioeconomic index and presence of minors under age 14.

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[10] The socioeconomic index was created by regressing the log-odds of employment on 9 items of durable goods and access to infrastructure and services. The index was estimated using the following model: ses=0.5553+(fridge*0.1945)+(washer*0.1909)+(boiler*0.1053)+(oven*0.2241)+ (tv*0.5219)+(cable*0.1178)+(internet*0.2140)+(sewage*-0.0799)+(gas*-0.1303)+ (phone*-0.0104)+(running water 7 days*0.0635)+(garbage pickup*0.0354)+(dwelling ownership*-0.3807) / Likelihood Ratio: 2209.862, Pr<.0001

[11] $\frac{\partial p_i}{\partial x_i} = \beta p_i(1-p_i)$, where p_i is on average the proportion of persons employed.

The second step in the analysis is to look for the cumulative effects of time. If forced migrants have arrived recently to the city, then their disadvantage in the labor market might be explained by the lack of time to adapt to the new conditions. The second model includes duration since arrival to Soacha for forced migrants and voluntary migrants. This variable is estimated subtracting from the year of the census (2003) the reported year of arrival to the municipality. The model is as follow:

$$\log\left(\frac{p_i}{1-p_i}\right) = \alpha + \beta_1 X_{iP} + \beta_2 X_{iH} + \beta_3 M_i * T_i$$ [12]

where:
T_i=Vector of variables measuring time since arrival to the municipality of Soacha

The coefficient estimates for this model are presented in the last columns of Table 5. The coefficients for years since arrival for the forced migrant population and the voluntary migrant population suggest diverging trajectories over time. Figure 5 shows the estimated probabilities of employment for hypothetical non-migrant, voluntary migrant and forced migrant males who are aged 20 at the beginning of the period that will live until age 40 and will experience changing probabilities based on the experiences of the

[12] The specification of the model was reviewed several times. I estimated the model using each year for a total of 20 years as a dichotomous variable to see of there were any nonlinearities. In this model I appreciate that the effect of time was in general uniform; however the estimated coefficients were not very robust given the number of observations per year for the forced migrant population. In a second step I grouped time in 5 year periods. The resulting model was not robust. Finally I tried to include time since arrival as a continuous variable and the specification with the best measures of goodness of fit are presented in table 5.

people living in Soacha.[13] The probability of employment increases over time slightly more for voluntary migrants and for non-migrants, but in both cases is positively related with time. In the case of forced migrants the probability of employment decreases over time almost constantly. Although the Colombian armed conflict has a long history and has caused the displacement of population since the mid 1940's, displacement caused by the armed conflict was not as frequent and generalized through out the country as in the last ten years. Therefore, the estimations presented in this chapter are based on the experienced of the forced migrant population in Soacha[14].

If employment prospects of forced migrant males are pessimistic, forced migrant women should be of greater concern to the Colombian authorities. Figure 6 shows the probability of employment over time for females[15]. As discussed previously the probability of employment is lower for females than for males regardless of duration of residence in Soacha or migration experience. The main difference is that probability of employment decreases faster with time for forced migrant females than for forced migrant males.

The discussion in the last section indicated different patterns occupational achievement for forced migrants relative to non-migrants and voluntary migrants. According to the literature, forced migrants are more likely to be employed in occupations linked to informal activities in the labor market than to formal activities. This pattern is explained by their relatively low educations and lack of skills to participate in

[13] The hypothetical male is aged 20 at the beginning of the trajectory, married, living with an unemployed spouse, with completed middle school, other household members unemployed, socioeconomic index of one (near to mean).
[14] As shown in the research design chapter, almost 2/3 of the forced migrant population arrived after 1997.
[15] I used the same values for all variables than for the estimation of employment for males shown in Figure 5.

the urban labor market. In order to model sector of employment of the population I included a crude proxy for informal employment[16], using occupation categories to define a dichotomous variable that indicates if the person is working in an informal or formal job. If the person is an employee in the public or private sector or an employer, then he/she is considered a formal worker. If the person is a *jornalero o peón* (blue collar worker), worker in domestic services, self employed or unpaid family worker, then he or she is considered an informal employee.

Since informality is a characteristic of being employed, it can no be included in the model as an independent variable[17]. The next step in the analysis is to estimate a multinomial regression model with the following specification:

$$\log\left(\frac{p_{iF}}{p_{iI}}\right) = (\alpha_F - \alpha_I) + (\beta_{1F} - \beta_{1I})X_{iP} + (\beta_{2F} - \beta_{2I})X_{iH} + (\beta_{3F} - \beta_{3I})M_i * T_i$$

where:
p_{iF}= probability of being employed in a formal occupation
p_{iI}= probability of being employed in an informal occupation

This model estimates the probability of employment in the informal or formal labor market. Results are shown in Table 6. The model suggests that males are more likely to be employed than females. Comparing the coefficient for both models it is noticed that education is not relevant for employment in the informal labor market. At the

[16] I tried to build a stronger measure of informal employment based on the occupation categories included in an open ended question asked during the Census. However, it has been problematic to have access to the appropriate occupation codes.
[17] I tried to estimate this model using a two-stage bivariate probit that seem to be appropriate in this case, since the classification of the occupation depends on the employment status. However it was computationally burdensome and did not converge after several attempts.

household level the presence of spouse in the household is positively related with the probability of employment. However, for employment in the informal market the relation with spouse presence has a marginal negative effect[18].

Controlling for type of occupation (formal vs. informal) allow us to describe divergent labor trajectories for forced migrants. Figure 7 shows the labor trajectories of the three groups of migrants in the formal occupations. As in the binary model, the probability of employment for forced migrants decline over time, and diverges from voluntary and non-migrants.

Second, non-migrants are less likely to be employed in the informal sector while voluntary migrants are more likely. Third, at the beginning of the period, forced migrants are as likely as voluntary migrants to be employed in the informal market, but as time passes, this probability declines and converges to the probability level of the non-migrant population. This does not mean that forced migrants integrate in the labor market as the non-migrants. It means that their probability of informal employment diminishes over time relative to the other migrant groups. Although their chances of finding a job in the informal labor market increases over time, the rate of increase is lower than for the non-migrant and voluntary migrant groups.

Since the focus of this chapter is on gender and the descriptive statistics mentioned before show that employment patterns are different for men and women I estimated the former model separately for male heads and female heads. The estimated coefficients for males, shown in Table 7, suggest a positive association between marriage

[18] The data used in this chapter is Census data from the municipality of Soacha. The coefficients apply for the population weather they are statistically significant or not. However, given the sample size the non-statistically significance of a coefficient suggest that the contribution of the variable in explaining the variation in employment is low.

and employment in the formal sector, but a weak negative association between being married and employed in the informal sector. Estimates for education level show a strong association with formal employment but a weak association with informal employment, as expected.

Household characteristics show negative relation with the probability of male employment of males for all groups. Households with spouse present are less likely to be employed in the informal labor market, and slightly less likely to be employed in the formal jobs. The presence of an employed spouse has positive effects, and these effects are larger in the case of informal employment. The presence of minors under age 14 is also positively associated with the probability of employment and the relation is larger for informal employment.

The comparison of the expected labor trajectories are shown in Figures 9 and 10. The probability of formal employment declines over time for all groups. However, the decrements for the non-migrant population and the voluntary population are marginal and the trajectories of both groups converge at the end of the period. The decrements in the probability of formal employment for forced migrant men head of household are substantial. The probability of informal employment increases over time for all groups at a decreasing rate. Voluntary migrants show the largest gains, followed by non-migrants. The trajectory for forced migrant males is almost flat over time. At the beginning of the period it was higher than for the non-migrant population but at the end of the period it is lower.

Table 8 shows coefficient estimates of the multinomial logit regression for women. The results suggest a negative relation between marriage and widowhood and the

probability of employment in the formal and informal labor markets. Although women on average were more educated than males, coefficients show that there is a weak positive relation between women education and employment in the formal sector and a negative association between womens' education and the probability of employment in the informal sector. The presence of a spouse has a positive association with formal and informal employment; however, the relation with formal employment is larger and more robust. The presence of a working spouse although positive is weak. The presence of minors under age 14 has a weak negative association with the probability of formal employment and a strong and higher positive association with the probability of informal employment.

