Born Entrepreneurs?

Immigrant Self-Employment in Spain

NAHIKARI IRASTORZA

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Nahikari Irastorza

Lehenengo aitari, gero amari
gero anai-arrebari
t'azken orduan, ixil-ixilik
nere maite politari.

To my family, near and far

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Part I: Introduction and context

1 Introduction

The presence of immigrants in economically developed countries' marketplaces is becoming so significant that the competitiveness of a country or a region cannot be understood without taking migration into account. Immigrants not only participate in the labour market as salaried workers, they also create businesses. In this dissertation I analyse the different stages of the entrepreneurial process of immigrants in Spain and the Basque Country: starting from their propensity and intention to become self-employed (pre-start-up stage) through to the success or failure of these initiatives (post-start-up stage).

1.1   Justification of the study

International migration has become one of the hot topics on the political agenda of both sending and host countries. Since 2000, Spain, traditionally a sending country, has been one of the European countries to receiving significantly greater numbers of immigrants. Although the Cantabrian cornice and therefore the Basque region have not been amongst the most popular Spanish destinations, the presence of immigrants in the area is becoming more and more significant.

Reasons to migrate can be complex, so evoking a single reason for migration may be an oversimplification. Nevertheless, it is generally accepted that the majority of today's immigrants are motivated by the opportunity for socio-economic advancement. Hence, labour market insertion is one of the first goals of immigrants. However, due to issues surrounding ambiguous legal status, poor language skills, the lack of social networks, the difficulties in having foreign credentials recognised and discrimination, some immigrants decide to start a business and to become self-employed.

The number of self-employed immigrants has grown along with the sharp increase in the number of immigrants over the last decade. Immigrant neighbourhoods are becoming a part of the urban landscape, both in large cities, such as Chueca and Lavapiés in Madrid and Raval or Ciutat Vella in Barcelona, and in secondary cities, such as the area of San Francisco in Bilbao. As the visibility of immigrant

entrepreneurs increases, so does the volume of the literature on immigrant entrepreneurship.

In traditionally immigrant-receiving countries such as the United States, Canada, Australia and the United Kingdom, an extensive literature is devoted to the entrepreneurial activity of immigrants and ethnic minorities (Light 1972, 1979; Portes 1986, 1989; Aldrich and Waldinger 1990; Bates 1997; Rath 2000, 2002; Rath and Kloosterman 2000; Constant and Zimmermann 2004). In Spain, however, where immigration is a relatively recent phenomenon, the literature in the field is rather scarce. Solé, Parella and Cavalcanti (2007) published a repertoire of the literature on ethnic entrepreneurship in Spain from the perspective of various disciplines, ranging from pioneer studies by Buckley (1998) and Beltrán (2000) to most recent publications by Solé and Parella (2005), Oso, Villares and Golías (2005) and García Ballesteros et al. (2006).

Sociologists and anthropologists in Spain and also in the above-mentioned countries have focused on the motivations and business strategies of the so-called *ethnic* and immigrant entrepreneurs, perhaps overhighlighting the 'cultural' aspect of these people and their businesses. On the other hand, only a few economists (Borjas 1986; Butler and Herring 1991; Bates 1997; Constant et al. 2003; Constant and Zimmermann 2004; Levie 2007) have compared the entrepreneurial activity of immigrants and natives without focusing on the ethno-cultural characteristics of entrepreneurs.

This dissertation aims to fill this gap in the economics literature by comparing the entrepreneurial activity (during both the pre-start-up and post-start-up stages) of immigrants and natives in Spain and the Basque Country.[1] This will provide a better understanding of the behaviour of entrepreneurs based on their individual characteristics and possible regional differences in the economy (immigration rates, unemployment rates and immigration policies).

In sum, this dissertation is motivated by the following factors: (i) the increasing number of firms created and operated by immigrants in Spain and the ensuing social implications of such a change; (ii) the scarcity of studies which have addressed the entrepreneurial activity of immigrants from an economic perspective; and (iii) a desire to shed some light on the controversy surrounding the entrepreneurial activity of immigrants as a distinct form of entrepreneurship – the so-called *immigrant* or *ethnic entrepreneurship* – and the benefits of self-employment to entrepreneurs.

In order to analyse immigrants' entrepreneurial process during both the pre-start-up and post-start-up stages (i.e. their likelihood to seek self-employment and the probability of success of the businesses created by them), three sets of empirical tests have been conducted. First

of all, I analyse and compare the desire and propensity of immigrants for entrepreneurship in Spain. I do this in order to build on previous studies which report that immigrants are more enterprising because (i) they self-select and, thus, are usually enterprising (Constant and Zimmermann 2004), and (ii) they are at a disadvantage in the host labour market and, thus, look to self-employment as a coping strategy (Light 1972).

Whereas the likelihood of immigrants becoming self-employed has been examined (Constant and Zimmermann 2004; Levie 2007), little is known about what happens once their ventures are created. How long do firms survive? Are they as successful as native-owned firms? In the second and third sets of empirical tests I analyse the performance of immigrant and native businesses. Specifically, in my second empirical study, I look at the survival rates of businesses as well as at some characteristics of foreign- and native-owned firms in the Basque Country.

The success of self-employment initiatives can also be measured by comparing the income of entrepreneurs to the salaries of workers. Hence, my third set of analyses focuses on income differences between immigrant entrepreneurs and non-entrepreneurs in Spain, in order to shed some light on the debate surrounding the socio-economic benefits immigrants derive from self-employment. These three topics provide a general overview of the entrepreneurial ability of immigrants and test the appropriateness of entrepreneurship as a means to successful labour insertion.

1.2 Objectives of the study

The theoretical discussions of concepts related to the entrepreneurial activity of immigrants and ethnic minorities, and the gaps found in empirical studies lead me to pose the following general and specific research objectives:

(1) To perform an empirical analysis of immigrant versus native entrepreneurship activity in Spain and the Basque Country, in order to gain a better understanding of potential differences in terms of human capital attributes, country of origin, and regional economies (immigration and unemployment rates and immigration policy). Two specific objectives arise from the first general objective:

(1.1) To establish whether there are differences in (i) the likelihood of immigrants and natives starting a firm and (ii) the likelihood of immigrants of various origins to starting a business.

(1.2) To measure the success of entrepreneurship by analysing the survival rates of foreign versus native ventures, and by comparing the income immigrants' obtain from self-employment to that of salaried immigrants.

(2) To perform an empirical analysis of the benefits of self-employment as a means of economic integration of immigrants. More specifically, I aim to:

(2.1) Analyse the economic benefits immigrants may derive from self-employment by comparing the earnings of salaried and self-employed immigrants and possible underlying factors to explain potential gaps.

These objectives will be reached via the results obtained in each of the three sets of empirical analyses comprised in this dissertation.

1.3   Definition of concepts

In order to avoid misunderstandings on the use of key concepts such as *immigrant* versus *foreigner* and *self-employed* versus *entrepreneur*, in this section I will define each of the terms used in this dissertation.

1.3.1   Immigrants and foreigners

In sociology, an immigrant is defined as an individual who changes his or her place of residence from one geographically delimited area to another; in circumstances that generate a social, political or administrative reorganisation shift for the immigrant. People moving from one Spanish town, province or region to another are *internal* immigrants while people moving from one country to another are *international* immigrants. Some studies have focused on internal migration in Spain from the 1950s to the 1970s. Since the 1990s, however, international migration has been what really matters in Spain. Given that this dissertation analyses the entrepreneurial activity of international immigrants, I will hereon use the term 'immigrant' to refer only to international immigrants.

On the other hand, the legal term 'foreigner' allows us to distinguish between individuals who have the Spanish citizenship from those who do not. In Spain, the term 'resident foreigners' refers to the foreign-born who have lived in the country legally for more than three months, excluding those who have acquired citizenship and thus became Spaniards.

In sum, the concept of immigrant includes the whole population of the foreign-born who live in Spain, regardless of their citizenship, whereas foreigners are international migrants who live in Spain and do not have Spanish citizenship.

Two databases were used to conduct the empirical tests of this dissertation. The first and the third sets of analyses are based on an annual survey conducted under the Global Entrepreneurship Monitor (GEM) project. Since the variable which distinguishes people according to their origin is based upon the question 'In which country were you born?', in these tests I will use the sociological concept *immigrant* (versus *native*), regardless of citizenship. On the other hand, the second set of empirical tests is based on the Basque firms' census. Specifically, my sample only includes firms with one owner. These firms are classified by the personal ID of the entrepreneur, with those owned by non-Spaniards starting with an X. Thus, in these analyses I will use the term *foreigner* (and *foreign-owned firms*) to refer to immigrants who live in Spain but have not acquired Spanish citizenship, and *natives* (and *native-owned firms*) to include natives and immigrants who became Spanish citizens.

1.3.2   Entrepreneurs and the self-employed

From Cantillon (circa 1730) to Gartner (1988) the concept of entrepreneurship has been widely discussed in the literature. Due to the proliferation of theories and taxonomies which often conflict and overlap, it has been claimed that defining the concepts of entrepreneur and entrepreneurship is one of the most difficult tasks faced by researchers working in the field (Parker 2004). Parker (2004) illustrates this statement by showing the following viewpoints: labour economists equate entrepreneurs with the self-employed since they are risk-takers. Whereas some authors think this definition is too broad and argue that only those business owners who employ workers should be considered as entrepreneurs, others find the definition too narrow because it excludes entrepreneurship in the corporate and social spheres. In addition, many other researchers, following the Schumpeterian tradition, identify entrepreneurship and the entrepreneurs with the innovation of products, production processes, markets or forms of organisation. Finally, some scholars focus on psychological traits and attitudes considered as particular to entrepreneurs.

