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Marrying after migration: assortative mating among Moroccans in Spain

1. INTRODUCTION

Research related to the transition to marriage among international migrants in destination countries is scarce. The majority of scientific studies concerning marriage strategies among immigrants are focused on societies with a long-standing history of immigration. In such societies, immigrants are usually part of a larger group that includes second and subsequent generations of migrants. These groups are often identified by their ethnic-racial ascription rather than by their country of birth. In countries with a short history of immigration, a large portion of minority ethnic groups is composed of first-generation migrants. Because the highest rates of migration occur among youth and young adults, the decision to migrate often coincides with other decisions or life events, such as forming a union or having children. Some migrants may not be in a union at the time of migration, while others may be in a union but may not necessarily migrate with their spouses or partners. When examining marriage patterns among international migrants, union status at the time of arrival is a critical distinction; however, this information is not always available (Pagnini and Morgan, 1990; Landale, 1994; Kalmijn, 1998; Rosenfeld, 2002; Qian and Lichter, 2007).

In this paper, we use Spain's 2007 National Immigrant Survey to investigate the patterns of post migration marriage in the destination country. Recent research on Spain shows that union status at the time of arrival varies by country of origin and by gender (Sánchez-Domínguez *et al.*, 2011; Esteve and Cortina, 2011). Slightly more than half of immigrants (55%) were not in a union at their time of arrival. This percentage ranged from 44.4% among Ecuadorian men to 65.4% among Moroccan men and from 43.9% among Romanian women to 56.4% among Moroccan women (Esteve and Cortina, 2011). Most of these immigrants marry after migration. Whether these migrants will marry a person from their own country of birth (endogamous marriage) or a native of Spain (exogamous marriage) and the factors that influence their transition to marriage are the subjects of this paper.

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In particular, we examine the transitions to marriage among Moroccans who were single (i.e. not in a relationship) when they migrated to Spain and the individual, social and structural factors that influence decisions about whether and whom to marry. Spain is a new destination country for immigrants. During the first decade of the twenty-first century, it had one of the highest immigration rates worldwide (OECD, 2008). Spain's foreign-born population increased from 1,259,054 to 6,466,278 individuals between 1999 and 2009. According to Spain's Population Register, the percentage of immigrants among the country's total population rose from 3.1% to 13.8%. Within the same period, the Moroccan population increased from 196,595 to 737,818 individuals.

The substantial Moroccan population in Spain provides access to large study samples and allows us to compare our results with studies from other countries that also have a history of Moroccan immigration. Moroccans are among the largest immigrant groups in France, the Netherlands, Italy and Belgium (IOM, 2003). Even second-generation Moroccan immigrants predominantly marry other Moroccans, and this endogamous tendency is often fuelled by strong transnational networks (Lievens, 1999; Schoenmaeckers *et al.*, 1999; Heering *et al.*, 2004;). This paper uses recent data on migration to Spain to contribute to the existing European literature on Moroccan marriage patterns and builds on previous studies of the marriage strategies of international migrants in Spain (Sánchez-Domínguez *et al.*, 2011) by more closely examining the Moroccan community. We use data from the 2007 National Immigrant Survey (Reher and Requena, 2009).

2. BACKGROUND AND HYPOTHESES

2.1 *Factors that influence union formation among international immigrants*

According to Kalmijn (1998), the forces that influence the selection of a partner can be divided into three groups: individual preferences, structural opportunities, and third-party influences. The last group corresponds to factors related to the influence of third parties (e.g., family, church, state) on assortative mating (Kalmijn, 1998). In this paper, we combine explanatory variables at all levels but do not represent all dimensions. Cultural preferences and religion are difficult to capture with the current data, though these variables may not be more important to the marriage strategies of Moroccan immigrants than they are to other immigrant groups (Sánchez-Domínguez *et al.*, 2011; Schoenmaeckers *et al.*, 1999).

"Individual factors" refers to all of the individual characteristics that may influence the choice of a spouse. Assimilation (Gordon, 1964; Alba and Nee, 1997) and social exchange theories (Merton, 1941; Rosenfeld, 2005) assert that an entire set of individual variables influences the propensity of a minori-

ty group member to marry outside of his or her group. The strength of an individual's integration is directly correlated with his or her degree of contact with the destination society and hence with the likelihood of forming an exogamous union with a member of a native or majority group. Years of residence, education level, command of the native language, and socioeconomic status are used to assess an individual's level of integration (Alba, 1976; Portes and Borocz, 1989; Coleman, 1993). The varying influence of these variables across groups inspired the theory of segmented assimilation (Portes and Zhou, 1993).

"Structural factors" refers to group characteristics that may influence assortative mating among group members (Lievens, 1998, 1999). To a large extent, the structural characteristics of the population mediate the opportunities accessible to the members of that population (Blau, 1977). Focusing on mixed marriages, Blau stated that the ethnic heterogeneity of a society favours this type of marriage (Blau, 1994) and that as the size of an immigrant group increases, the incidence of intermarriage decreases. Other factors to consider are residential segregation, years since the migratory flows began, and the sex ratio. The population's sex ratio is particularly relevant for immigrant groups because it fluctuates more widely within the immigrant population than within the general population. Evidence from European countries, including Belgium, the Netherlands and Germany (Lievens, 1999; Kalmijn and Van Tubergen, 2006; González Ferrer, 2006), shows that as immigrant groups expanded in size and importance, the number of mixed unions decreased.