Figures 11 and 12 show the labor trajectories over time for females in the formal and informal labor markets. The probabilities of employment for women in the formal sector are higher than for employment in the informal sector, as for males. The time trends for employment in the formal sector increases over time for all groups, but the rate of increase is marginal for forced migrant female heads of household. In the case of informal employment the probability increases over time for all the groups but the rate of increase is larger for the forced female migrant population.

Comparing the labor trajectories of forced migrant men and women it is observed that: 1) in all cases men have higher probabilities of employment than women; 2) over time and in comparison with the other migrant groups, forced migrant males are experiencing declining probabilities of formal employment and constant probabilities of informal employment; 3) over time women are experiencing increasing probabilities of formal employment, the trajectory of forced migrant women is consistent with this trend,

however the probability at all times is lower for non-forced migrant females; and 4) Although the probability of being employed in the informal labor market for women is the lowest, the trend for forced migrant females is increasing and closer to the voluntary migrant population.

Conclusions

Views from the literature on gender and conflict that repeatedly cite the advantages experienced by female forced migrants who have resettled in urban areas are not supported by the findings presented in this chapter, or at least not in Soacha, Cundinamarca. Although the data suggest that the probability of employment increases among forced migrant women over time, the probability of employment for forced migrant men is always higher; as is the case between non-migrant and voluntary migrant males and females.

Another characteristic of female forced migrants that does not follow what is described in the literature concerns the prevalence of female single-headed households. Among the forced migrants observed here, it is not higher relative to voluntary migrant females. I do, however, observe a high prevalence of female heads in households with spouse present. This pattern might imply a selection process within the forced migrant population. On average, the likelihood that couples with children reach large cities may be higher than for single-headed households. The conditions of single-headed households may only allow them to reach small towns or medium size cities near their places of origin. Although, traveling grater distances with fewer people might be easier, the help

provided by a male spouse in the migration process may increase the likelihood of reaching Bogotá.

The problem among forced migrants is the low probabilities of formal employment they register and their inability of catching up with the voluntary and non-migrant groups. Their relative disadvantage in the labor market is partially explained by their low levels of education. However, other factors are playing an important role in restricting the access of forced migrants to the urban labor markets. I argue that the lack of credentials, the difficulty in transferred their skills and unmeasured motivations can explain their relative disadvantage. Voluntary migrants are more likely to be selected for ambition and drive.

The increasing trend in the probability of informal employment for forced migrant women shows that they are engaging in income generating activities that are crucial for survival. However, this employment pattern might not be beneficial in the long-run. Forced migrant households are likely to be less economically disadvantaged than non-migrant and voluntary migrant households[19] and the increasing employment of forced migrant women and men in the employment sector does restrict their access to fringe benefits and health care.

[19] Evidence of forced migrant socio-economic disadvantage is presented in Chapter V.

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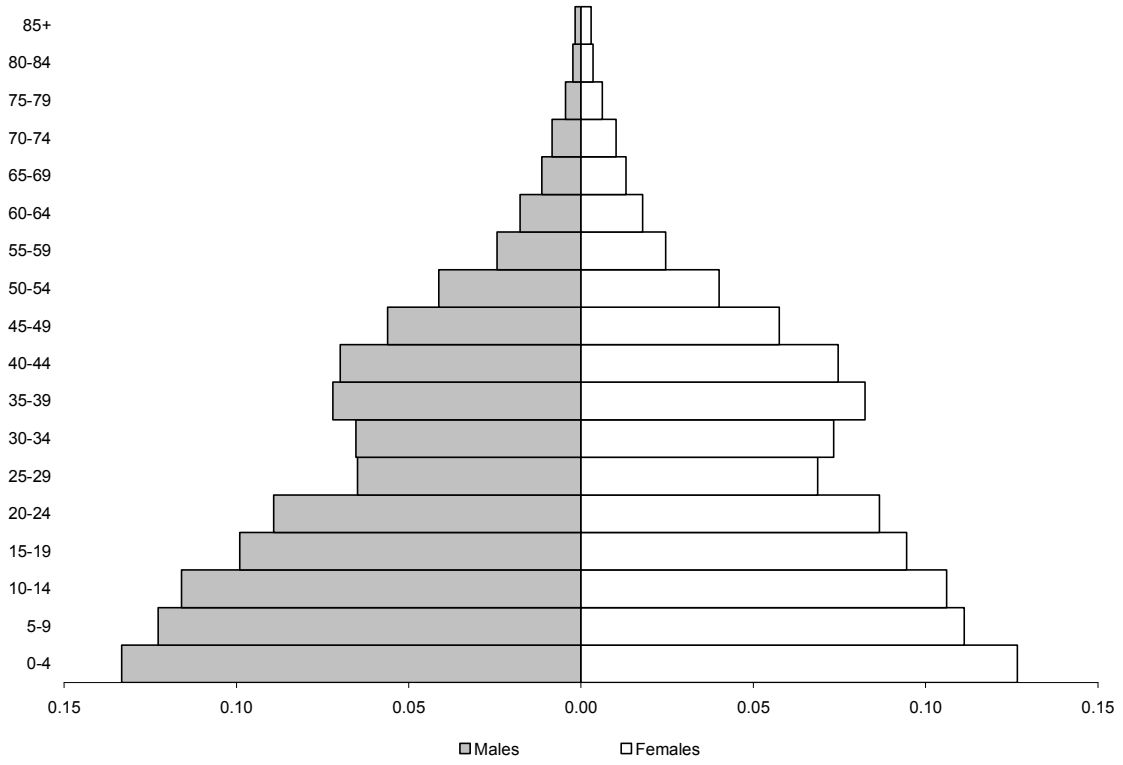
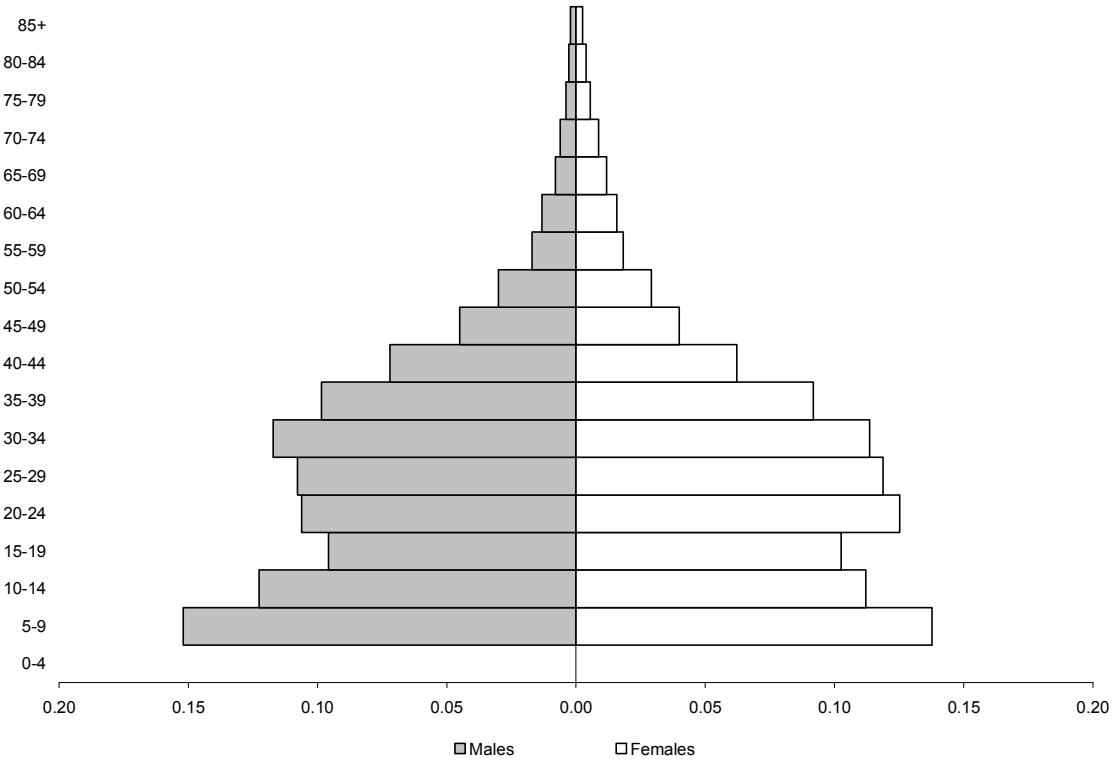
Figure 1. Population Pyramid of the Non-Migrant Population residing in Soacha, Cundinamarca on May 25, 2003