The concept of self-employment can also be controversial. The self-employed are often described as individuals who do not earn a salary by working for others, but who earn an income by running a business at their own risk. Parker (2004) summarises some of the conceptual problems and grey areas of this definition as follows: in many government surveys used in empirical research, the self-employment status is

assessed by respondents and thus, is based on each individual's under-standing of self-employment rather than on more objective legal or fis-cal definitions. In addition, there are some grey areas between paid em-ployment and self-employment. For instance, some workers classified as self-employed are in fact employees who work for one client firm. This is typical of the construction industry where workers are also known as 'falsely self-employed'. Finally, some other of the grey areas between employment and self-employment include freelancers, home-makers, franchise holders and members of worker cooperatives.

In this dissertation all these concepts will be defined according to the description of the explanatory variables in the two databases. Based on GEM data, in the first and third set of empirical tests the explanatory variable *self-employed* is built upon the f question 'Are you, alone or with others, currently the owner of a company you help manage, self-em-ployed, or selling any goods or services to others?' Thus, a subjective answer is elicited, according to which both *self-employed* and *entrepreneur* could apply to people who answer in the affirmative. The second set of analyses is conducted by using firm census data provided by the Basque Statistical Institute that includes all firms created under various legal structures (sole proprietorship firms, worker cooperatives, limited-liability companies, publicly traded companies). Hence, since the unit of observation of this database is the firm, not all the people registered as self-employed with the social security department are included in the database, but only those who own a business. It also involves business owners who are not necessarily self-employed.

For these and other reasons, both in the empirical tests and at the conceptual level, I will use both '*entrepreneur*' and '*self-employed*' as syno-nyms to refer to people who earn a living by working on their own.

1.4   Structure of the study

The dissertation is comprises of eight chapters organised in four parts: an introduction and justification of the object of study, a theoretical dis-cussion, the empirical study and the final conclusions.

In the two chapters of part one, I introduced and contextualised the object of study. I state the aims and the rationale for the study, present the latest facts and figures on immigration, labour market and entrepre-neurship in Spain and review the Spanish immigration law.

A literature review analysing the determinants of self-employment, firm survival and earnings, as well as on appropriateness of the con-cepts of ethnic and immigrant entrepreneurship follows in the second part. I present the conceptual framework of my analyses in chapter four.

Chapter five, in part three, provides a description of the databases, samples, variables and methods. My empirical research work, aimed to analyse the entrepreneurial ability of foreign immigrants (both at the pre-start-up and post-start-up stages), comprises chapter six. More specifically, in this chapter I compare the likelihood of immigrants starting an entrepreneurial activity to that of natives in Spain, the survival rates of what will be defined as foreign-owned and native-owned firms in the Basque Country, and the earnings of immigrant entrepreneurs to those of salaried immigrants in Spain.

The final conclusions and the limitations of the study (chapter seven) as well as some policy implications and suggestions for future research (chapter eight) are presented in the last part of the dissertation.

2 Immigration to Spain: Policies and facts

2.1 Immigration, labour market and entrepreneurship in Spain

This section provides an overview of the immigration, labour market and self-employment numbers in Spain and the Basque Country in order to facilitate the understanding of both the theoretical and empirical analyses of my dissertation. The first part of this section focuses on general facts about immigration, and the second one on salaried and self-employed foreigners in the Spanish labour market.

2.1.1 International migration to Spain

Immigration to Spain has increased dramatically over the last decade, with the number of foreigners rising 600 per cent and the proportion of foreigners in the general population growing from 1.6 per cent in 1998 to nearly 10 per cent in 2007, as shown in Table 1. Both in 1998 and 2007 the Balearic and Canary Islands, Valencia, Madrid and Catalonia received the highest numbers of immigrants. It is important to point out significant increases in the number of foreigners in the regions of Murcia (17 per cent) and La Rioja (14 per cent). Immigration rates have remained more modest in the Cantabrian regions, including the Basque Country. Although the number of foreigners increased by 6.5 per cent in the Basque Country during the 1998-2007 period, it is half the Spanish average. The mean age of foreigners living in Spain in January 2007 was 34 years and 46 per cent of them were women.

Finally, Graph 1 shows that the Balearic Islands hosted high relative numbers of foreigners both in 1998 and 2007. It also highlights the extraordinary increase experienced by Murcia, Valencia and Madrid and, to a lesser extent, by the Canary Islands, Catalonia and the rest of the regions. In the Basque Country, the growth has been constant but much more modest.

The regions of origin of immigrants have also changed over the last decade. As shown in Table 2, 40 per cent of foreigners who lived in Spain in 1998 were born in other European Union (EU) countries, 22 per cent in Africa and only 13 per cent in South American countries. By contrast, in 2006, 33 per cent of foreigners in Spain came from South

Table 1 *Foreign population in Spain (1998-2007)*

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
					Number of foreigners					
Andalusia	99,781	110,114	128,916	164,145	212,202	282,901	321,570	420,207	488,928	526,942
Aragon	7,846	8,938	12,051	25,132	44,028	61,896	77,545	96,848	105,361	123,591
Asturias	6,029	6,048	7,859	10,848	14,846	19,691	22,429	26,797	30,258	32,586
Balearic Island	38,093	45,017	54,729	73,614	99,744	126,505	131,423	156,270	167,751	189,437
Canary Islands	55,218	62,677	77,196	107,930	143,138	179,493	185,781	222,260	233,447	248,871
Cantabria	3,147	3,463	4,273	6,833	10,334	13,677	16,364	20,547	23,834	26,744
Castilla y Leon	15,121	16,000	18,381	26,572	42,640	59,440	71,300	91,318	106,159	118,951
Castilla La Mancha	9,854	10,292	13,854	27,887	48,123	70,899	88,858	115,223	132,725	158,905
Catalonia	121,361	144,925	181,598	257,354	382,067	543,008	642,846	798,904	913,757	966,004
Valencia	102,118	130,192	156,207	199,574	301,143	413,760	464,317	581,985	668,075	727,080
Extremadura	4,082	7,476	8,713	11,627	15,125	17,885	20,066	25,341	27,467	29,068
Galicia	19,693	21,787	25,602	33,058	42,462	53,808	58,387	69,363	73,756	81,023
Madrid	115,202	134,165	165,734	305,656	444,440	589,215	664,255	780,752	800,512	854,232
Murcia	11,916	17,237	26,189	55,458	83,511	113,912	132,918	165,016	189,053	200,964
Navarra	4,313	5,971	9,188	19,497	30,686	38,741	43,376	49,882	55,444	55,427
Basque Country	**15,198**	**16,793**	**21,140**	**27,438**	**38,408**	**49,231**	**59,166**	**72,894**	**85,542**	**98,108**
La Rioja	2,539	3,320	4,397	8,193	15,288	20,570	24,988	31,075	35,037	36,583
Ceuta	3,114	3,093	3,050	3,281	3,334	3,203	2,863	3,037	3,078	2,861
Melilla	2,460	1,447	4,803	6,561	6,425	6,333	5,874	2,891	3,982	5,191
Spain	**637,085**	**748,954**	**923,879**	**1,370,657**	**1,977,946**	**2,664,168**	**3,034,326**	**3,730,610**	**4,144,166**	**4,482,568**

	% of the total population									
Andalusia	1.38	1.51	1.76	2.22	2.84	3.72	4.18	5.35	6.13	6.55
Aragon	0.66	0.75	1.01	2.09	3.62	5.03	6.21	7.63	8.25	9.54
Asturias	0.56	0.56	0.73	1.01	1.38	1.83	2.09	2.49	2.81	3.03
Balearic Island	4.78	5.48	6.47	8.38	10.88	13.35	13.76	15.9	16.76	18.41
Canary Islands	3.39	3.75	4.5	6.06	7.76	9.47	9.7	11.29	11.7	12.31
Cantabria	0.6	0.66	0.8	1.27	1.91	2.49	2.95	3.65	4.2	4.67
Castilla y Leon	0.61	0.64	0.74	1.07	1.72	2.39	2.86	3.64	4.21	4.71
Castilla La Mancha	0.57	0.6	0.8	1.59	2.7	3.9	4.81	6.08	6.87	8.05
Catalonia	1.97	2.33	2.9	4.05	5.87	8.1	9.44	11.42	12.81	13.42
Valencia	2.54	3.2	3.79	4.75	6.96	9.25	10.22	12.4	13.9	14.92
Extremadura	0.38	0.7	0.81	1.08	1.41	1.67	1.87	2.34	2.53	2.67
Galicia	0.72	0.8	0.94	1.21	1.55	1.96	2.12	2.51	2.67	2.92
Madrid	2.26	2.61	3.18	5.69	8.04	10.3	11.44	13.09	13.32	14.09
Murcia	1.07	1.52	2.28	4.66	6.81	8.97	10.27	12.35	13.8	14.45
Navarra	0.81	1.11	1.69	3.5	5.39	6.7	7.42	8.41	9.21	9.16
Basque Country	**0.72**	**0.8**	**1.01**	**1.31**	**1.82**	**2.33**	**2.8**	**3.43**	**4.01**	**4.58**
La Rioja	0.96	1.25	1.66	3.03	5.43	7.16	8.51	10.32	11.44	11.86
Ceuta	4.32	4.2	4.05	4.33	4.38	4.27	3.84	4.03	4.06	3.75
Melilla	4.09	2.54	7.25	9.54	9.29	9.25	8.64	4.41	5.95	7.55
Spain	**1.6**	**1.86**	**2.28**	**3.33**	**4.73**	**6.24**	**7.02**	**8.46**	**9.27**	**9.94**