In addition to the factors mentioned above, the role of transnational networks should also be considered when studying marriage patterns among immigrants. Revolutions in the fields of information technology, media and transportation have altered the concept of distance and allowed networks and transnational families to consolidate to a degree that was unknown in the past (Castles and Miller, 2003). The existence of these networks seems to condition various aspects of an immigrant's life (i.e., participation in the job market and family strategies; Boyle *et al.*, 2009). Therefore, the geographical limits of marriage markets and the influence of social networks on immigrants in the destination country must be rethought. The 'imported wives' phenomenon illustrates the idea of a cross-national marriage market. The term 'imported wives' can be applied to exogamous marriages (men seeking international spouses) and to endogamous marriages (international migrants seeking women in their home country). The latter has been observed in Belgium and Germany among Turkish and Moroccan immigrants, for whom the 'imported wives' phenomenon is associated with a desire among immigrants with a low socioeconomic and integration level to maintain traditional values by selecting a spouse from their own country of birth who has had no contact with the destination country (González-Ferrer, 2006). Furthermore, the phenomenon may offset sex ratio imbalances in immigrant groups (Lievens, 1998), even among second-generation immigrants (Lesthaege and Surkyn, 1994; Huschek *et al.*, 2010). Male migration to urban areas or other countries creates a deficit

of men in the country of birth, resulting in a greater number of single young women (Ramírez, 2004). In this way, immigrants' selection of partners from their country of birth may redress the sex ratio imbalance not only in the country of birth but also in the destination country (Lievens, 1999). However, this phenomenon could be explained by cultural preferences as well.

2.2 *Moroccans in Spain and empirical evidence*

Moroccans outnumbered other immigrants in Spain until 2008, when Rumanians became the most populous immigrant group. According to the January 1, 2009 Population Register, 737,818 people born in Morocco resided in Spain; that is 11.4% of Spain's total population born abroad. Although Moroccans are considered the foreign group with the longest tradition of immigration their migration flows did not intensify until the end of the 1990s. In the mid-twentieth century, most Moroccan immigration occurred to meet the demand for laborers in northern Europe (Berriane, 2004; López-García and Berriane, 2004). In the 1990s, Spain's economic growth began to attract and intensify international immigration flows spurred by the search for jobs. Moroccan inflows to Spain rose from 10,534 migrants in 1998 to 71,397 in 2007, according to Spain's national statistics on migration flows. This period is also referred to as the "Moroccan diaspora" and is characterised by intense migratory circulation and the on-going growth of transnational networks between Spain and Morocco (Berriane, 2004; Aparicio *et al.*, 2005). The short distance between the two countries (14.4 km) helps to strengthen and consolidate these networks.

Males predominate among Moroccan immigrants in Spain (174 men for every 100 women in 2007) due to Morocco's migratory model. Because the number of males exceeds the number of females, the marriage market is seriously imbalanced. The spatial distribution of men and women is also uneven. Most males tend to settle in large capital cities or in provinces with a rich agriculture sector, thereby further unbalancing the sex ratio in these areas. For instance, according to Spain's 2007 Population Register, the number of Moroccan men in Teruel, Cuenca and Almería was approximately three times higher than the number of Moroccan women. The number of Moroccan women was only higher than the number of men in the autonomous cities of Ceuta and Melilla (for every 100 women, there were 88 and 85 men, respectively).

Regarding education, Moroccan immigrants have one of the highest illiteracy rates among all immigrant groups in Spain (Mijares and López, 2004; Aparicio *et al.*, 2005). According to the 2007 National Immigrant Survey, 21.2% of Moroccans were illiterate compared with Latin American migrants (Ecuador, 0.4%; other Andean countries, 0.9%) and Asian migrants (2,1%, excluding Japanese and South Korean migrants; Cebolla and Requena, 2009).

In terms of marriage, ample evidence suggests that Moroccans represent a tightly endogamic group (Lievens, 1998, 1999; Schoenmaeckers *et al.*,

1999; Kalmijn and Van Tubergen, 2006). This endogamy has been observed among Moroccans in Belgium, the Netherlands, Germany (Lievens, 1999; Kalmijn and Van Tubergen, 2006; González-Ferrer, 2006) and recently, Spain (Cortina *et al.*, 2008; Vono and Del Rey, 2009; Esteve and Bueno, 2010; Sánchez-Domínguez *et al.*, 2011). The influence of religion has often been cited to explain Moroccans' endogamic tendencies, as Islam strongly encourages marriages within the same faith, especially for women. Endogamy rates have also risen in response to the large, well-connected transnational networks between Moroccan communities in destination countries and in Morocco.

The first attempts to examine endogamy rates among international migrants in Spain were based on Spain's 2001 census data (Cortina *et al.*, 2008), but these data did not indicate whether migrants married before or after migration (Esteve and Jiménez, 2010). Recent research that includes this critical distinction shows that Moroccans have the highest endogamy rates among immigrants in Spain (Sánchez-Domínguez *et al.* 2011). The low rate of intermarriage between Moroccans and Spaniards is explained by the sharp social contrasts between the two groups, mainly with respect to education, wages and employment, but also in terms of religion and culture in many cases (Cebolla and Requena, 2009).

2.3 *Objectives and hypotheses*

The main aim of this work is to determine which factors are related to the transition to marriage, whether endogamous or exogamous, among Moroccan immigrants who were single when they migrated to Spain. The examination of the transition to marriage, rather than the distribution of existing unions, represents an important original contribution to this field of research. In this regard, this paper builds on the works by Sánchez-Domínguez *et al.* (2011), Esteve and Cortina (2011), and Cortina and Esteve (2011), which used the same dataset to examine marriage strategies among immigrants in Spain. This paper extends current research by further exploring the Moroccan community and provides insights into Moroccans' marriage strategies. Our model includes individual factors related to the human and social capital of immigrants, and examined family members' influences on migration as indicators of the transnational network. It also considers structural factors, such as group size and the sex ratio.

From an individual's point of view, the number of years of residence in the destination country may increase the likelihood of forming either an endogamous or exogamous union; however, an endogamous union may require a longer stay to improve economic, occupational, and personal stability and the ability to interact with the native population. This hypothesis assumes, however, that the reason for migration is unrelated to the intention to marry. A tendency towards endogamous marriages among single women during their first year of residence may result from marriage migration, as has

been observed in other countries (Lievens, 1999; Lesthaege and Surkyn, 1994). The inability to ascertain whether a marriage commitment existed before migration imposes constraints on interpreting the effect of residence time among women. Transitions to exogamous marriages, though, may require a longer stay for men and for women, and we expect that the effect will be similar for both genders.