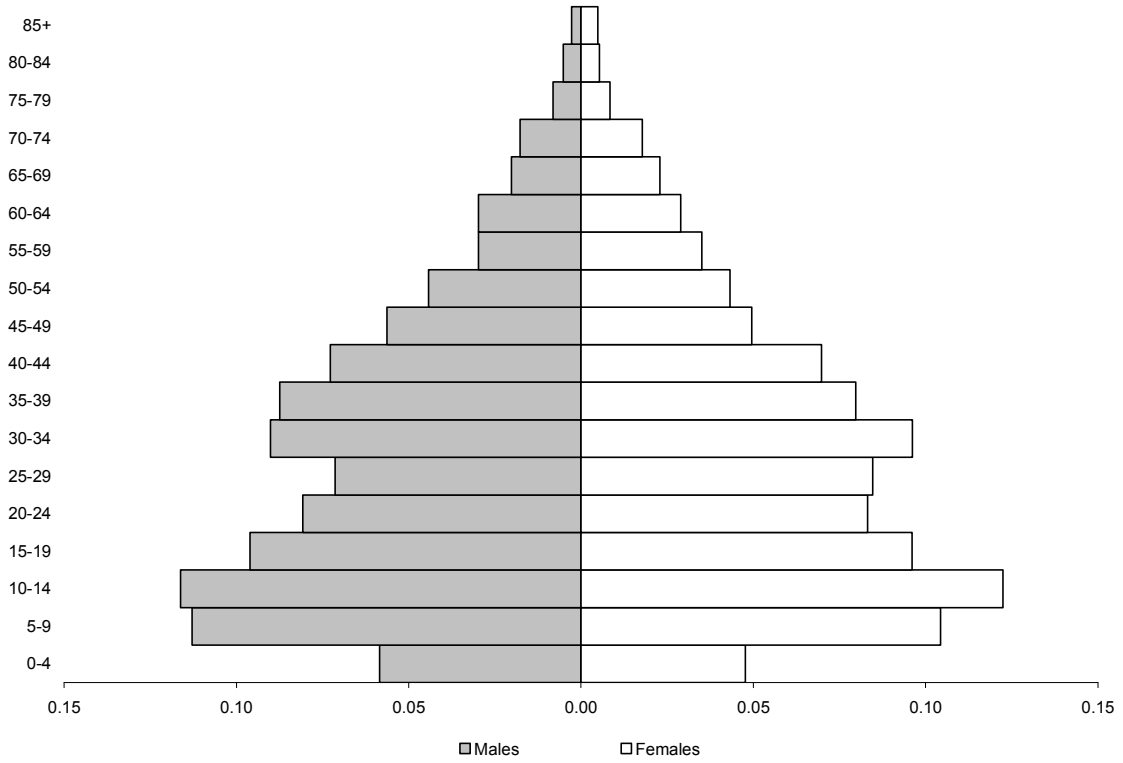
Source: Experimantal Census of Soacha, DANE, own calculations

Figure 2. Population Pyramid of the Voluntary Migrant Population residing in Soacha, Cundinamarca on May 25, 2003



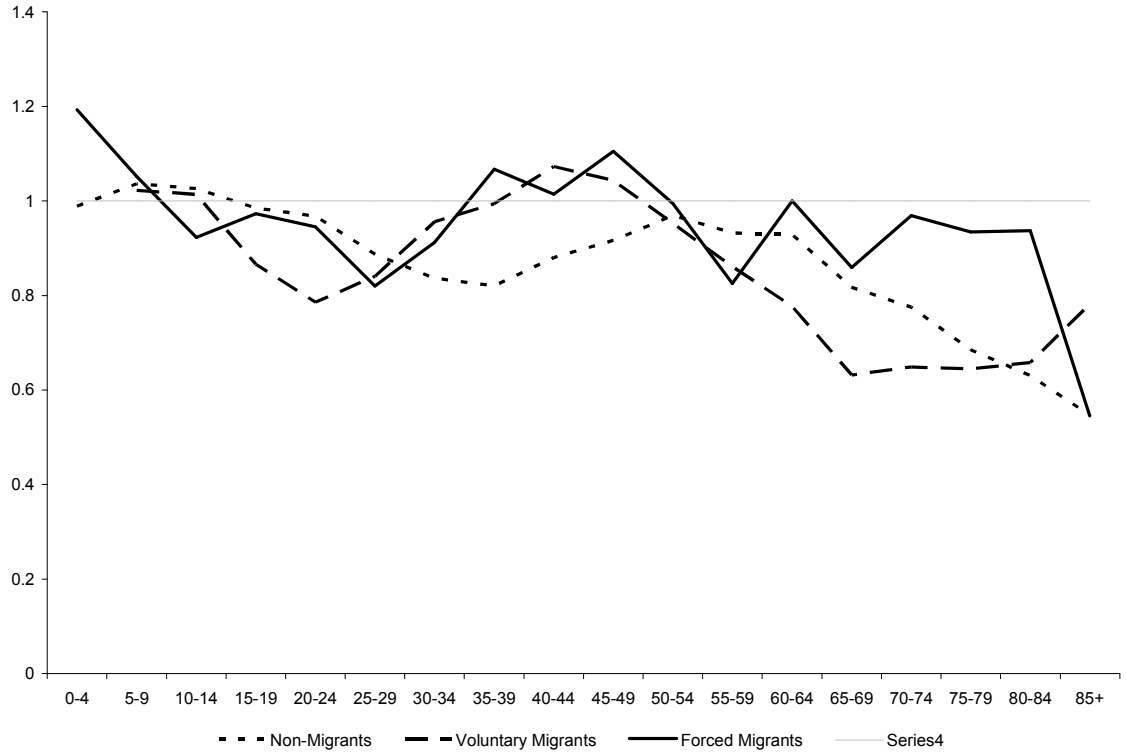
Source: Experimantal Census of Soacha, DANE, own calculations

Figure 3. Population Pyramid of the Forced Migrant Population residing in Soacha, Cundinamarca on May 25, 2003



Source: Experimantal Census of Soacha, DANE, own calculations

Figure 4. Sex Ratio by Age Group of Population residing in Soacha, Cundinamarca on May 25, 2003



Source: Experimantal Census of Soacha, DANE, own calculations

Figure 5. Predicted Probabilities of Employment for Males (Binary Logit)

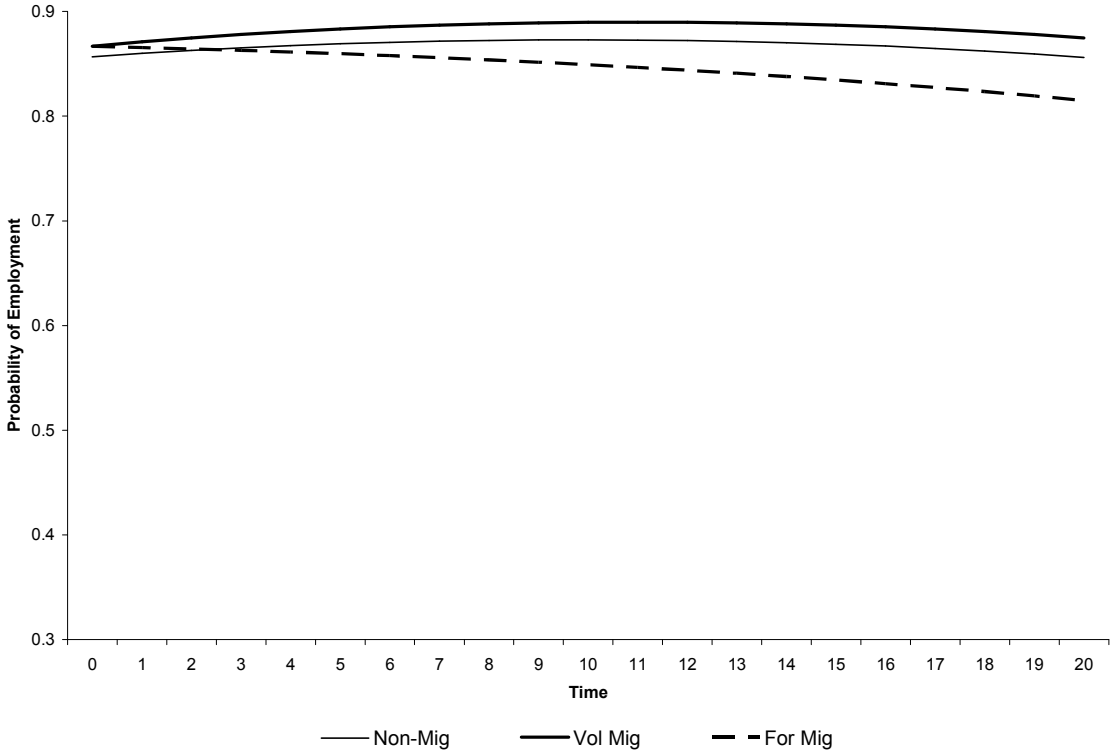


Figure 6. Predicted Probabilities of Employment for Females (Binary Logit)