Source: Padrón municipal (INE: National Statistics Institute)

Graph 1 *Foreign population in Spain (1998-2007)*
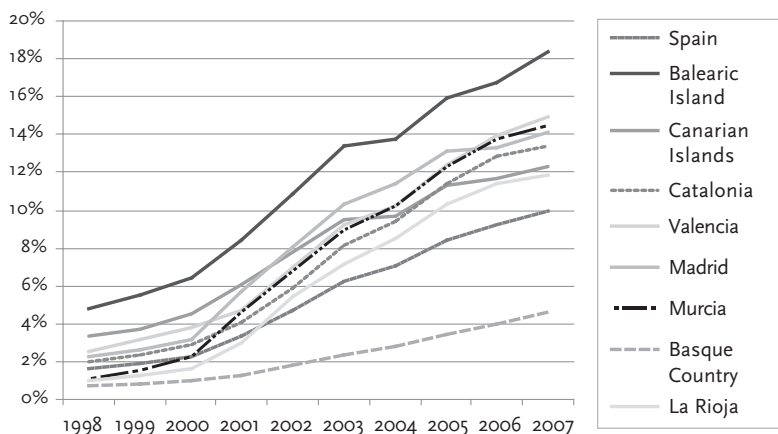
America, a mere 19 per cent from EU countries, 17 per cent from Africa and 16 per cent from other European but non-EU countries.

Graph 2 illustrates the changes in the foreign population of Spain by world regions. The number of foreigners from South America and European non-EU countries clearly increased between 1998 and 2006, and rose particularly sharply for South Americans between 2000 and 2004. On the other hand, the percentage of foreigners born in EU countries and, to a lesser extent, in Africa and Spain decreased. This is also true of foreigners from other parts of the world, such as Asia and North America. Moreover, the percentage of foreigners from EU

Graph 2 *Foreign population in Spain by region of origin (1998-2006)*
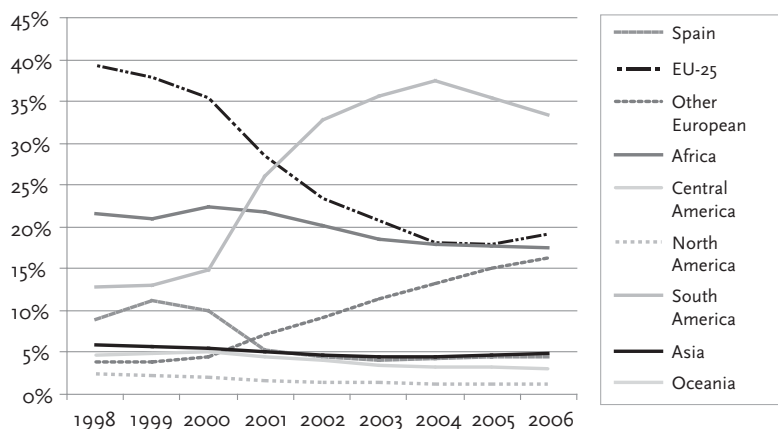
Table 2 *Foreign population in Spain by region of origin (1998-2006)*

	1998	1999	2000	2001	2002	2003	2004	2005	2006
					Number of foreigners				
Spain	56,890	84,303	92,253	72,524	87,929	110,801	127,378	166,413	188,291
EU-25	250,646	284,092	327,985	389,600	462,241	552,235	548,908	669,485	791,573
Other European	25,136	28,542	41,286	96,315	179,583	303,394	404,537	564,159	671,707
Africa	138,124	157,678	207,437	298,899	399,836	492,951	541,518	663,156	725,960
Central America	30,444	36,472	46,852	62,189	78,546	94,697	101,439	119,773	127,504
North America	15,063	16,798	18,955	23,025	28,290	36,901	38,660	47,107	47,650
South America	82,301	97,515	136,632	356,929	647,364	950,021	1,136,002	1,321,800	1,382,450
Asia	37,483	42,408	51,220	69,636	92,321	120,995	133,840	176,290	206,476
Oceania	998	1,146	1,258	1,540	1,836	2,173	2,044	2,427	2,555
Total	637,085	748,954	923,878	1,370,657	1,977,946	2,664,168	3,034,326	3,730,610	4,144,166
					% of the total foreign population				
Spain	8.93	11.26	9.99	5.29	4.45	4.16	4.20	4.46	4.54
EU-25	39.34	37.93	35.50	28.42	23.37	20.73	18.09	17.95	19.10
Other European	3.95	3.81	4.47	7.03	9.08	11.39	13.33	15.12	16.21
Africa	21.68	21.05	22.45	21.81	20.21	18.50	17.85	17.78	17.52
Central America	4.78	4.87	5.07	4.54	3.97	3.55	3.34	3.21	3.08
North America	2.36	2.24	2.05	1.68	1.43	1.39	1.27	1.26	1.15
South America	12.92	13.02	14.79	26.04	32.73	35.66	37.44	35.43	33.36
Asia	5.88	5.66	5.54	5.08	4.67	4.54	4.41	4.73	4.98
Oceania	0.16	0.15	0.14	0.11	0.09	0.08	0.07	0.07	0.06
Total	100	100	100	100	100	100	100	100	100

Source: Padrón municipal (INE: National Statistics Institute)

countries decreased from 2000 to 2004 and began to increase there-
after. Finally, the number of foreigners from other European countries
remained relatively stable from 1998 to 2000 and then started to in-
crease gradually.

The numbers of foreigners in Spain in 1998 and 2006 are shown in
Table 3 by country of origin and gender. The largest percentages of the
population appear in blue boxes.

As shown in Table 3, with few exceptions, the largest group of for-
eigners who lived in Spain in 1998 came from EU countries, whereas
over 40 per cent of the foreign population was Latin American in
2006. In both years Moroccans constituted the largest group. However,
while immigrants from the United Kingdom and Germany made up
the second largest groups in 1998, by 2006 they were replaced by
Ecuadorians and Romanians, after a dramatic growth over one decade.
The largest number of male immigrants was that of Moroccans,
whereas in the case of females, they were Ecuadorian.

Graphs 3 (1998) and 4 (2006) are based on Table 3. In 1998 the lar-
gest groups constituted 60 per cent of the total foreign population, and
over 55 per cent eight years later. In 1998 Moroccans, British, Germans,
Portuguese and French constituted the largest groups (45 per cent).

By 2006, the composition of the foreign population by country of ori-
gin had changed significantly. Moroccans were still the main group, fol-
lowed by Ecuadorians, Romanians, Colombians and British. These
groups represented more than half of the foreign population who lived
in Spain in 2006.

2.1.2   Immigration and labour market trends in Spain

In order to better understand the immigrants' motivation and propen-
sity for entrepreneurship in Spain, in this section I present some statis-
tics about the affiliation of foreign workers with the Spanish Social
Security department and the work permits given to them by Spanish re-
gion, type of work (self- or wage-employment), industry sector, origin
and gender.

2.1.2.1   Social Security registrations
The increase in the foreign population in Spain resulted in an increase
in the number of foreigners registered with the Spanish Social Security
department. As shown in Table 4, foreigners registered with the Social
Security department represented 2 per cent of the general population in
1999 and 8 per cent in 2005: the number of foreigners who joined the
general regime increased 400 per cent for the period to reach over one
million entries by 2005.