A higher level of human capital is directly correlated with a higher incidence of exogamy. If we use education as a reference variable, the differences between the Moroccan and the Spanish populations are far from significant. Considering the important role of education in assortative mating (Heering *et al.*, 2004) and in overcoming social barriers, differences between the two populations will create major obstacles to forming mixed unions. In this way, a Moroccan migrant's opportunity to form a union with a Spanish citizen will increase with his or her education level. Likewise, completing one's schooling in Spain will increase the likelihood of forming an exogamous union.

Social capital and the maintenance of social networks with the country of birth enable and favour the transition to an endogamous marriage rather than an exogamous one. Data on these networks are scant. However, there is information on whether the decision to migrate was influenced by a relative or an acquaintance who had previously migrated to Spain. When the decision to migrate was influenced by a person belonging to the same group, the propensity toward endogamy was greater. Stronger social networks will exert greater pressure to marry within one's group, so the context in which the new immigrant is socialised may be more prone to foster endogamous unions.

The structural point of view offers two hypotheses. First, the tendency to form endogamous unions will increase when the concentration of individuals from the same group is high because the greater density of social networks favours the maintenance of one's own culture and habits. In this way, endogamy is expected to predominate in provinces with a larger Moroccan community, and exogamy is expected to predominate in provinces with a smaller Moroccan community.

The second structural hypothesis concerns the male ratio at the provincial level. Previous studies that used data from Spain's 2001 census had to reject the hypothesis that a deficit of Moroccan women in some provinces would lead to higher rates of male exogamy. In fact, Esteve and Jiménez (2010) found that the incidence of exogamy among men was lower in provinces with more men than women. Their findings, though based on census data, considered all married individuals without distinguishing whether the individuals married before or after migration. In this paper, we re-examine the same hypothesis, but consider only immigrants who married after migration. We expect that men will intermarry more often in provinces with higher proportions of men than in provinces with more balanced sex ratios. Conversely, we predict that women will intermarry less often in provinces with a surplus of men.

3. DATA, VARIABLES AND METHODS

3.1 *The National Immigrant Survey (NIS)*

We use data from the 2007 National Immigrant Survey (NIS), which collected information from 15,465 people who were born abroad, were at least 16 year old at the time of the survey and who had resided in Spain for at least one year or planned to reside in Spain for at least one year. The NIS provides information concerning migrant socio-demographic characteristics, including household structure, migratory experience, relationship with the country of birth, social participation and legal situation at the time of the survey. It also contains retrospective information about living conditions in the country of birth prior to migration and about labour and residential mobility in Spain (Reher and Requena, 2009).

Compared to other statistical sources (census information, vital statistics, the Labour Force Survey), the NIS provides more recent and relevant information for analysing union formation among immigrants, including the year of marriage for all married people, the year in which nationality was acquired for both members of the couple and the ability to reconstruct partnership status at the time of arrival. Additionally, the NIS provides access to information about those with whom the interviewee was living and relatives outside of the household (i.e., partner and children). The information available for non-respondents is limited to the country of birth, date of birth, sex, year of arrival in Spain, country of citizenship and, if applicable, the year in which Spanish citizenship was acquired.

The NIS has limitations with respect to the study of unions. First, it contains no information on the socioeconomic characteristics of the spouses, such as their level of education or their occupation. Second, the year of marriage refers to the most recent marriage, so data on partnership history are absent. Third, data on absent spouses apply only to married interviewees, not to cohabiting interviewees. Nonetheless, non-marital cohabitation among Moroccans is relatively rare (4.7% of total unions), as are divorce and separation (5.4% of the sample of Moroccans).

To determine the structural variables, group size and sex ratio, at the provincial level, we use 2007 data from the Spanish Population Register.

3.2 *Selection of the Moroccan sample from the NIS*

Of the 15,465 people surveyed by the NIS, 1,850 (976 men and 874 women) were born in Morocco. Among them, the analysis was restricted to men and women who i) had migrated while single (i.e., not in a union), ii) were 16 year old or older at the time of migration, iii) arrived in or after 1980, and iv) were not Spanish citizens by birth.

Only immigrants who had declared themselves single at the time of arrival were considered (left censoring). Immigrants who had declared themselves separated, divorced or widowed were excluded because it was impossible to determine when and where these unions were formed and later dissolved. We also excluded cohabitants. However, we included married individuals whose spouses were not living in the same household. Approximately 60% of Moroccan men and 45% of Moroccan women who had migrated since 1980 and were 16 year old or older had no spouse or partner at the time of arrival.

Individuals younger than 16 years at the time of arrival (i.e., the 1.5 generation) were excluded because they represented a small number of cases and because the marriage behaviours of immigrants who completed their socialisation process in Spain cannot be compared with the behaviours of immigrants who arrived at an older age.

In addition, the analysis focuses on recent migration, which accounts for 82.8% of the Moroccan population living in Spain in 2007. The immigration flows from Morocco to Spain prior to the 1980's were motivated by circumstances that were different from those that motivate current immigration flows[1].

The final sample includes 504 people: 373 men and 131 women. The database was converted into a person-year file. For each individual, the number of observations equalled the number of years that had elapsed between arrival and marriage or, if the individual was unmarried, the year of the survey (right censoring). The final database contains 2,388 person-years for men and 702 person-years for women. The lower number of women was due to the lower number of female migrants and the lower number of women who were in a union at the time of arrival (see Section 4.1).

3.3 *Variables and method*

We used standard discrete-time multilevel logistic regression models (Yamaguchi, 1991). Multilevel models have been estimated using MlWIN software[2] (Goldstein *et al.* 1998). Because we are interested in comparing marriage strategies among Moroccans and not between Moroccans and other groups, individual microdata is preferred over aggregated data. The micro

[1] A portion of the migration flows to Spain from Morocco prior to 1980 may be related to historical ties between the two countries. The existence of a Spanish Protectorate in Morocco until 1956 may indicate that some Moroccan-born people registered as having Spanish nationality at birth may be descendants of civil servants, diplomats or exiles who settled in Morocco in the first half of the 20th century.