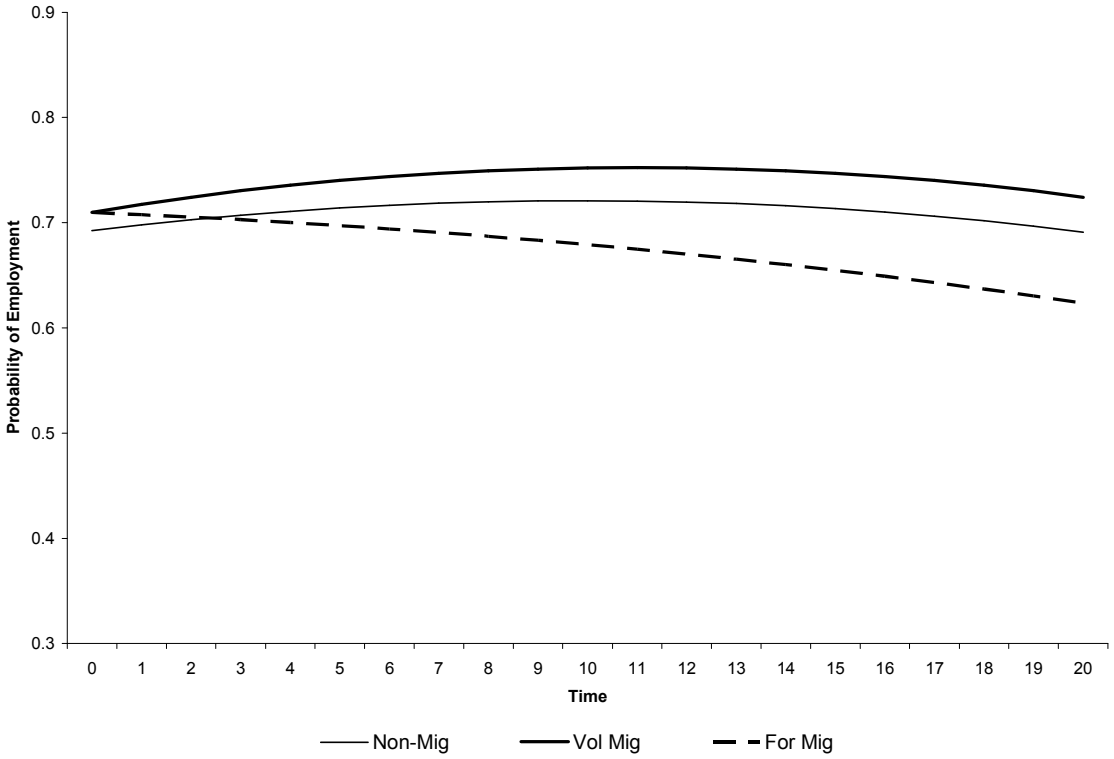


Figure 7. Predicted Probabilities of Formal Employment for Males
(Multinomial Logit-General Model)

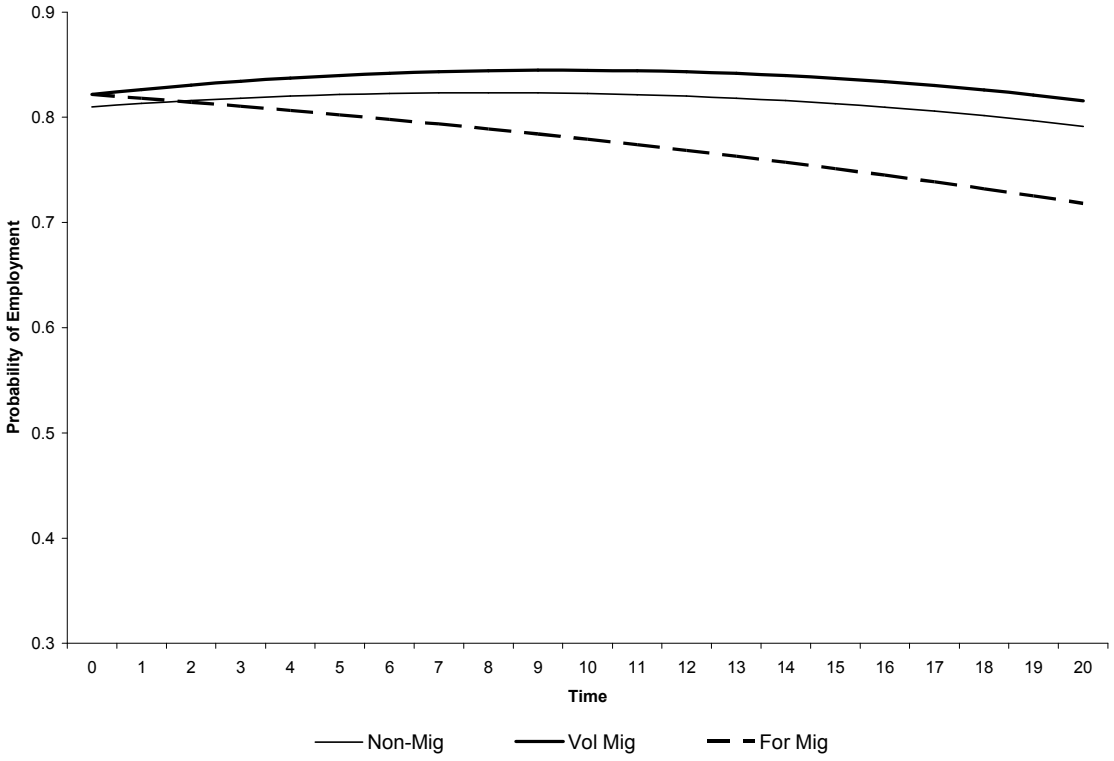


Figure 8. Predicted Probabilities of Informal Employment for Females
(Multinomial Logit-General Model)