Table 3 *Foreign population in Spain by country of origin and gender*
(1998-2006)

	Total		Men		Women	
	1998	*2006*	*1998*	*2006*	*1998*	*2006*
	Number of foreigners					
Belgium	11,840	27,439	5,501	13,961	6,338	13,478
France	29,015	74,605	12,903	37,247	16,112	37,358
Italy	13,261	54,914	8,611	34,879	4,650	20,035
Netherlands	13,823	34,644	6,494	18,146	7,329	16,498
Portugal	30,463	71,402	15,076	42,893	15,387	28,509
Germany	55,475	138,573	26546	69868	28929	68705
UK	69,818	261,116	33,376	132,610	36,443	128,506
Morocco	103,225	513,007	66,869	345,808	36,356	167,199
Argentina	21,285	189,625	10,306	98,541	10,979	91,084
Peru	19,359	96,187	7,507	45,639	11,852	50,548
Bolivia	1,190	137,159	495	59,672	695	77,487
Colombia	9,884	263,339	3,137	113,697	6,747	149,642
Ecuador	3,745	446,111	1,521	216,680	2,224	229,431
Bulgaria	1,358	99,083	712	54,474	646	44,609
Romania	2,260	394,078	1,269	210,906	991	183,172
Total	382,383	2,308,121	198,342	1,229,641	184,041	1,078,480
Other countries	254,702	1,836,045	123,919	985,828	130,783	850,217
Total foreigners	637,085	4,144,166	322,261	2,215,469	314,824	1,928,697
	% of the total foreign population					
Belgium	**1.86**	0.66	**1.71**	0.63	**2.01**	0.70
France	**4.55**	1.80	**4.00**	1.68	**5.12**	1.94
Italy	**2.08**	1.33	**2.67**	1.57	1.48	1.04
Netherlands	**2.17**	0.84	**2.02**	0.82	**2.33**	0.86
Portugal	**4.78**	1.72	**4.68**	1.94	**4.89**	1.48
Germany	**8.71**	**3.34**	**8.24**	**3.15**	**9.19**	**3.56**
UK	**10.96**	**6.30**	**10.36**	**5.99**	**11.58**	**6.66**
Morocco	**16.20**	**12.38**	**20.75**	**15.61**	**11.55**	**8.67**
Argentina	**3.34**	**4.58**	**3.20**	**4.45**	**3.49**	**4.72**
Peru	**3.04**	**2.32**	**2.33**	**2.06**	**3.76**	**2.62**
Bolivia	0.19	**3.31**	0.15	**2.69**	**0.22**	**4.02**
Colombia	1.55	**6.35**	0.97	**5.13**	**2.14**	**7.76**
Ecuador	0.59	**10.76**	0.47	**9.78**	0.71	**11.90**
Bulgaria	0.21	**2.39**	0.22	**2.46**	0.21	**2.31**
Romania	0.35	**9.51**	0.39	**9.52**	0.31	**9.50**
Total	60.02	55.70	61.55	55.50	58.46	55.92
Other countries	39.98	44.30	38.45	44.50	41.54	44.08
Total foreigners	100	100	100	100	100	100

Source: Padrón municipal (INE: National Statistics Institute)

Graph 3 *Foreign population in Spain in 1998 by country of origin (%)*

2.08
1.86   2.17   3.04
                    3.34
                    4.55
                    4.78
39.98
                    8.71

        16.2   10.96

- Belgium
- Italy
- Netherlands
- Peru
- Argentina
- France
- Portugal
- Germany
- UK
- Morocco
- Others
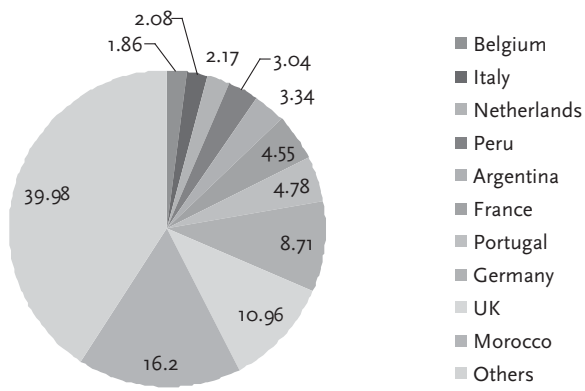
Graph 4 *Foreign population in Spain in 2006 by country of origin (%)*

2.39
2.32   3.31
            3.34
            4.58
            6.3
44.3   6.35

            9.51

        12.38   10.76

- Peru
- Bulgaria
- Bolivia
- Germany
- Argentina
- UK
- Colombia
- Rumania
- Ecuador
- Morocco
- Others
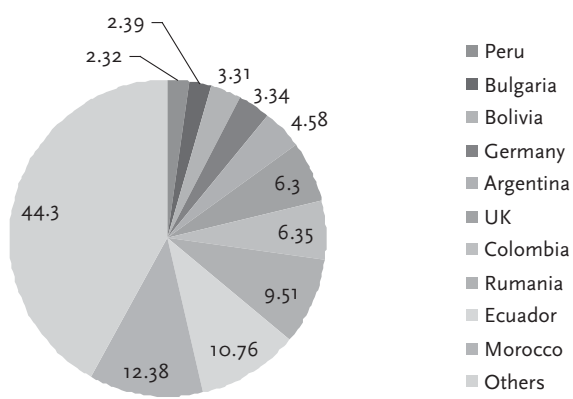
Table 4 *Foreign population registered with the Social Security department (1999-2005)*

	1999	2000	2001	2002	2003	2004	2005
Number of foreigners registered							
General regime	184,690	239,447	356,297	508,484	625,504	737,954	1,001,546
Coal mining regime	398	415	446	481	500	531	521
Agricultural regime	43,006	48,447	68,243	94,018	116,631	116,724	143,058
Domestic servant regime	44,841	45,650	51,611	72,519	79,182	73,893	175,051
Sea workers regime	1,435	2,020	2,570	2,920	3,239	3,501	3,987
Self-employment regime	**60,606**	**66,732**	**77,908**	**88,047**	**99,748**	**115,627**	**136,977**
Total	334,976	402,711	557,074	766,470	924,805	1,048,230	1,461,140
% of the total population registered							
General regime	1.77	2.16	3.06	4.21	5.02	5.73	7.42
Coal mining regime	2.03	2.28	2.69	3.23	3.73	4.46	5.01
Agricultural regime	3.72	4.25	6.05	8.37	10.28	10.75	13.71
Domestic servant regime	30.09	30.21	33.11	41.20	42.89	40.82	61.49
Sea workers regime	1.81	2.55	3.29	3.82	4.27	4.70	5.48
Self-employment regime	**2.42**	**2.60**	**2.98**	**3.31**	**3.65**	**4.07**	**4.67**
Total	2.34	2.67	3.56	4.75	5.57	6.14	8.19
% of the total foreign population registered							
General regime	55.14	59.46	63.96	66.34	67.64	70.40	68.55
Coal mining regime	0.12	0.10	0.08	0.06	0.05	0.05	0.04
Agricultural regime	12.84	12.03	12.25	12.27	12.61	11.14	9.79
Domestic servant regime	13.39	11.34	9.26	9.46	8.56	7.05	11.98
Sea workers regime	0.43	0.50	0.46	0.38	0.35	0.33	0.27
Self-employment regime	**18.09**	**16.57**	**13.99**	**11.49**	**10.79**	**11.03**	**9.37**
Total	100	100	100	100	100	100	100

Source: Boletín de Estadísticas Laborales, Ministerio de Trabajo y Asuntos Sociales (INE: Spanish Statistics Institute)

Interestingly, the percentage of foreigners registered as self-employed in 1999 out of the total self-employed in Spain (2.42 per cent) was higher than that of foreign people registered in the general regime (1.77 per cent). However, by 2005 the percentage of foreigners registered in the general regime out of the total population registered in Spain (7.42 per cent) overtook that of the foreign self-employed (4.67 per cent). In addition, the presence of foreign workers in the domestic servant regime, already high in 1999 (30 per cent), reached 61 per cent of the total people registered as domestic servants in Spain by 2005. The

Graph 5 *Foreign population registered with the Social Security department*
(1999-2005)

| ── General regimen | ── Self-employed regimen | ── All foreign workers |

agricultural and sea workers regimes also experienced substantial in-
creases for the period.

The proportion of foreigners registered in the general regime to the
total registered foreign population increased between 1999 and 2005
while the self-employed decreased by nearly half. Foreigners registered
in the domestic servant regime decreased between 1999 and 2004, but
increased sharply in 2005. As a result, the proportion of people regis-
tered in the general regime out of the total foreign population regis-
tered with the Social Security department decreased in 2005. The agri-
cultural regime decreased slightly until 2003 and sharply thereafter.

Graph 5 illustrates the changes in the foreign population registered
with the Spanish Social Security department between 1999 and 2005.
While in 1999 the proportion of foreigners listed as self-employed rela-
tive to the total number of people registered as self-employed in Spain
was higher than that of foreigners registered in the general regime, in
2001 the proportion was the same and the trend was reversed there-
after. By 2005 foreigners represented over 7 per cent of people regis-
tered in the general regime and under 5 per cent of the self-employed.
Changes for all foreign workers are parallel to those of foreigners regis-
tered in the general regime: both experienced a slight growth between
1999 and 2000 and a sharper increase after 2004. For its part, the pro-
portion of self-employed foreigners increased very gradually.