[2] Model assumptions are that the distribution of the response variable y_{ij} is binary, with probability of success π_{ij} and variance $\pi_{ij}(1-\pi_{ij})$, and that the distribution of u_{0j} is normal with mean 0 and variance $\sigma^2 u_0$. If the independent variable is continuous (e.g. sex ratio, group size), it is assumed to have a linear relationship with the log-odds.

approach allows us to disentangle the effect of time-varying and individual variables on the transition to marriage and the multilevel approach allows us to examine data nested within different levels. The data are divided into three levels: person-year, person and province. Separate models were designed for men and women. The events of interest were the likelihood that a person would marry another person from the same country of birth or a person from a different country of birth (90% of the partners with a different country of birth were Spanish). The designations of endogamy and exogamy were based on the partner's country of birth. Separate models for endogamy and exogamy were implemented. For simplicity, multinomial models were disregarded. Fitting and interpreting results from multinomial models follows the same basic paradigm as for binary models (Hosmer and Lemeshow, 2000, p. 287). Two binary logistic regression models were developed, with two different dependent variables: 1) marrying a spouse from the same country of birth versus remaining single and 2) marrying a spouse from a different country origin versus remaining single .

Out of the 504 individuals included in the analysis, 49% were single at the time of the survey. Among the individuals who married after migration (the remaining 51% of the sample), three out of four married a Moroccan spouse, and one out of four individuals entered into an exogamous union (with a Spanish individual in 90% of the cases).

The model relates the probability of a transition to marriage (endogamous or exogamous) using a set of predictor variables. Age and Spanish nationality prior to marriage were control variables. Spanish citizens by birth who were born in Morocco were excluded from the analysis. Age was specified as a continuous variable with its square and cubic versions to account for non-linear effects in the transition to marriage. The variable "years of residence" measures the number of years that elapsed between migration and marriage or, if the individual was single, the year of the survey (2007), and it was grouped into 6 categories: 0-1, 2-3, 4-5, 6-7, and 8 or more.

Level of education refers to the level of studies achieved at the time of the survey. Because this variable changes over time, it would have been ideal to know each participant's education level at the time of arrival. However, we assumed that by excluding those migrants that arrived to Spain younger than 16 years (the so-called 1.5 generation), the level of education reported at the time of the survey would refer to the level of schooling attained in Morocco.

The variable "studies completed in Spain" defines opportunities to meet a Spaniard as a potential partner. Immigrants who attended school in Spain were more exposed to Spanish nationals and thus had a higher probability of marrying a Spanish person. Hence, this variable was treated as a dichotomous variable, with 'yes' and 'no' as possible responses.

The final individual variable considered is the influence that a relative or acquaintance from Morocco who had migrated previously to Spain exerted on

the participant's decision to migrate. This variable describes the migrant's situation at the time of migration and considers the existence of social networks in the destination country. It is also a dichotomous variable extracted from the NIS.

Two variables were created at the provincial level: group size and sex ratio (see appendix 1). Group size was calculated as the log transformation of the percentage of Moroccans (men and women) in each province divided by the total number of Moroccans in Spain. The sex ratio is the ratio of Moroccan males to Moroccan females in each province. Data for both variables were extracted from the Spanish Population Register on January 1, 2007. Both dimensions were introduced into the models as continuous variables.

Table 1 – *Sample characteristics and variables included in the analysis*

	Men			Women		
	Single	Endogamous marriage	Exogamous marriage	Single	Endogamous marriage	Exogamous marriage
Structural Variables						
Group Size	9.79	9.90	9.57	9.75	10.05	9.81
Sex Ratio	0.69	0.64	0.30	0.53	0.54	0.33
Individual Variables						
Age	33.33	30.18	29.64	29.11	25.21	29.05
Years since migration						
0 to 1 year	8.3%	14.4%	23.2%	14.8%	35.0%	37.5%
2 to 3 years	25.0%	23.2%	19.6%	37.0%	30.0%	31.3%
4 to 5 years	21.4%	24.0%	17.9%	20.4%	8.3%	6.3%
6 to 7 years	27.6%	14.4%	10.7%	5.6%	16.7%	0.0%
More than 8 years	17.7%	24.0%	28.6%	22.2%	10.0%	25.0%
Education						
Less than primary	28.1%	23.2%	30.4%	14.8%	46.8%	13.3%
Primary	35.4%	36.8%	19.6%	51.9%	30.6%	33.3%
Secondary	29.7%	30.4%	23.2%	29.6%	21.0%	26.7%
Tertiary	6.8%	9.6%	26.8%	3.7%	1.6%	26.7%
Completed studies in Spain						
No	94.3%	95.2%	89.3%	96.3%	95.1%	87.5%
Yes	5.7%	4.8%	10.7%	3.7%	4.9%	12.5%
Spanish nationality before marriage						
No	96.9%	98.4%	98.2%	98.1%	98.4%	100.0%
Yes	3.1%	1.6%	1.8%	1.9%	1.6%	0.0%
Influence on migration decission						
No	42.2%	35.2%	69.6%	37.0%	39.3%	68.8%
Yes	57.8%	64.8%	30.4%	63.0%	60.7%	31.3%
N	192	125	56	54	61	16
N (person/year)	2,207	125	56	625	61	16