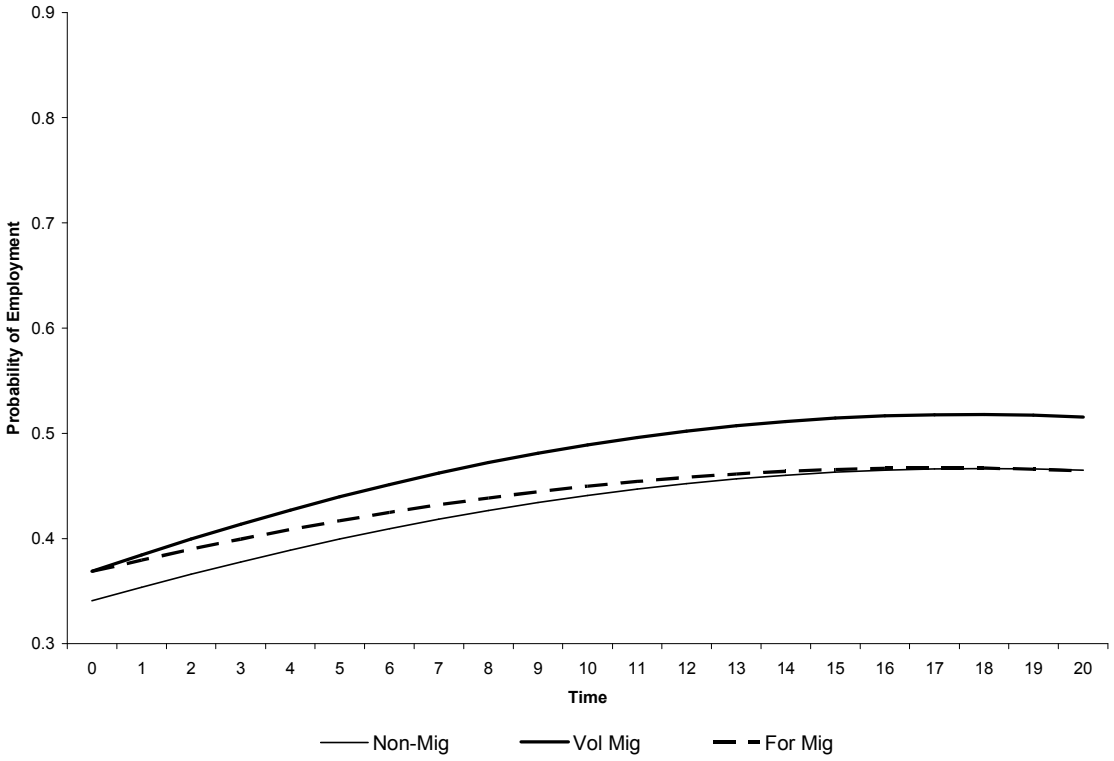


Figure 9. Predicted Probabilities of Formal Employment for Males
(Multinomial Logit, Gender Specific Model)

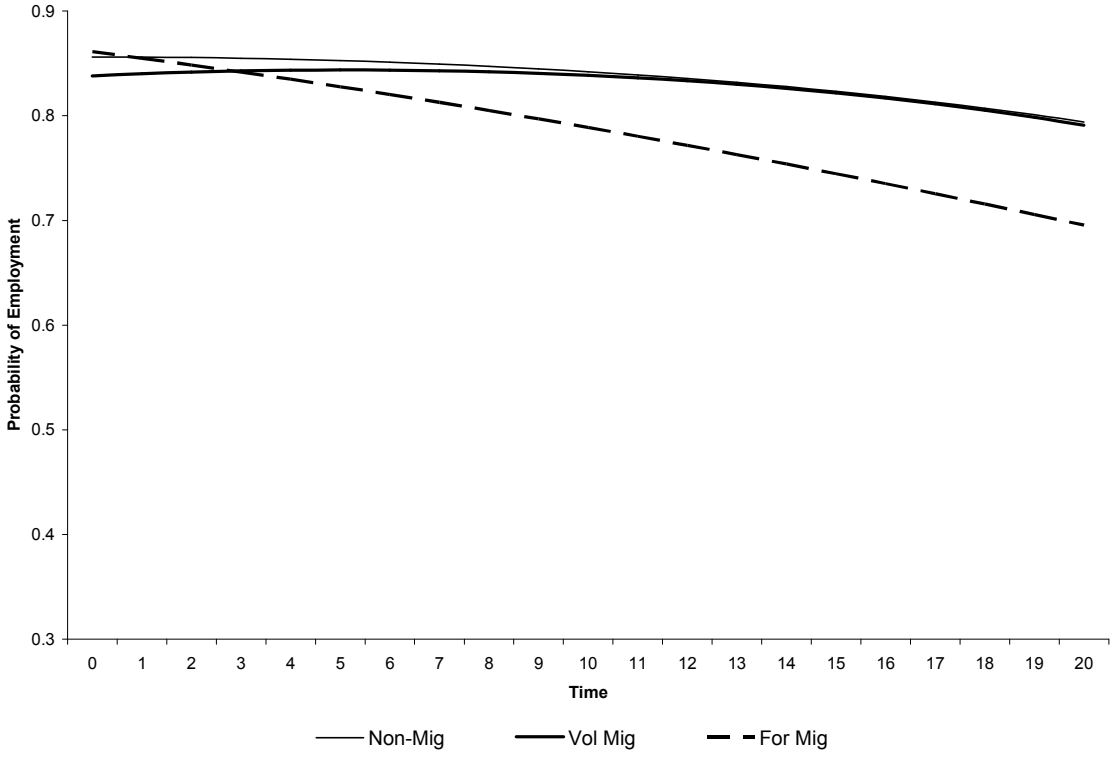


Figure 10. Predicted Probabilities of Informal Employment for Males
(Multinomial Logit, Gender Specific Model)

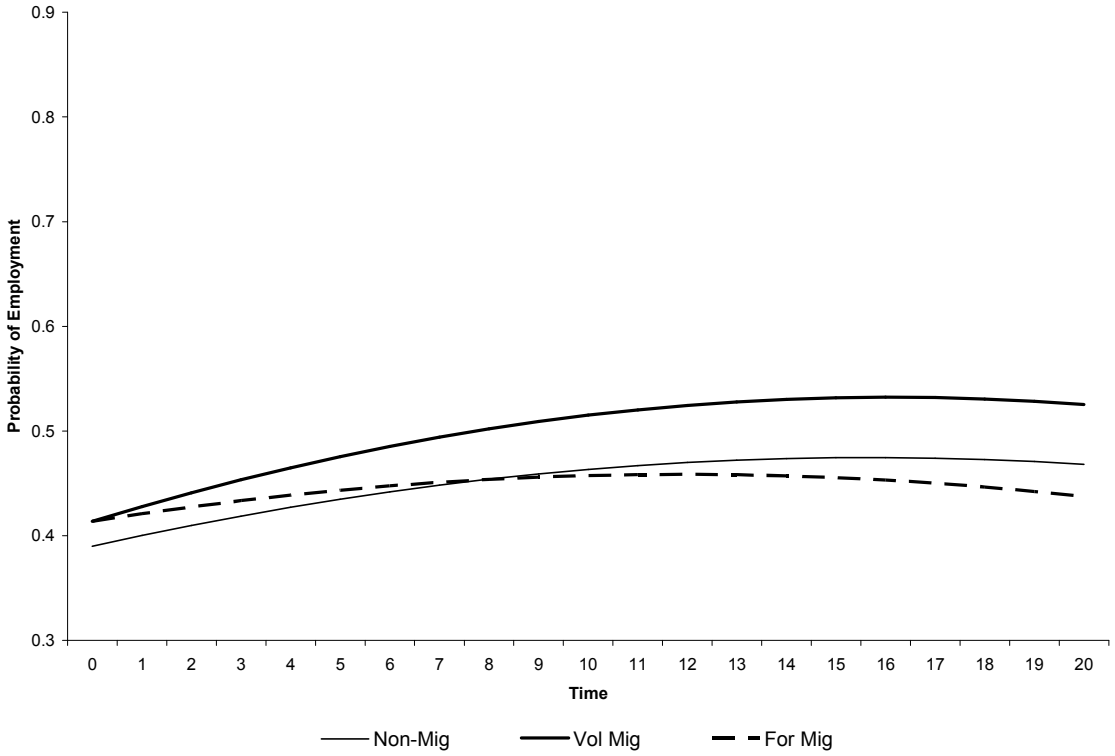


Figure 11. Predicted Probabilities of Formal Employment for Females
(Multinomial Logit, Gender Specific Model)