Both in 1999 and 2005 the majority of foreigners affiliated with the
Social Security department were registered in Catalonia, Madrid,
Andalusia, Valencia and the Canary Islands (see Table 5). By 2005 the

Table 5 *Foreign population registered with the Social Security department by Spanish regions (1999-2005)*

	1999	2000	2001	2002	2003	2004	2005
Number of foreigners registered							
Andalusia	38,792	44,718	61,446	84,589	101,416	114,029	157,081
Aragon	6,595	8,800	13,613	20,384	24,711	29,016	44,771
Asturias	2,674	3,061	4,297	5,624	6,342	6,941	9,975
Balearic Island	19,132	26,853	32,611	38,977	42,911	46,236	62,041
Canary Islands	33,549	37,486	46,104	57,034	61,768	66,833	80,586
Cantabria	1,338	1,697	2,877	4,054	4,949	6,801	9,333
Castilla y Leon	5,265	6,558	10,705	18,327	22,624	28,164	49,291
Castilla La Mancha	6,294	7,708	12,615	18,619	21,819	27,324	39,612
Catalonia	73,214	90,006	123,290	164,665	200,018	234,969	329,609
Valencia	29,442	35,121	52,676	80,691	104,514	120,891	174,551
Extremadura	5,083	5,472	6,579	7,507	7,543	7,673	8,946
Galicia	6,912	7,850	9,999	12,566	15,012	18,690	25,192
Madrid	75,140	89,415	124,323	173,658	209,262	229,407	318,418
Murcia	16,190	18,999	29,218	42,743	55,325	57,059	77,807
Navarra	4,198	5,681	8,994	12,439	15,747	17,866	23,645
Basque Country	**6,613**	**7,812**	**10,691**	**14,687**	**18,603**	**22,292**	**31,744**
La Rioja	2,073	2,739	4,092	6,327	8,163	9,905	13,939
Ceuta	641	714	891	1,041	1,181	1,334	1,604
Melilla	1,831	2,023	2,054	2,540	2,897	2,799	2,996
Spain	**334,976**	**402,713**	**557,075**	**766,472**	**924,805**	**1,048,229**	**1,461,140**
% of the total foreign population registered							
Andalusia	11.58	11.10	11.03	11.04	10.97	10.88	10.75
Aragon	1.97	2.19	2.44	2.66	2.67	2.77	3.06
Asturias	0.80	0.76	0.77	0.73	0.69	0.66	0.68
Balearic Islands	5.71	6.67	5.85	5.09	4.64	4.41	4.25
Canary Islands	10.02	9.31	8.28	7.44	6.68	6.38	5.52
Cantabria	0.40	0.42	0.52	0.53	0.54	0.65	0.64
Castilla y Leon	1.57	1.63	1.92	2.39	2.45	2.69	3.37
Castilla La Mancha	1.88	1.91	2.26	2.43	2.36	2.61	2.71
Catalonia	21.86	22.35	22.13	21.48	21.63	22.42	22.56
Valencia	8.79	8.72	9.46	10.53	11.30	11.53	11.95
Extremadura	1.52	1.36	1.18	0.98	0.82	0.73	0.61
Galicia	2.06	1.95	1.79	1.64	1.62	1.78	1.72
Madrid	22.43	22.20	22.32	22.66	22.63	21.89	21.79
Murcia	4.83	4.72	5.24	5.58	5.98	5.44	5.33
Navarra	1.25	1.41	1.61	1.62	1.70	1.70	1.62
Basque Country	**1.97**	**1.94**	**1.92**	**1.92**	**2.01**	**2.13**	**2.17**
La Rioja	0.62	0.68	0.73	0.83	0.88	0.94	0.95
Ceuta	0.19	0.18	0.16	0.14	0.13	0.13	0.11
Melilla	0.55	0.50	0.37	0.33	0.31	0.27	0.21
Spain	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 5 *Foreign population registered with the Social Security department by Spanish regions (1999-2005) (continued)*

	1999	2000	2001	2002	2003	2004	2005
% of the total population registered by region							
Andalusia	1.71	1.88	2.47	3.29	3.77	4.08	5.40
Aragon	1.50	1.93	2.90	4.24	4.99	5.69	8.38
Asturias	0.83	0.91	1.23	1.58	1.76	1.90	2.67
Balearic Island	5.49	7.26	8.49	9.98	10.93	11.58	14.73
Canary Islands	5.60	5.91	6.98	8.34	8.78	9.32	10.81
Cantabria	0.79	0.94	1.54	2.12	2.52	3.36	4.45
Castilla y Leon	1.03	1.23	1.94	3.19	3.78	4.49	7.37
Castilla La Mancha	0.81	0.96	1.54	2.23	2.57	3.12	4.38
Catalonia	2.77	3.25	4.31	5.62	6.67	7.65	10.28
Valencia	2.02	2.29	3.30	4.87	6.09	6.83	9.43
Extremadura	1.56	1.62	1.92	2.16	2.12	2.13	2.42
Galicia	0.81	0.89	1.11	1.36	1.59	1.93	2.53
Madrid	3.52	3.93	5.19	7.02	8.23	8.77	11.49
Murcia	4.18	4.65	6.76	9.32	11.36	11.32	14.66
Navarra	1.98	2.56	3.88	5.20	6.39	7.05	9.04
Basque Country	**0.85**	**0.96**	**1.27**	**1.71**	**2.13**	**2.51**	**3.48**
La Rioja	2.08	2.62	3.77	5.69	6.99	8.22	11.09
Ceuta	4.42	4.61	5.57	6.12	6.75	7.58	8.81
Melilla	12.89	13.76	13.69	15.97	17.56	16.37	17.32
Spain	**2.34**	**2.67**	**3.56**	**4.75**	**5.57**	**6.14**	**8.19**

Sources: Boletín de Estadísticas Laborales, Ministerio de Trabajo y Asuntos Sociales (INE: Spanish Statistics Institute)

number of foreigners registered with the Social Security department in Spain reached 1,400,000, whereas in the Basque Country they numbered over 31,000. Nevertheless, the relative importance of some of these regions, such as Catalonia and Valencia (as well as in other regions where the presence of foreigners was not as important) increased slightly between 1999 and 2005, while it decreased in the case of Andalusia, Madrid and, especially, the Canary Islands.

Murcia and the Balearic Islands were the regions where the registration of foreigners with the Social Security department relative to that of the total population was highest both in 1999 and in 2005. Madrid, Catalonia and, interestingly, La Rioja, which experienced a notable increase over the period, came next. The proportion of foreigners registered with the Social Security department in Spain increased from 2.3 per cent to 8.2 per cent and, in the Basque Country from around 0.8 per cent to 3.5 per cent over the 1999-2005 period.

Graph 6 shows changes in the proportion of foreigners to the total population registered with the Social Security department for the five regions with the largest numbers of Social Security registrations, plus

Graph 6 *Foreign population registered with the Social Security department by Spanish regions (1999-2005)*
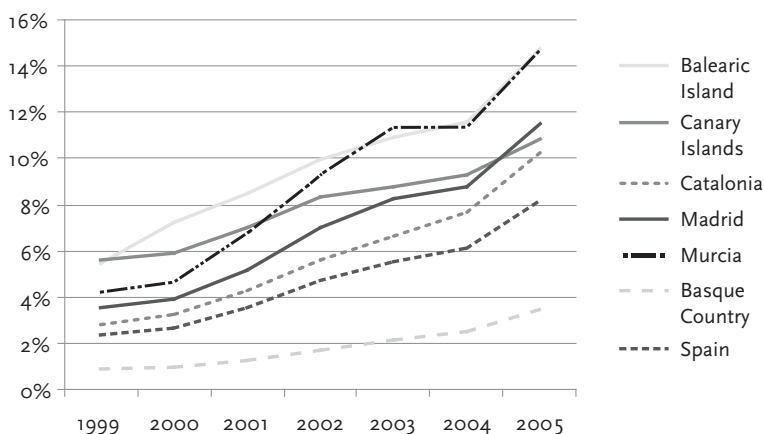
the Basque Country and Spain. Graph 6 allows us to visualise three stages corresponding to the efforts made by the Spanish government, in 2000 and 2005, to promote the 'legalisation' of immigrants without a residency permit. As a result of these processes, and especially in 2005, the proportion of registered foreigners increased sharply. The Balearic and the Canary Islands, as well as Murcia, showed slightly different patterns and additional cutting points in years 2002 and 2003. In the Basque Country, both the initial proportion of registrations in 1999 and the rate of increase in the proportion of registered foreigners were comparatively low.

Graph 7 illustrates the changes in the proportion of foreigners registered with the Spanish Social Security department by regions, for 1999 and 2005. Although the regional distributions appear similar for both years, there are some differences. In 1999, the Canary and Balearic Islands recorded the highest proportion of foreigners registered with the Social Security department (between 4.5 and 6 per cent), followed by Madrid and Murcia (between 3 and 4.5 per cent), and by Extremadura, Andalusia, Valencia, Catalonia, Navarra and La Rioja (between 1.5 and 3 per cent). The remaining regions showed a proportion lower than 1.5 per cent. By 2005 these numbers had increased in all regions, particularly in Murcia, Navarra, La Rioja, Castilla y Leon and Aragon.

I focus next on the changes in the numbers of foreigners registered with the Spanish Social Security department by origin, age, gender and type of work (salaried versus self-employed).