Source: National Immigrant Survey, 2007

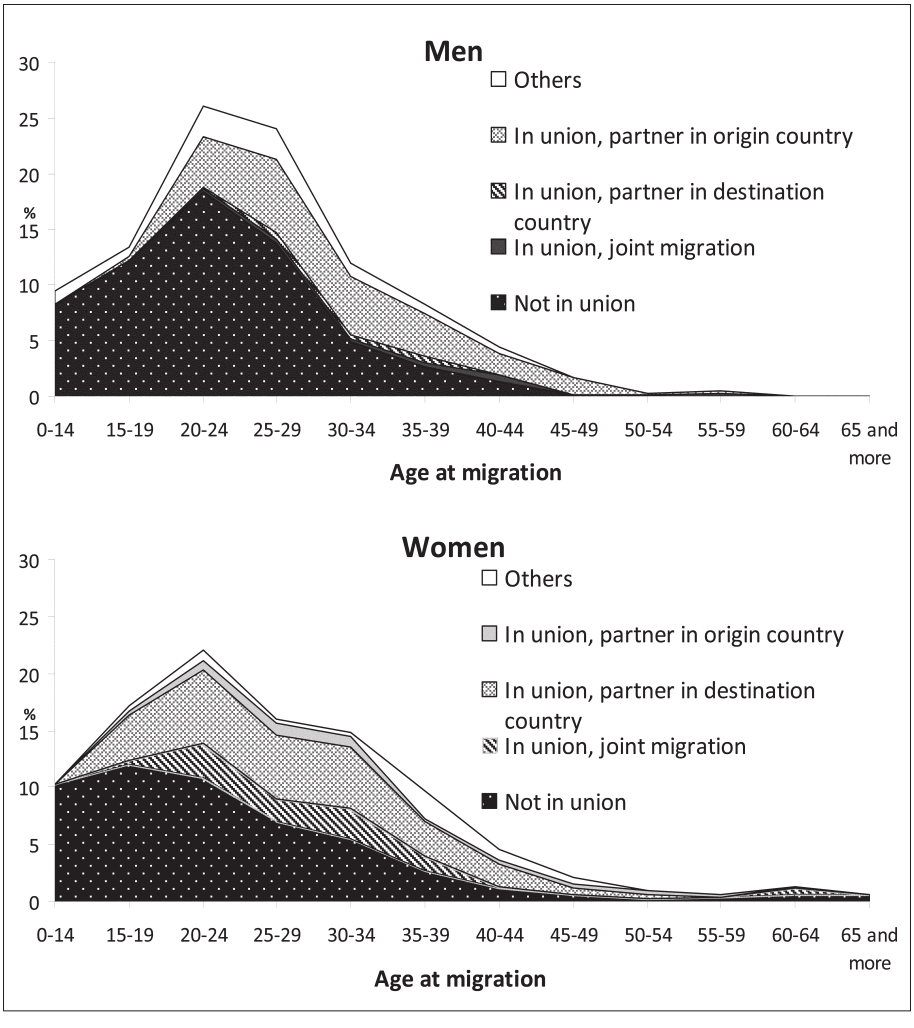
Table 1 provides information about the sample, specifically the classification of individuals according to marital status (single, type of union (endogamous or exogamous).

4. RESULTS

4.1 *Marriage strategies*

Figure 1 shows the distribution of male and female Moroccan migrants according to their union status at the time of arrival and ordered by age at arrival. Only Moroccans who migrated after 1980 and who were not Spanish

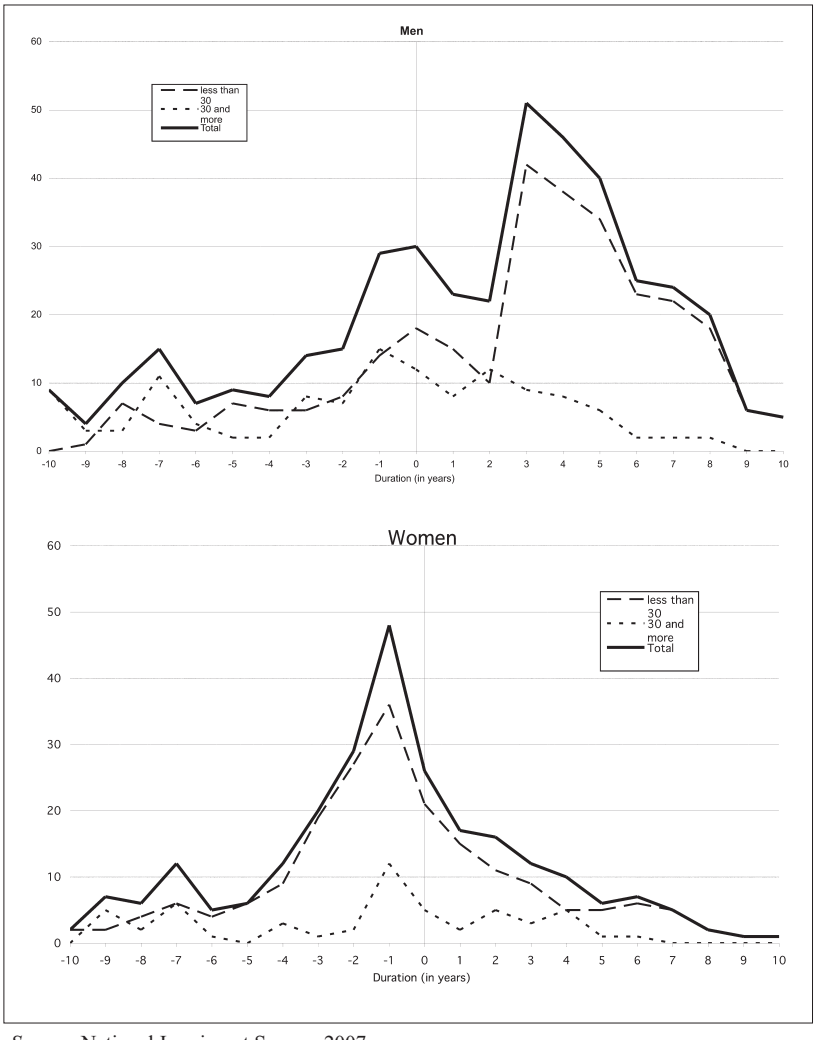
Figure 1 – *Distribution of Moroccan men and women according to union status upon arrival in Spain*



Source: National Immigrant Survey, 2007

citizens by birth are represented. To facilitate comparisons between men and women we represent the relative distribution along a percentage scale. We distinguish between migrants who had a partner and those who had no partner at the time of arrival (i.e., those in a union versus those not in a union). Among the migrants who had a partner, we further distinguish between those who migrated with their partner (joint migration) and those who migrated alone.