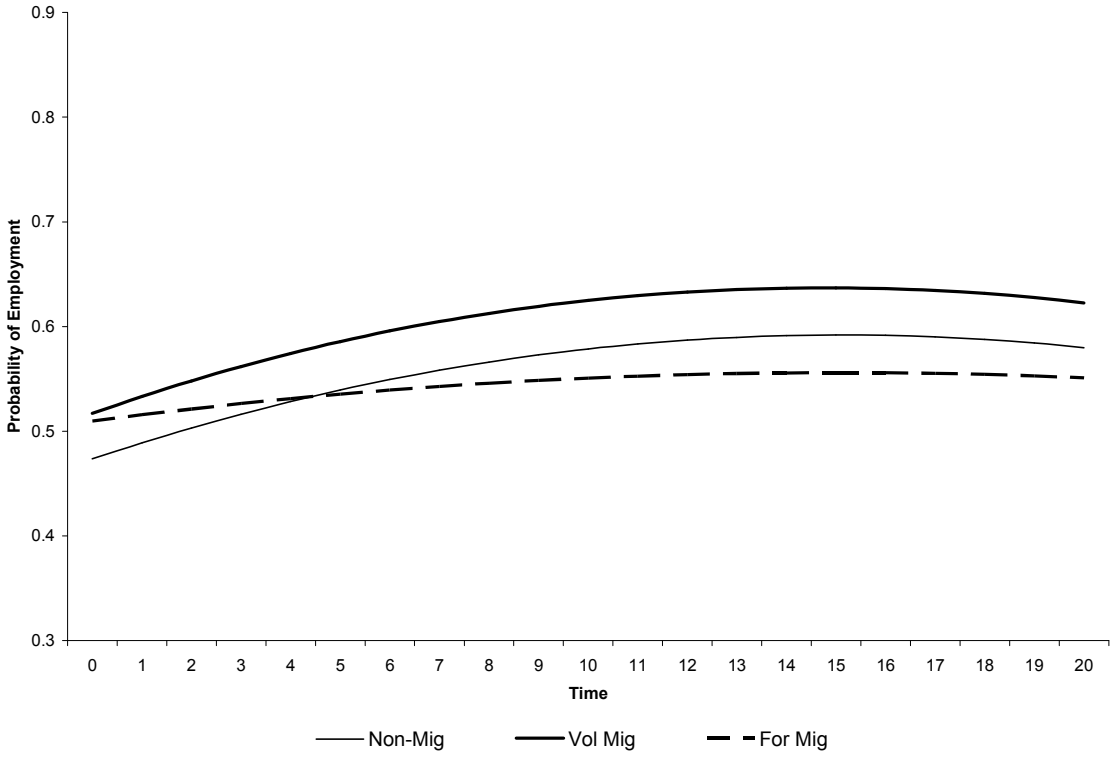


Figure 12. Predicted Probabilities of Informal Employment for Females
(Multinomial Logit, Gender Specific Model)

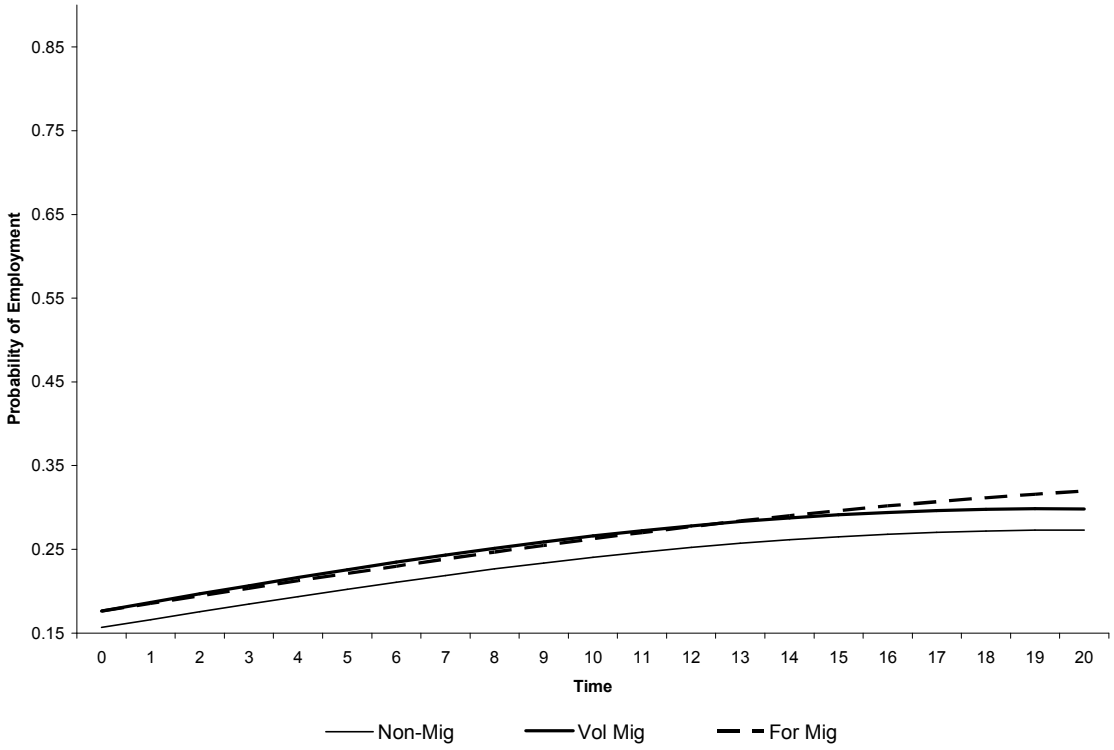


Table 1. Characteristics of Internally Displaced Households and its Characteristics by Household Head's Gender

Region [b] and Departament	Number of Members per Female Headed Household	Number of Members per Male Headed Household	Percentage of Female Headed Households of Total Households	Intensity of Reception (Received IDPs/Tot Pop)	Distribution of IDP population
Capital					
Bogotá	4.07	3.88	43.16%	1.31%	5.86%
Atlantic					
Atlántico	4.58	4.21	50.78%	2.56%	3.77%
Bolivar	4.50	4.36	35.68%	5.29%	7.34%
Cesar	5.36	5.02	41.26%	7.76%	5.08%
Córdoba	4.76	4.59	43.45%	4.87%	4.23%
La Guajira	4.44	4.81	37.31%	5.97%	1.95%
Magdalena	4.66	4.68	35.21%	7.02%	6.13%
Sucre	5.02	4.83	50.64%	12.23%	6.62%
Central					
Antioquia	4.41	4.52	32.24%	4.34%	15.53%
Caldas	3.99	4.39	17.04%	2.15%	1.56%
Caquetá	4.87	4.62	45.92%	8.67%	2.51%
Huila	4.57	4.33	45.40%	2.92%	1.81%
Quindío	3.78	3.90	46.75%	1.66%	0.63%
Risaralda	4.37	4.50	37.82%	2.42%	1.54%
Tolima	4.23	4.31	57.35%	2.78%	2.28%
Pacific					
Cauca	4.49	4.76	36.73%	2.58%	2.19%
Chocó	4.67	4.39	18.08%	12.68%	3.28%
Nariño	4.13	3.83	46.31%	2.59%	2.86%
Valle del Cauca	4.52	4.64	14.92%	2.19%	3.77%
North Eastern					
Boyacá	4.01	3.87	37.88%	0.52%	0.45%
Cundinamarca	4.47	3.84	37.79%	1.59%	2.31%
Meta	4.28	3.94	42.61%	5.73%	2.75%
Norte de Santander	5.17	4.94	36.54%	3.32%	3.08%
Santander	4.78	4.27	41.73%	3.25%	4.21%
Eastern					
Amazonas	5.63	3.96	18.39%	0.46%	0.02%
Arauca	3.90	4.30	35.37%	3.41%	0.60%
Casanare	4.25	4.31	33.60%	3.82%	0.77%
Guanía	4.22	5.18	26.32%	2.17%	0.06%
Guaviare	3.65	4.18	32.10%	10.07%	0.84%
Putumayo	4.74	4.53	46.99%	10.10%	2.38%
Vaupes	3.24	4.72	31.76%	2.18%	0.04%
Vichada	3.89	4.33	35.14%	1.45%	0.09%
Total [a]	4.56	4.44	38.75%	3.49%	100%

a. The department of San Andres and Providencia and the data with not state available is not included in the table but it is considered for calculations

b. I used the regions defined by the Demographic and Health Survey 2000. The departments of Antioquia and Valle del Cauca are usually considered in Colombian official statistics each one as unique regions given the differences between them and the economic activity of the adjacent departments.