As shown in Table 6, in 1999 the greatest numbers of foreigners registered with the Spanish Social Security department came from EU

Graph 7   *Foreign population registered with the Social Security department out of the total population registered (%)*

1999

2005

	0.79 – 1.50
	1.51 – 3.00
	3.01 – 4.50
	4.51 – 6.00
	6.01 – 9.00
	9.01 – 12.00
	12.01 – 14.73
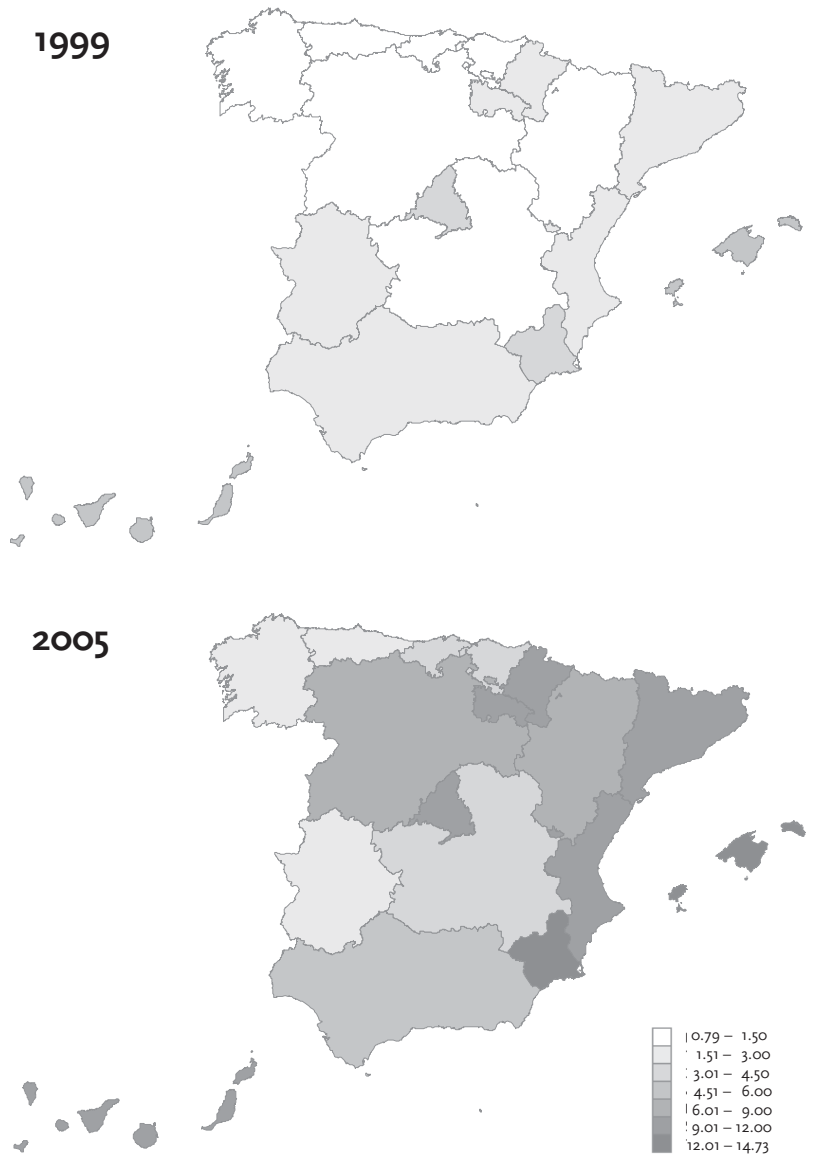
Table 6   *Foreign population registered with the Social Security department by origin (1999-2005)*

	1999	2000	2001	2002	2003	2004	2005
Number of registered foreigners							
EU	121,000	137,684	157,553	176,592	202,813	243,111	283,053
EEE non-EU	964	1,083	1,281	1,467	1,633	1,755	1,855
Rest of Europe	2,736	3,633	5,770	8,764	10,303	12,990	8,396
Africa	101,162	122,992	163,876	193,012	220,461	237,360	300,481
North America	3,978	4,153	4,644	4,934	5,093	5,352	5,847
Central and South America	61,363	80,141	141,548	250,708	319,809	367,686	569,152
Oceania	324	366	426	457	469	501	626
Stateless	168	178	200	210	212	204	220
Non-classified	2,650	2,616	2,498	2,569	2,460	2,644	1,697
Total	334,976	402,713	557,075	766,472	924,805	1,048,229	1,461,140
% of the total foreign registered population							
EU	36.12	34.19	28.28	23.04	21.93	23.19	19.37
EEE non-EU	0.29	0.27	0.23	0.19	0.18	0.17	0.13
Rest of Europe	0.82	0.90	1.04	1.14	1.11	1.24	0.57
Africa	30.20	30.54	29.42	25.18	23.84	22.64	20.56
North America	1.19	1.03	0.83	0.64	0.55	0.51	0.40
Central and South America	18.32	19.90	25.41	32.71	34.58	35.08	38.95
Oceania	0.10	0.09	0.08	0.06	0.05	0.05	0.04
Stateless	0.05	0.04	0.04	0.03	0.02	0.02	0.02
Non-classified	0.79	0.65	0.45	0.34	0.27	0.25	0.12
Total	100	100	100	100	100	100	100

Source: Boletín de Estadísticas Laborales. Ministerio de Trabajo y Asuntos Sociales (INE: Spanish Statistics Institute)

Graph 8   *Foreign population registered with the Social Security department by origin (1999-2005)*
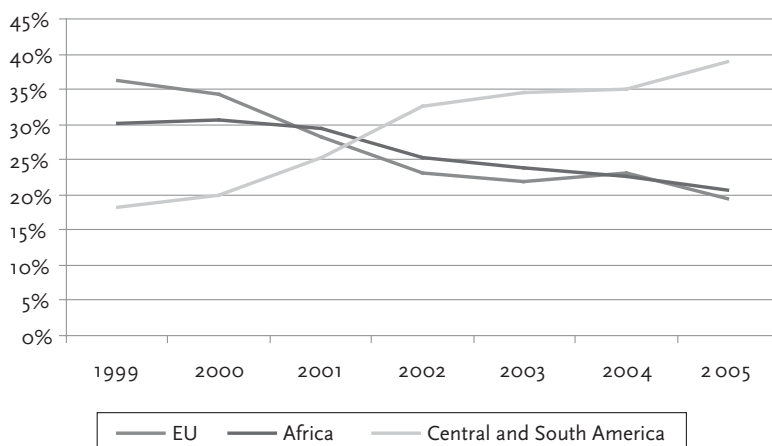
Table 7   *Foreign population registered with the Social Security department by type of work and origin (January 2007)*

	Total		Salaried		Self-employed	
	N	% (vertical)	N	% (horizontal)	N	% (horizontal)
EU	379,021	19.64	293,079	77.33	85,942	22.67
Italy	62,164	3.22	50,311	80.93	11,853	19.07
Portugal	72,494	3.76	64,880	89.50	7,614	10.50
UK	58,520	3.03	35,897	61.34	22,623	38.66
Rest of Europe	289,578	15.00	260,030	89.80	29,548	10.20
Romania	175,817	9.11	158,701	90.26	17,116	9.74
AFRICA	384,891	19.94	362,197	94.10	22,694	5.90
Morocco	273,497	14.17	257,101	94.01	16,396	5.99
Latin America	741,216	38.40	676,162	91.22	65,054	8.78
Argentina	57,804	2.99	49,953	86.42	7,851	13.58
Colombia	143,311	7.42	128,719	89.82	14,592	10.18
Ecuador	277,675	14.39	257,881	92.87	19,794	7.13
Peru	71,386	3.70	67,838	95.03	3,548	4.97
North America	6,801	0.35	4,985	73.30	1,816	26.70
Asia	123,097	6.38	98,050	79.65	25,047	20.35
China	59,143	3.06	41,474	70.12	17,669	29.88
Oceania	1,036	0.05	867	83.69	169	16.31
Unknown	4,626	0.24	3,813	82.43	813	17.57
Total	1,930,266	100	1,699,183	88.03	231,083	11.97

Source: Boletín de Estadísticas Laborales. Ministerio de Trabajo y Asuntos Sociales (INE: Spanish Statistics Institute)

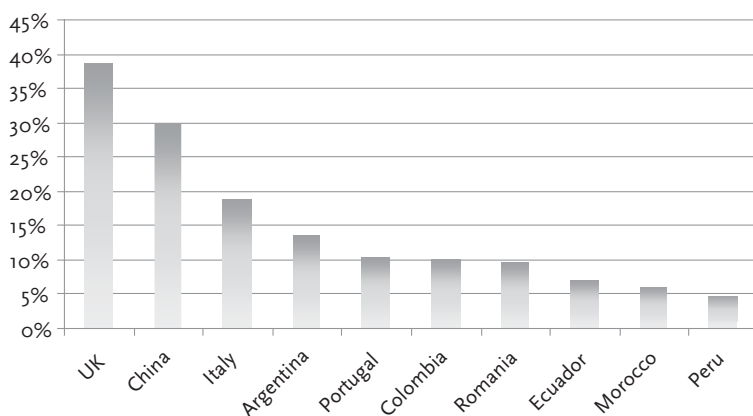**Graph 9**   *Self-employment rates of the ten largest foreign groups registered with the Social Security department (January 2007)*

countries (36.1 per cent), Africa (30.2 per cent) and Central and South America (18.3 per cent). However, between 1999 and 2005 the number of foreigners from Central and South American countries registered with the Social Security department increased by over 800 per cent, the number of Africans by 200 per cent and that of EU countries by over 100 per cent. As a result, by 2005 the largest groups of foreigners were from Central and South American countries (38.9 per cent), Africa (20.6 per cent) and the EU (19.4 per cent).

Based on Table 7, changes in the proportion of foreigners in the largest origin groups from 1999 until 2005 are illustrated in Graph 8.

The largest groups of foreigners registered with the Spanish Social Security department in January 2007 were from Ecuador (14.39 per cent) and Morocco (14.17 per cent) (see Table 7). Of the total number of registered foreigners, 12 per cent were self-employed and the remainder were salaried workers. Foreigners from North America, the EU and Asia showed the highest self-employment rates (26.7, 22.67 and 20.35 per cent, respectively).

Graph 9 illustrates the self-employment rates of the ten largest foreign groups registered with the Spanish Social Security department by country of origin in January 2007. The UK (38.66 per cent) and China (29.88 per cent) had the highest numbers of self-employed while fewer than 20 per cent of other groups of foreigners were self-employed.