Figure 2 – *Distribution of married Moroccans according to their time to marriage in relation to their time of migration to Spain. Information is provided for the group as a whole and for select age groups.*



Source: National Immigrant Survey, 2007

Finally, for migrants who had a partner but migrated alone, we distinguish between individuals who migrated first, leaving their partners in Morocco, and individuals whose partners were in Spain at the time of arrival.

Figure 1 also displays the migrants' age profile. Most Moroccan men migrated to Spain between the ages of 16 and 39 years (812 migrants, or 83.8% of all male migrants). Of all male migrants, 61.8% (502) did not have a partner at the time of arrival. In relative terms, the proportion of migrants who had a partner at the time of arrival increases with age at migration. Few migrants who had a partner (38.5%) migrated with their partner (5.6%). Older migrants were more likely to migrate with their partners. Most individuals who had a partner at the time of migration left their partner in Morocco (63.5%), and few individuals migrated to reunite with a spouse who was already in Spain (4.3%). The situation for women is significantly different. Irrespective of their age at the time of arrival, the proportion of women without a partner at the time of arrival is consistently lower than the proportion of men without a partner at the time of arrival. At the time of arrival, 48.3% of women had a partner. Of these women, 57.1% migrated alone to reunite with their husbands in Spain, 20.9% migrated with their husbands, and a small fraction (9.4%) migrated before their partner did.

Figure 2 shows the distribution of married Moroccans according to the duration in years between the year of marriage and the year of migration. Duration 0 indicates that the migrant married during the year in which he or she arrived in Spain. Negative numbers indicate that the migrant married before migration, and positive numbers indicate that the migrant married after migration. Consistent with previous findings (Sánchez-Domínguez *et al.*, 2011), 29.1% of men and 58.8% of women married before migration. Most men married after migration, typically after three years of residence in the destination country (40.3%), and some of them married around the time of migration (19.9% of total marriages during the period +/-1 year). Men who migrated at age 30 or younger were more likely than older migrants (over 30 years of age) to marry after migration. Twenty per cent of women married the year prior to migration, and approximately 36.4% of them married within one year before/after migration. Approximately 13% of women married after three years in the destination country.

4.2 *Transitions to marriage after migration*

Table 2 shows the average age at marriage of Moroccan men and women who married in Spain, according to the spouse's country of birth. For men, the average age at marriage is 31.2 years when a union forms with a Moroccan woman and 32.3 years when the spouse originates from a different country. For women, the average age at marriage is 26.7 years when a union forms with a

Moroccan man and 30.9 years when the spouse originates from a different country. Table 2 also indicates the elapsed time between migration to Spain and marriage. For men, 5.7 years elapse on average before marrying a Moroccan woman and 7.4 a woman who originates from a country different from Morocco. For women, the elapsed time is shorter: 3.5 years when the husband is a Moroccan and 6.1 years when he is not.

Table 2 – *Marriage indicators of Moroccans who married after migration according to sex and type of union (endogamous or exogamous)*

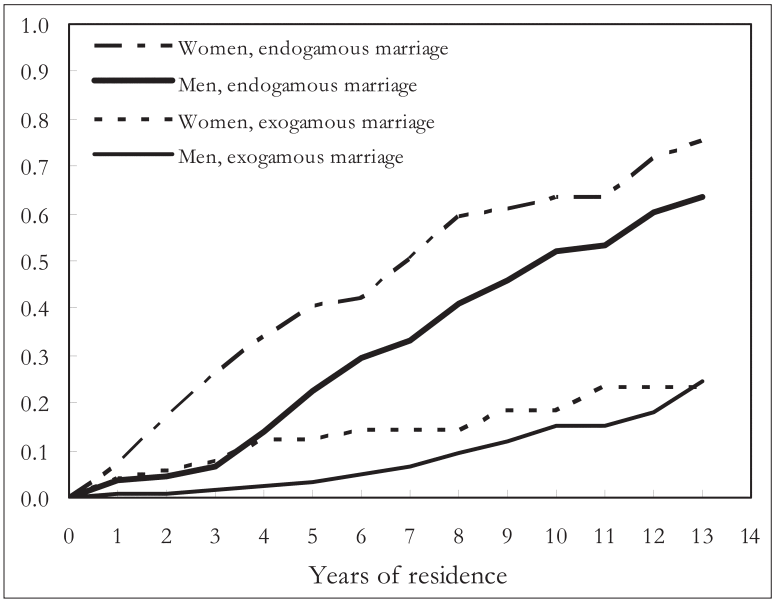
	Men		Women	
	Endogamous marriage	Exogamous marriage	Endogamous marriage	Exogamous marriage
Age at marriage (in years)	31.2	32.3	26.7	30.9
Time between migration and marriage (in years)	5.69	7.41	3.47	6.10

Source: National Immigrant Survey, 2007

Figure 3 shows the cumulative incidence of endogamous or exogamous marriages for Moroccan men and women who were not in a union at the time of their arrival[3]. The graphic representation of these probabilities shows that the transition to an endogamous marriage is more likely and occurs sooner among women than among men. The likelihood of a Moroccan man marrying a Moroccan woman increases after three years of residence; at that point, its rate of increase parallels the likelihood of a Moroccan woman marrying a Moroccan man. Exogamous marriages are markedly less frequent than endogamous marriages, and the differences in these rates are consistent between men and women. Irrespective of the years of residence, a Moroccan woman is more likely than a Moroccan man is to marry a partner born outside of Morocco. This probability increases with increasing years of residence. For men, however, this probability remains approximately zero until five years of residence, at which point it grows constantly at a rate similar to the rate at which female migrants marry a non-Moroccan spouse.

[3] The cumulative incidence is a measure of frequency during a period of time. We calculate the cumulative incidence of marriage in the presence of competing risks because Moroccans can marry within or outside the groups (endogamous versus exogamous marriage). Hence, these phenomena were treated as complementary rather than independent outcomes. We have used standard life-table analysis to calculate the cumulative incidence of endogamous and exogamous marriages. The population at risk was comprised of all individuals who were single at the beginning of the observation period minus half of the individuals who formed an exogamous marriage during the same period. In this way, the migrants who formed an exogamous marriage were assumed to have been at risk for half of the period.