Source: Solidarity Safety Net, figures updated figures until April 30, 2005. DANE, own calculations

Table 2. Age Standardized Distribution of the Population Residing in Soacha Cundinamarca on May 25, 2003 by Migration Experience and Socio-demographic Characteristics [d]

Socio-demographic Characteristic	Non-Migrants		Voluntary Migrants	
	Males	Females	Males	Females
N	139,033	147,960	28,038	30,237
Civil Status [a]				
Consensual Union	0.2670	0.2484	0.3193	0.3010
Separated or Divorced	0.0352	0.0853	0.0513	0.1027
Widowed	0.0100	0.0474	0.0105	0.0506
Married	0.2460	0.2293	0.2092	0.1893
Single	0.4418	0.3896	0.4096	0.3564
Education Level [b]				
None	0.0740	0.0753	0.0300	0.0345
Some primary	0.2578	0.2428	0.2634	0.2541
Completed primary	0.1461	0.1477	0.1663	0.1674
Some middle school	0.1890	0.1843	0.2039	0.1980
Completed middle school	0.0610	0.0667	0.0632	0.0679
Some or completed high school or other technical	0.2216	0.2312	0.2249	0.2358
Some or completed professional	0.0506	0.0520	0.0483	0.0423
Labor Force Status [a]				
Employed - active	0.5344	0.3406	0.5607	0.3471
Employed - inactive	0.0260	0.0217	0.0237	0.0209
Unemployed	0.0970	0.0698	0.0937	0.0674
Students	0.1990	0.1921	0.1838	0.1699
Homemakers	0.0338	0.2830	0.0352	0.3046
Retirees	0.0224	0.0126	0.0162	0.0099
Other	0.0873	0.0802	0.0867	0.0803
Occupation Level [a,c]				
Employee in Private sector	0.6756	0.6609	0.6802	0.6863
Employee in Public sector	0.0735	0.0889	0.0667	0.0629
Jornalero o Peón (blue collar worker)	0.0111	0.0035	0.0116	0.0047
Worker in domestic services	0.0072	0.0359	0.0048	0.0399
Self employed	0.1850	0.1524	0.1913	0.1514
Employer	0.0375	0.0293	0.0365	0.0286
Unpaid family worker	0.0101	0.0291	0.0090	0.0262

a. For the population 10 years old and older. b. For the population 3 years old and older. c. For the population in the labor force. d. Non-migrant population used as standard.
Source: Experimental Census of Soacha, Cundinamarca, DANE, own calculations

Table 3. Age Standardized Distribution of Household Heads Residing in Soacha Cundinamarca on May 25, 2003 by Migration Experience and Socio-demographic Characteristics [a]

Socio-demographic Characteristics	Non-Migrants				Voluntary Migrants				
	Single-Headed		Head and Spouse		Single-Headed		Head and Spouse		Sing
	Males	Females	Males	Females	Males	Females	Males	Females	Male
N	5,981	15,990	45,609	3,446	1,697	3,883	14,260	1,119	564
%	0.0842	0.2251	0.6421	0.0485	0.0810	0.1853	0.6804	0.0534	0.090
Average Number of Members	4.1299	4.1308	4.2016	4.1249	3.9503	3.9025	3.8714	3.9042	3.890
Civil Status									
Consensual Union	0.1464	0.0695	0.4931	0.6660	0.1166	0.0644	0.5866	0.7406	0.181
Divorced or Separated	0.2957	0.4113	0.0000	0.0000	0.3502	0.4135	0.0000	0.0000	0.315
Widowed	0.1135	0.2136	0.0000	0.0000	0.0783	0.1806	0.0000	0.0000	0.110
Married	0.1078	0.0478	0.5068	0.3340	0.0958	0.0417	0.4132	0.2594	0.058
Single	0.3366	0.2578	0.0000	0.0000	0.3590	0.2998	0.0000	0.0000	0.335
Education Level									
None	0.0888	0.0714	0.0290	0.0502	0.0589	0.0559	0.0377	0.0363	0.132
Some primary	0.1775	0.1597	0.1525	0.1962	0.1921	0.1717	0.1731	0.2132	0.270
Completed primary	0.2189	0.2080	0.2237	0.2298	0.2084	0.2004	0.2211	0.2277	0.230
Some middle school	0.1709	0.1897	0.1990	0.1851	0.1915	0.2026	0.1826	0.1917	0.168
Completed middle school	0.0624	0.0792	0.0743	0.0708	0.0558	0.0748	0.0717	0.0707	0.027
Some or completed high school or other technical	0.2164	0.2347	0.2598	0.2165	0.2181	0.2371	0.2535	0.2156	0.118
Some or completed professional	0.0651	0.0574	0.0618	0.0514	0.0752	0.0574	0.0603	0.0448	0.052
Labor Force Status									
Employed - active	0.6592	0.5268	0.7629	0.5710	0.6657	0.5247	0.7517	0.5718	0.562
Employed - inactive	0.0432	0.0297	0.0309	0.0310	0.0192	0.0331	0.0299	0.0257	0.046
Unemployed	0.1047	0.0823	0.0918	0.0752	0.1229	0.0891	0.1102	0.0899	0.207
Students	0.0135	0.0104	0.0030	0.0061	0.0077	0.0092	0.0018	0.0044	0.013
Homemakers	0.0479	0.2406	0.0243	0.2450	0.0454	0.2502	0.0293	0.2431	0.054
Retirees	0.0535	0.0488	0.0384	0.0181	0.0439	0.0332	0.0244	0.0116	0.018
Other	0.0780	0.0614	0.0487	0.0536	0.0952	0.0604	0.0528	0.0535	0.097
Occupation Level									
Employee in Private Sector	0.6293	0.6465	0.6570	0.6262	0.6293	0.6861	0.6575	0.6617	0.544
Employee in Public Sector	0.0684	0.0958	0.0724	0.0958	0.0588	0.0669	0.0703	0.0498	0.044
Jornalero o Peón (blue collar)	0.0141	0.0029	0.0105	0.0033	0.0108	0.0041	0.0141	0.0062	0.040
Worker in domestic services	0.0060	0.0419	0.0050	0.0419	0.0039	0.0477	0.0032	0.0363	0.010
Self employed	0.2365	0.1672	0.2045	0.1785	0.2495	0.1550	0.2098	0.1923	0.303
Employer	0.0362	0.0285	0.0419	0.0305	0.0425	0.0257	0.0381	0.0338	0.038
Unpaid family worker	0.0095	0.0173	0.0087	0.0239	0.0052	0.0145	0.0070	0.0198	0.018

a. Non-Migrant population used as standard. Source: Experimental Census of Soacha, Cundinamarca, DANE, own calculations

Table 4. Descriptive Statistics for the Variables included in Binomial and Multinomial Logistic Regression Models

Variable	N	Mean	Standard Deviation
Dependent Variables			
Unemployed	84288	0.282614	0.450273
Employed	84288	0.717386	0.450273
Employed in the Formal Sector	60467	0.791705	0.406093
Employed in the Informal Sector	60467	0.208295	0.406093
Independent Variables			
Personal Characteristics			
Male	84288	0.722535	0.447751
Female	84288	0.277465	0.447751
Age	84288	42.91453	12.67231
Civil Status			
Single	84288	0.09025	0.286541
Separated or Divorced	84288	0.118356	0.323031
Married or in Consensual Union	84288	0.728941	0.444509
Widowed	84288	0.055548	0.229047
Education			
None or less than primary	84288	0.212426	0.409027
Completed primary	84288	0.410367	0.491903
Completed primary or some middle school	84288	0.072003	0.258495
More than completed middle school	84288	0.305061	0.460436
Migration Experience			
Non-Migrant	84288	0.077425	0.267266
Forced Migrant	84288	0.059059	0.235737
Years since arrival to Soacha	4707	7.620353	8.454229
Voluntary Migrant	84288	0.863516	0.343304
Years since arrival to Soacha	66324	10.94703	9.024308
Household Characteristics			
Single Headed Household	84288	0.31899	0.466088
Household with spouse present	84288	0.68101	0.466088
Spouse employed	57401	0.416961	0.493061
Spouse unemployed	57401	0.583039	0.493061
Other household member(s) employed	84288	0.214728	0.410636
Other household member(s) unemployed	84288	0.785272	0.410636
Presence of minors under age 14	84288	0.586857	0.492401
Socioeconomic Index	84288	0.958738	0.361177
Owns a refrigerator	84288	0.658314	0.474278
Owns a washer	84288	0.256952	0.436956
Owns a boiler	84288	0.24777	0.43172
Owns a oven	84288	0.182292	0.386087
Owns a TV	84288	0.824791	0.380148
Has cable TV service	84288	0.297124	0.456994
Has internet service	84288	0.034097	0.18148
Has access to sewage	84288	0.863705	0.343103
Has acces to a gas connection	84288	0.619234	0.485578
Has telephone service	84288	0.771842	0.419648
Received runnign water 7 days a week	84288	0.73167	0.443093
Has garbage collection services	84288	0.985004	0.121538