An analysis of the demographic features of the foreigners registered with the Social Security department shown in Table 8 revealed that the mean age did not change between 1999 and 2006, and that the proportion of women increased from 35.4 to 39.1 per cent. The age structure for foreign women and men is very similar, with foreigners between ages 25 and 54 constituting over 80 per cent of the foreign population.

2.1.2.2   *Work permits*

In 2005 the Spanish authorities issued more than 900,000 work permits to foreigners, ten times more than they did in 1998, as shown in Table 9. Wage-employment permits increased more than ten-fold but self-employment permits only doubled. As a result, the proportion of self-employment permits out of the total number of permits decreased from 6 per cent in 1998 to 1 per cent in 2005.

The number of work permits issued by the Spanish authorities to foreigners increased for all Spanish regions between 1998 and 2005. The highest increase in the annual number of work permits occurred in Castilla La Mancha, Castilla y Leon, La Rioja, the Basque Country and Valencia, and the lowest in Extremadura, Asturias, Catalonia, Andalusia and Madrid. Both in 1999 and 2005, the largest numbers of permits were issued in Madrid, Catalonia, Andalusia, Valencia and Murcia.

Table 8 Foreign population registered with the Social Security department by age and gender (1999-2006)

	1999		2000		2001		2002		2003		2004		2005		2006	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total foreign population																
16-19	5,861	1.75	7,740	1.92	10,668	1.92	12,790	1.67	13,548	1.46	15,832	1.51	25,779	1.76	31,093	1.71
20-24	33,985	10.15	44,496	11.05	65,420	11.74	92,014	12.00	100,628	10.88	101,416	9.67	154,852	10.60	189,530	10.40
25-54	278,413	83.11	331,422	82.30	458,126	82.24	633,350	82.63	776,114	83.92	890,107	84.92	1,227,532	84.01	1,534,820	84.22
55+	16,511	4.93	18,837	4.68	22,651	4.07	27,839	3.63	34,007	3.68	40,425	3.86	52,667	3.60	66,697	3.66
Total	334,976	100	402,711	100	557,074	100	766,470	100	924,805	100	1,048,230	100	1,461,140	100	1,822,406	100
Men																
16-19	3,951	1.83	5,126	1.95	7,237	1.98	8,528	1.71	8,943	1.50	10,546	1.58	16,088	1.80	19,522	1.76
20-24	20,888	9.66	28,089	10.69	41,938	11.45	57,974	11.65	62,099	10.45	61,581	9.21	89,365	10.01	109,596	9.89
25-54	179,920	83.22	216,554	82.39	301,729	82.36	412,409	82.85	500,698	84.23	569,867	85.24	754,508	84.51	939,006	84.71
55<	11,304	5.23	12,921	4.92	15,334	4.19	18,465	3.71	22,272	3.75	26,215	3.92	32,610	3.65	40,116	3.62
Total	216,194	100	262,833	100	366,376	100	497,755	100	594,426	100	668,559	100	892,807	100	1,108,432	100
% men	64.54		65.27		65.77		64.94		64.28		63.78		61.10		60.82	
Women																
16-19	1,910	1.61	2,613	1.87	3,431	1.80	4,262	1.59	4,604	1.39	5,285	1.39	9,692	1.71	11,572	1.62
20-24	13,097	11.04	16,406	11.74	23,480	12.32	34,040	12.67	38,529	11.66	39,833	10.49	65,484	11.52	79,932	11.20
25-54	98,370	82.94	114,767	82.13	156,321	82.03	220,884	82.23	275,406	83.37	320,233	84.35	473,017	83.23	595,809	83.45
55<	5,166	4.36	5,882	4.21	7,288	3.82	9,351	3.48	11,728	3.55	14,207	3.74	20,054	3.53	26,580	3.72
Total	118,604	100	139,730	100	190,577	100	268,624	100	330,355	100	379,652	100	568,315	100	713,962	100
% women	35.41		34.70		34.21		35.05		35.72		36.22		38.90		39.18	

Source: Boletín de Estadísticas Laborales. Ministerio de Trabajo y Asuntos Sociales (INE: Spanish Statistics Institute)

Table 9 *Work permits issued to foreigners by the Spanish authorities by type of work (1998-2005)*

	1998	1999	2000	2001	2002	2003	2004	2005
	Number of permits							
Annual permits	85,526	118,538	292,120	298,676	318,613	271,776	498,280	923,012
Salaried	80,614	111,516	278,153	289,212	312,267	264,495	484,394	913,117
Self-employed	4,912	7,022	13,967	9,464	6,346	7,281	13,886	9,895
	% of the annual number of permits							
Salaried	94.26	94.08	95.22	96.83	98.01	97.32	97.21	98.93
Self-employed	6.09	6.30	5.02	3.27	2.03	2.75	2.87	1.08

Source: Anuario de Estadísticas Laborales y de Asuntos Sociales. Ministerio de Trabajo y Asuntos Sociales (INE: National Statistics Institue)

As shown in Table 10, in 1998 over 28 per cent of all permits were issued to foreigners living in Madrid, over 24 per cent in Catalonia and 12.65 per cent in Andalusia. The overall distribution of permits changed little between 1998 and 2005, although the numbers doubled, or nearly doubled, in Castilla y Leon, Castilla La Mancha and the Basque Country. Graph 10 illustrates the fact that, aside from a few minor differences, the regional distribution of work permits issued to foreigners seems similar in 1998 and 2005.

Since over 94 per cent of all permits (see Table 10) were issued to salaried foreigners over the 1998-2005 period, changes in the annual number of permits in the wage-employment labour market follow a pattern similar to that of all work permits, as shown in Table 11. Once again, Castilla La Mancha, Castilla y Leon and the Basque Country experienced some of the largest increases in the annual number of permits between 1998 and 2005. Both in 1999 and 2005, the largest numbers of permits was issued in Madrid (29.5 per cent), Catalonia (24.82 per cent) and Andalusia (12.34 per cent). Since the majority of the permits were given in the wage market, the situation depicted in Graph 11 for 1998 and 2005 is rather similar to that illustrated in Graph 10.

Finally, as shown in Table 12, the largest proportion of self-employment permits in 1998 was issued to foreigners working in Andalusia (17.83 per cent), Catalonia (17.59 per cent) and Valencia (15.49 per cent). The number of annual self-employment permits issued to foreigners by the Spanish authorities quadrupled in Madrid between 1998 and 2005, and doubled in Castilla y Leon and Navarra, while they decreased drastically in Catalonia (to 6.85 per cent).

Graph 12 illustrates the changes in self-employment permits issued to foreigners by the Spanish authorities by region in 1998 and 2005. Most noticeable is the increase in permits in the Madrid region.

Table 10 *Work permits issued to foreigners by the Spanish authorities by Spanish region (1998-2005)*

	1998	1999	2000	2001	2002	2003	2004	2005
				Number of permits				
Andalusia	10,823	14,927	35,222	33,146	29,753	18,233	58,409	96,394
Aragon	2,893	4,170	7,834	15,751	14,505	7,507	22,040	30,873
Asturias	928	1,339	2,538	2,174	2,107	2,225	4,448	6,254
Balearic Island	2,392	2,642	6,611	10,673	14,038	9,938	13,339	28,924
Canary Islands	2,513	5,066	12,263	12,673	14,629	9,802	18,722	31,154
Cantabria	469	589	1,802	2,557	2,445	2,721	7,406	5,488
Castilla La Mancha	1,894	3,252	6,286	10,750	8,773	9,504	26,094	42,811
Castilla y Leon	1,472	2,540	6,262	10,172	12,468	10,461	25,217	30,662
Catalonia	20,874	30,414	69,714	92,838	82,483	53,764	140,159	178,290
Valencia	6,513	6,365	22,408	37,973	42,567	25,080	41,880	112,144
Extremadura	1,669	2,447	4,331	2,323	1,877	1,493	2,773	3,945
Galicia	1,201	1,634	3,519	3,243	3,687	4,238	9,190	12,315
Madrid	24,241	27,898	87,229	37,223	54,479	92,181	67,644	247,715
Murcia	3,994	9,229	15,332	17,360	21,421	8,180	39,530	50,192
Navarra	1,311	2,242	3,887	2,560	3,243	6,836	6,945	15,157
Basque Country	**1,065**	**1,710**	**3,432**	**4,481**	**5,771**	**5,556**	**8,666**	**19,536**
La Rioja	444	723	2,066	1,855	2,488	2,414	3,987	8,356
Ceuta	103	401	387	207	425	416	947	826
Melilla	695	851	975	717	1,454	1,227	884	1,976
Spain	**85,526**	**118,538**	**292,120**	**298,676**	**318,613**	**271,776**	**498,280**	**923,012**
			% of the total number of permits					
Andalusia	12.65	12.59	12.06	11.10	9.34	6.71	11.72	10.44
Aragon	3.38	3.52	2.68	5.27	4.55	2.76	4.42	3.34
Asturias	1.09	1.13	0.87	0.73	0.66	0.82	0.89	0.68
Balearic Island	2.80	2.23	2.26	3.57	4.41	3.66	2.68	3.13
Canary Islands	2.94	4.27	4.20	4.24	4.59	3.61	3.76	3.38
Cantabria	0.55	0.50	0.62	0.86	0.77	1.00	1.49	0.59
Castilla y Leon	2.21	2.74	2.15	3.60	2.75	3.50	5.24	4.64
Castilla La Mancha	1.72	2.14	2.14	3.41	3.91	3.85	5.06	3.32
Catalonia	24.41	25.66	23.86	31.08	25.89	19.78	28.13	19.32
Valencia	7.62	5.37	7.67	12.71	13.36	9.23	8.40	12.15
Extremadura	1.95	2.06	1.48	0.78	0.59	0.55	0.56	0.43
Galicia	1.40	1.38	1.20	1.09	1.16	1.56	1.84	1.33
Madrid	28.34	23.54	29.86	12.46	17.10	33.92	13.58	26.84
Murcia	4.67	7.79	5.25	5.81	6.72	3.01	7.93	5.44
Navarra	1.53	1.89	1.33	0.86	1.02	2.52	1.39	1.64
Basque Country	**1.25**	**1.44**	**1.17**	**1.50**	**1.81**	**2.04**	**1.74**	**2.12**
La Rioja	0.52	0.61	0.71	0.62	0.78	0.89	0.80	0.91
Ceuta	0.12	0.34	0.13	0.07	0.13	0.15	0.19	0.09
Melilla	0.81	0.72	0.33	0.24	0.46	0.45	0.18	0.21
Spain	100	100	100	100	100	100	100	100