Figure 3 – *Cumulative incidence of endogamous and exogamous marriages for Moroccan men and women who were not in a union upon arrival in Spain*



Source: National Immigrant Survey, 2007

4.3 *Multivariate analysis*

Table 3 shows the results of the multivariate analysis. The first model measures the relative probability that a Moroccan immigrant will marry another Moroccan (endogamous union), and the second model measures the probability that a Moroccan immigrant will marry someone outside his or her group (exogamous union). Age and years of residence vary for each individual. The remaining individual variables remain constant throughout the observation period. The structural variables are shared by all individuals within the same province. We completed a random-intercept model that allowed the intercept to vary randomly across provinces. The estimated parameters are expressed as a log odds ratio (β). Zero indicates no relationship between the independent variable and the probability of getting married. A positive value indicates a positive correlation, and a negative value indicates a negative correlation. Age is a control variable.

The results for men suggest that Moroccans who have lived in the destination country for at least 4 years are more likely to marry Moroccan women than men who just arrived. Men who were Spanish citizens before marriage are less likely to marry a Moroccan woman ($\beta = -1.79$). Migrants who were influenced by a relative or an acquaintance from their country of birth who

Table 3 – *Multilevel logistic hazard regression for the transition to endogamous or exogamous marriages among Moroccan men and women*

	Men		Women	
	Endogamy	Exogamy	Endogamy	Exogamy
	–	–	–	–
Structural Variables				
Group Size	-0.01	-0.18 †	0.15	-0.10
SexRatio	-0.10	-3.55 **	0.66	-2.60 **
Individual Variables				
Age	0.44 **	0.83 **	0.24	0.25 *
Age^2	-0.01 *	-0.01 **	-0.01 †	0.00 †
Age^3	0.00 *	0.00 **	0.00 †	0.00 †
Years since migration				
0 to 1 year	ref.	ref.	ref.	ref.
2 to 3 years	0.50	0.17	-0.37	-0.45
4 to 5 years	0.78 *	0.43	-0.61	-1.31 **
6 to 7 years	0.66 *	0.26	-0.03	-1.53 **
More than 8 years	0.78 *	0.91 *	-0.27	-1.33 **
Education				
Less than primary	ref.	ref.	ref.	ref.
Primary	0.29	0.06	-0.28	1.45 **
Secondary	0.00	-0.84	-0.37	1.56 **
Tertiary	-0.16	0.94 **	-1.33 †	2.28 **
Completed studies in Spain				
No	ref.	ref.	ref.	ref.
Yes	0.12	-0.08	-0.28	0.48
Spanish nationality before marriage				
No	ref.	ref.	ref.	ref.
Yes	-1.79 *	-1.36	-1.07	-0.85
Influence on migration decission				
No	ref.	ref.	ref.	ref.
Yes	0.68 **	-0.33	0.54 †	-1.00 **
Constant	-11.427 **	-13.68 **	-6.75 *	-5.86 *
Provincial Variance	0.00	0.00	0.00	0.04
Individual Variance	0.07	0.15	0.00	0.25

** p <.01, * p<.05, † p<.1
Source: National Immigrant Survey, 2007

had previously migrated to Spain are more likely to marry a Moroccan spouse (β = 0.68) than are migrants who were uninfluenced. Neither the structural variables nor the educational variables have a statistically significant effect on marrying a Moroccan woman.

The likelihood of a transition to an exogamous marriage is statistically significant only for migrants who have resided for 8 years or more in the destination country or achieved a tertiary level of education. Contrary to our expectations, but consistent with previous findings (Esteve and Jiménez, 2009), exogamous marriages are less frequent in provinces where Moroccan

men outnumber women by a larger proportion, as indicated by the negative, statistically significant effect of the sex ratio on the likelihood of entering into an exogamous marriage ($\beta = -3.55$).

The results suggest that the transition to endogamous marriages among women who were single when they migrated to Spain is poorly explained by the variables introduced in the model. Only women with a tertiary level of education or whose migration decisions were uninfluenced by a relative are less likely to marry a Moroccan man ($\beta = -1.33$ for women with tertiary studies and $\beta = 0.54$ for women who were influenced by a relative). In the transition to exogamous marriages, several more variables become statistically significant. The years of residence negatively influence the likelihood of getting married. Women with at least a primary level of education are more likely than women with less than a primary level of education to marry outside of their group. The influence of a relative on the migration decision reduces the likelihood of an exogamous marriage ($\beta = -1.00$). Finally, at the provincial level, Moroccan women residing in provinces with a higher male-to-female ratio are less likely to marry a non-Moroccan man ($\beta = -2.60$).

5. CONCLUSION

Using the 2007 National Immigrant Survey, this work examined marriage transitions among Moroccan migrants to Spain who were single at the time of arrival and distinguished between endogamous and exogamous marriages. We focused on recent migrants (after 1980) who were at least 16 year old at the time of arrival. The multivariate analysis was preceded by a set of descriptive figures to contextualise our analysis. The descriptive results revealed differences between men and women that are consistent with previous findings (Sánchez-Domíguez *et al.*, 2011). The male participants typically migrated without a partner (58.7%), and men who married after migration predominantly selected Moroccan spouses (70%) after some years in the country. In contrast, female migrants typically had an existing partner in Spain or entered into a marriage immediately after arrival. Fifty-four per cent of women were married before arrival, and 42% of the women who married after migration did so within a year after arrival.

The results of the multivariate analysis showed that the years of residence positively influenced the transition to marriage among Moroccans. The male immigrants in our study who entered endogamous marriages typically did so after 3 years in Spain, while those who entered exogamous marriages typically did so after 8 years of residence in Spain. Conversely, among women, no association was found between years of residence and endogamous marriage, and a negative association was found between years of residence and exogamous marriages. In endogamous marriages, we predicted a

negative relationship between the years of residence and marriage due to the role of marriage migration among women.