Owns his/her dwelling	84288	0.622437	0.48478

Table 5. Binary Logistic Regression Estimates of the Probability of Being Employed the Week Before the Census was Collected

Variable	Model I			Model II		
	Estimate		Std. Error	Estimate		Std. Error
N	84,288			77,557		
Intercept	-1.6086	***	0.1019	-1.2737	***	0.1062
Personal Characteristics						
Male	0.9545	***	0.0250	0.9784	***	0.0263
Age	0.0903	***	0.00412	0.0843	***	0.00446
Age Squared	-0.00146	***	0.000044	-0.00141	***	0.000048
Civil Status						
Single, Separated or Divorced (Ref)						
Married or in Consensual Union	-0.3659	***	0.0389	-0.4182	***	0.0415
Widowed	-0.2851	***	0.0384	-0.3225	***	0.0401
Education						
None or less than primary (Ref)						
Completed primary or some middle school	0.1697	***	0.0219	0.1373	***	0.0230
Completed middle school	0.2236	***	0.0370	0.2009	***	0.0387
More than completed middle school	0.4705	***	0.0263	0.4388	***	0.0276
Household Characteristics						
Single Headed Household (Ref)						
Household with spouse present	0.1888	***	0.0399	0.1902	***	0.0425
Spouse employed	0.3683	***	0.0229	0.3778	***	0.0238
Other household member(s) employed	0.1683	***	0.0216	0.1442	***	0.0225
Socioeconomic Index	0.5816	***	0.0247	0.6121	***	0.0258
Presence of minors under age 14	0.1795	***	0.0202	0.1396	***	0.0212
Migration Experience						
Non-Migrant (Ref)						
Forced Migrant	-0.2940	***	0.0440			
Voluntary Migrant	0.1998	***	0.0313			
Duration since arrival to Soacha						
Non-Migrants (Ref)						
Forced Migrants						
Years				-0.0372	***	0.00651
Squared Years				0.000903	***	0.000215
Voluntary Migrants						
Years				0.0117	***	0.00231
Squared Years				-0.00039	***	0.000062
Goodness of fit statistics						
Likelihood Ratio, df	15576.4193, 15			14134.0402, 17		
Percent Concordant	75.6			75.5		

Table 6. Multinomial Logistic Regression Estimates of the Probability of Being Employed in the Formal vs. Informal Sector the Week Before the Census was Collected

Variable	Formal Employment			Informal Employment		
	Estimate		Std. Error	Estimate		Std. Error
N			77,557			
Intercept	-1.3324	***	0.1105	-4.0386	***	0.1551
Personal Characteristics						
Male	0.9464	***	0.0275	1.0799	***	0.0376
Age	0.08	***	0.00472	0.1238	***	0.00653
Age Squared	-0.00143	***	0.000051	-0.00163	***	0.00007
Civil Status						
Single, Separated or Divorced (Ref)						
Married or in Consensual Union	-0.438	***	0.0436	-0.3492	***	0.0615
Widowed	-0.3305	***	0.0433	-0.2969	***	0.0614
Education						
None or less than primary (Ref)						
Completed primary or some middle school	0.1756	***	0.0242	0.0309		0.0316
Completed middle school	0.2495	***	0.0401	0.0551		0.0527
More than completed middle school	0.5121	***	0.0287	0.1843	***	0.0375
Household Characteristics						
Single Headed Household (Ref)						
Household with spouse present	0.2494	***	0.0446	-0.0048		0.0614
Spouse employed	0.3162	***	0.0245	0.5824	***	0.0305
Spouse unemployed	0.0000		0.0000	0.0000		0.0000
Other household member(s) employed	0.1176	***	0.0236	0.2192	***	0.0304
Other household member(s) unemployed	0.0000		0.0000	0.0000		0.0000
Socioeconomic Index	0.6222	***	0.0268	0.5797	***	0.0355
Presence of minors under age 14	0.1239	***	0.022	0.1936	***	0.029
Duration Since Arrival to Soacha						
Non-Migrants (Ref)						
Forced Migrants						
Years	-0.0466	***	0.00693	-0.0111		0.00908
Squared Years	0.00114	***	0.00023	0.000242		0.000316
Voluntary Migrants						
Years	0.0124	***	0.00243	0.0102	**	0.00316
Squared Years	-0.00043	***	0.000067	-0.00031	***	0.000086
Goodness of fit statistics						
Likelihood Ratio			130,596.8			

Table 7. Multinomial Logistic Regression Estimates of the Probability of Being Employed in the Formal or Informal Labor Markets the Week Before the Census was Collected for Male Household Heads

Variable	Formal Employment			Informal Employment		
	Estimate		Std. Error	Estimate		Std. Error
N			56,274			
Intercept	0.1283		0.1380	-2.6898	***	0.1834
Personal Characteristics						
Age	0.0425	***	0.00580	0.1006	***	0.00767
Age Squared	-0.00107	***	0.000062	-0.00141	***	0.000082
Civil Status						
Single, Separated or Divorced (Ref)						
Married or in Consensual Union	0.1602	*	0.0760	-0.0250		0.0966
Widowed	0.0400		0.1033	-0.1770		0.1334
Education						
None or less than primary (Ref)						
Completed primary or some middle school	0.1643	***	0.0300	0.0749	*	0.0380
Completed middle school	0.2571	***	0.0511	0.1070		0.0641
More than completed middle school	0.3926	***	0.0354	0.1627	**	0.0446
Household Characteristics						
Single Headed Household (Ref)						
Household with spouse present	-0.0764		0.0675	-0.2217	**	0.0860
Spouse employed	0.3809	***	0.0265	0.6344	***	0.0324
Other household member(s) employed	0.1747	***	0.0308	0.2591	***	0.0378
Socioeconomic Index	0.7123	***	0.0336	0.7073	***	0.0426
Presence of minors under age 14	0.1809	***	0.0278	0.2262	***	0.0351
Duration Since Arrival						
Non-Migrants (Ref)						
Forced Migrants						
Years	-0.0513	***	0.00825	-0.0134		0.0108
Squared Years	0.00115	***	0.000267	0.000112		0.000386
Voluntary Migrants						
Years	0.0166	**	0.00299	0.0151	***	0.00376
Squared Years	-0.00053	***	0.000081	-0.00043	***	0.000102
Goodness of fit statistics						
Likelihood Ratio			92,819.01			

Table 8. Multinomial Logistic Regression Estimates of the Probability of Being Employed in the Formal or Informal Labor Markets the Week Before the Census was Collected for Female Household Heads

Variable	Formal Employment			Informal Employment		
	Estimate		Std. Error	Estimate		Std. Error
N	21,283					
Intercept	-2.5373	***	0.1960	-4.0872	***	0.3078
Personal Characteristics						
Age	0.1468	***	0.00864	0.1438	***	0.0131
Age Squared	-0.00209	***	0.000097	-0.00181	***	0.000140
Civil Status						
Single, Separated or Divorced (Ref)						
Married or in Consensual Union	-0.6728	***	0.0550	-0.4287	***	0.0823
Widowed	-0.4487	***	0.0487	-0.3506	***	0.0711
Education						
None or less than primary (Ref)						
Completed primary or some middle school	0.2037	***	0.0420	-0.0979		0.0585
Completed middle school	0.2488	***	0.0669	-0.0578		0.0977
More than completed middle school	0.7571	***	0.0495	0.0856		0.0726
Household Characteristics						
Single Headed Household (Ref)						
Household with spouse present	0.3751	***	0.0830	0.2817	*	0.1217
Spouse employed	0.0932		0.0799	0.1938		0.1147
Other household member(s) employed	-0.0144		0.0377	0.1693	**	0.0535
Socioeconomic Index	0.4097	***	0.0455	0.2832	***	0.0670
Presence of minors under age 14	-0.0296		0.0377	0.1734	**	0.0560
Duration Since Arrival						
Non-Migrants (Ref)						
Forced Migrants						
Years	-0.0385	**	0.0127	-0.00900		0.0167
Squared Years	0.00127	**	0.000441	0.000655		0.000551
Voluntary Migrants						
Years	0.00362		0.00422	-0.00049		0.00601
Squared Years	-0.00017		0.000121	-0.00002		0.000166
Goodness of fit statistics						
Likelihood Ratio	37,304.05					