Nevertheless, we did not expect to find such a large negative relationship between length of residency and exogamy among women. Why are Moroccan women more likely to marry non-Moroccan men after arrival than some years later? Are these women marrying Spanish citizens who were born in Spain to Moroccan parents? This explanation seems plausible. Although it cannot be proved directly by using the NIS data, it is consistent with data from Spanish marriage records that indicate that an increasing number of Spanish men are marrying Moroccan women at young ages (Esteve and Serret, 2010).

The tendency of women to marry as soon as they arrive in Spain can be linked directly to the existence of a consolidated transnational marriage market, as documented by Lievens (1999) in the case of Belgium and Sánchez-Domínguez *et al.* in Spain (2011).

Regarding the educational variable, men with at least a tertiary level of education and women with at least a primary level of education were more likely to marry non-Moroccans than were immigrants with lower education levels. These results echo those of previous studies linking a high level of education to weakened cultural barriers, as represented by the decision to marry outside one's group of origin (Kalmijn, 1998). Contrary to our initial hypothesis, completing schooling in Spain did not affect the transition to marriage. Because we limited our analysis to men and women who were at least 16 year old at the time of arrival, few of the participants in our study completed their education in Spain.

The influence of a relative or an acquaintance from the same country of birth on the decision to migrate positively influences the transition to an endogamous marriage and negatively affects the transition to an exogamous marriage. This correlation supports our hypothesis regarding the importance of social and transnational networks in promoting endogamous marriages among Moroccans in Spain.

The effects of the size and the sex ratio of the Moroccan community on the transition to marriage could not be proven in all cases. No significant association was evident for group size. Exogamous marriages were less likely to occur in large unbalanced provinces where Moroccan men outnumber Moroccan women in greater proportions. Whereas this correlation was expected among women (Moroccan women do not marry outside of their group when a surplus of men exists), it was not expected among men (Moroccan men do not marry outside of their group when a lack of women exists). This result is inconsistent with previous findings based on census data (Esteve and Jiménez, 2010).

Many queries remain unanswered, and many issues remain unresolved. We suspect that second-generation Moroccans born in Spain may alter the results obtained here. Further information about partnership histories would be of great

interest. It would be helpful to know whether endogamous marriages after migration were celebrated in Spain or in Morocco and to distinguish women who were single and had no marriage plans when they arrived in Spain from those who were single when they arrived in Spain but had plans to marry.

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Appendix 1 – *Distribution and characteristics of the Moroccan population by province*

Province	Total	%	Men	Women	Sex Ratio
Álava	2,682	0.4	1,774	908	195.4
Albacete	3,162	0.5	2,267	895	253.3
Alicante/Alacant	28,838	4.6	18,664	10,174	183.4
Almería	33,877	5.5	24,970	8,907	280.3
Ávila	1,985	0.3	1,195	790	151.3
Badajoz	3,205	0.5	1,952	1,253	155.8
Baleares (Illes)	17,926	2.9	11,886	6,040	196.8
Barcelona	114,485	18.4	71,094	43,391	163.8
Burgos	2,132	0.3	1,490	642	232.1
Cáceres	5,890	0.9	3,667	2,223	165.0
Cádiz	9,833	1.6	5,430	4,403	123.3
Castellón/Castelló	13,182	2.1	8,606	4,576	188.1
Ciudad real	3,615	0.6	2,536	1,079	235.0
Córdoba	2,644	0.4	1,627	1,017	160.0
Coruña (A)	1,485	0.2	917	568	161.4
Cuenca	2,063	0.3	1,555	508	306.1
Girona	30,132	4.8	18,775	11,357	165.3
Granada	9,108	1.5	5,420	3,688	147.0
Guadalajara	3,409	0.5	2,198	1,211	181.5
Guipúzcoa	2,964	0.5	1,916	1,048	182.8
Huelva	5,689	0.9	3,927	1,762	222.9
Huesca	2,510	0.4	1,623	887	183.0
Jaén	4,211	0.7	2,925	1,286	227.4
León	2,322	0.4	1,554	768	202.3
Lleida	10,964	1.8	7,361	3,603	204.3
Rioja (La)	5,792	0.9	3,804	1,988	191.3
Lugo	783	0.1	562	221	254.3
Madrid (Comunidad de)	76,303	12.3	45,769	30,534	149.9
Málaga	34,432	5.5	18,690	15,742	118.7
Murcia (Región de)	51,376	8.3	37,059	14,317	258.8
Navarra (C. Foral de)	5,950	1.0	3,937	2,013	195.6
Ourense	490	0.1	310	180	172.2
Asturias	1,788	0.3	1,108	680	162.9
Palencia	604	0.1	396	208	190.4
Palmas (Las)	13,641	2.2	9,270	4,371	212.1
Pontevedra	1,829	0.3	1,169	660	177.1
Salamanca	1,246	0.2	767	479	160.1
Santa Cruz de Tenerife	4,433	0.7	2,992	1,441	207.6
Cantabria	1,297	0.2	857	440	194.8
Segovia	1,930	0.3	1,293	637	203.0
Sevilla	8,797	1.4	4,907	3,890	126.1
Soria	830	0.1	521	309	168.6
Tarragona	28,210	4.5	18,359	9,851	186.4
Teruel	2,817	0.5	2,125	692	307.1
Toledo	9,956	1.6	6,354	3,602	176.4
Valencia/València	19,442	3.1	12,488	6,954	179.6
Valladolid	1,771	0.3	1,116	655	170.4
Vizcaya	3,786	0.6	2,592	1,194	217.1
Zamora	383	0.1	254	129	196.9
Zaragoza	7,554	1.2	4,819	2,735	176.2
Ceuta	5,674	0.9	2,649	3,025	87.6
Melilla	11,868	1.9	5,457	6,411	85.1
TOTAL	621,295	100	394,953	226,342	174.5

Source: National Immigrant Survey, 2007