Source: Anuario de Estadísticas Laborales y de Asuntos Sociales. Ministerio de Trabajo y Asuntos Sociales (INE: National Statistics Institue)

Graph 10 *Work permits issued to foreigners by region out of the total work permits issued to foreigners in Spain (%)*
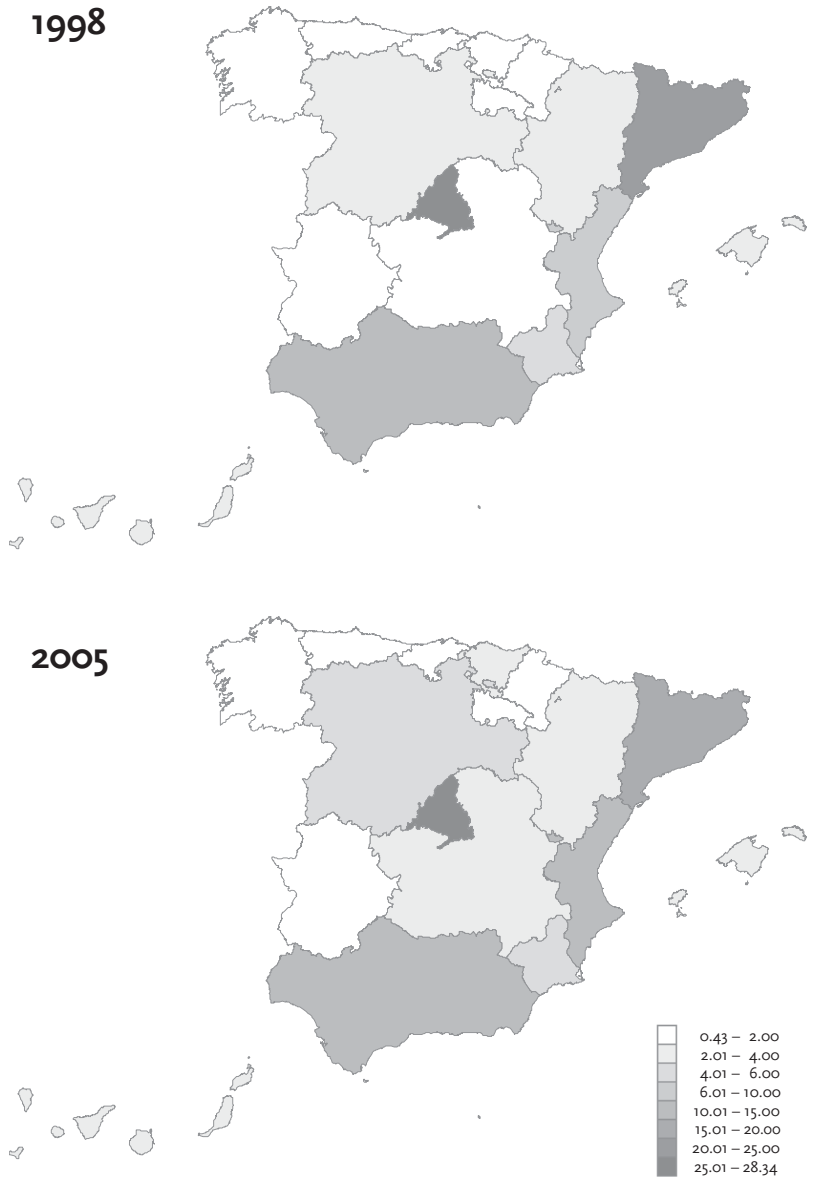
1998

2005

	0.43 – 2.00
	2.01 – 4.00
	4.01 – 6.00
	6.01 – 10.00
	10.01 – 15.00
	15.01 – 20.00
	20.01 – 25.00
	25.01 – 28.34

Table 11   *Wage-employment permits issued to foreigners by the Spanish authorities by Spanish region (1998-2005)*

	1998	1999	2000	2001	2002	2003	2004	2005
Number of permits								
Andalusia	9,947	13,632	32,527	31,316	28,789	16,610	55,700	95,484
Aragon	2,723	3,936	7,585	15,453	14,150	7,192	20,849	30,251
Asturias	852	1,238	2,397	2,133	2,092	2,179	4,361	6,168
Balearic Island	2,131	2,487	6,192	10,306	13,647	9,454	12,875	28,674
Canary Islands	2,139	4,440	11,536	11,862	14,062	9,361	18,037	30,651
Cantabria	388	473	1,519	2,401	2,377	2,626	7,175	5,353
Castilla y Leon	1,807	3,093	6,101	10,615	8,672	9,254	25,573	42,403
Castilla La Mancha	1,311	2,298	5,949	9,963	12,264	10,054	24,578	30,130
Catalonia	20,010	28,722	68,164	90,991	81,500	52,794	137,985	177,612
Valencia	5,752	5,862	20,762	36,941	42,065	24,525	40,252	111,124
Extremadura	1,595	2,330	4,049	1,816	1,711	1,419	2,611	3,892
Galicia	929	1,243	2,759	2,673	3,454	3,856	8,473	11,973
Madrid	23,784	27,139	83,191	35,938	53,036	90,891	66,168	244,424
Murcia	3,843	9,028	15,174	17,237	21,245	8,131	39,119	49,990
Navarra	1,229	2,104	3,790	2,483	3,210	6,768	6,603	14,781
Basque Country	**973**	**1,550**	**3,187**	**4,358**	**5,668**	**5,401**	**8,408**	**19,291**
La Rioja	423	706	2,040	1,834	2,466	2,375	3,895	8,238
Ceuta	102	386	365	204	416	408	907	805
Melilla	663	812	849	688	1,443	1,197	825	1,873
Spain	**80,614**	**111,516**	**278,153**	**289,212**	**312,267**	**264,495**	**484,394**	**913,117**
% of the total number of wage-employment permits								
Andalusia	12.34	12.22	11.69	10.83	9.22	6.28	11.50	10.46
Aragon	3.38	3.53	2.73	5.34	4.53	2.72	4.30	3.31
Asturias	1.06	1.11	0.86	0.74	0.67	0.82	0.90	0.68
Balearic Island	2.64	2.23	2.23	3.56	4.37	3.57	2.66	3.14
Canary Islands	2.65	3.98	4.15	4.10	4.50	3.54	3.72	3.36
Cantabria	0.48	0.42	0.55	0.83	0.76	0.99	1.48	0.59
Castilla y Leon	2.24	2.77	2.19	3.67	2.78	3.50	5.28	4.64
Castilla La Mancha	1.63	2.06	2.14	3.44	3.93	3.80	5.07	3.30
Catalonia	24.82	25.76	24.51	31.46	26.10	19.96	28.49	19.45
Valencia	7.14	5.26	7.46	12.77	13.47	9.27	8.31	12.17
Extremadura	1.98	2.09	1.46	0.63	0.55	0.54	0.54	0.43
Galicia	1.15	1.11	0.99	0.92	1.11	1.46	1.75	1.31
Madrid	29.50	24.34	29.91	12.43	16.98	34.36	13.66	26.77
Murcia	4.77	8.10	5.46	5.96	6.80	3.07	8.08	5.47
Navarra	1.52	1.89	1.36	0.86	1.03	2.56	1.36	1.62
Basque Country	**1.21**	**1.39**	**1.15**	**1.51**	**1.82**	**2.04**	**1.74**	**2.11**
La Rioja	0.52	0.63	0.73	0.63	0.79	0.90	0.80	0.90
Ceuta	0.13	0.35	0.13	0.07	0.13	0.15	0.19	0.09
Melilla	0.82	0.73	0.31	0.24	0.46	0.45	0.17	0.21
Spain	100	100	100	100	100	100	100	100

Source: Anuario de Estadísticas Laborales y de Asuntos Sociales. Ministerio de Trabajo y Asuntos Sociales (INE: National Statistics Institute)

Graph 11 *Wage-employment permits issued to foreigners by regions out of the total wage-employment permits issued to foreigners in Spain (%)*
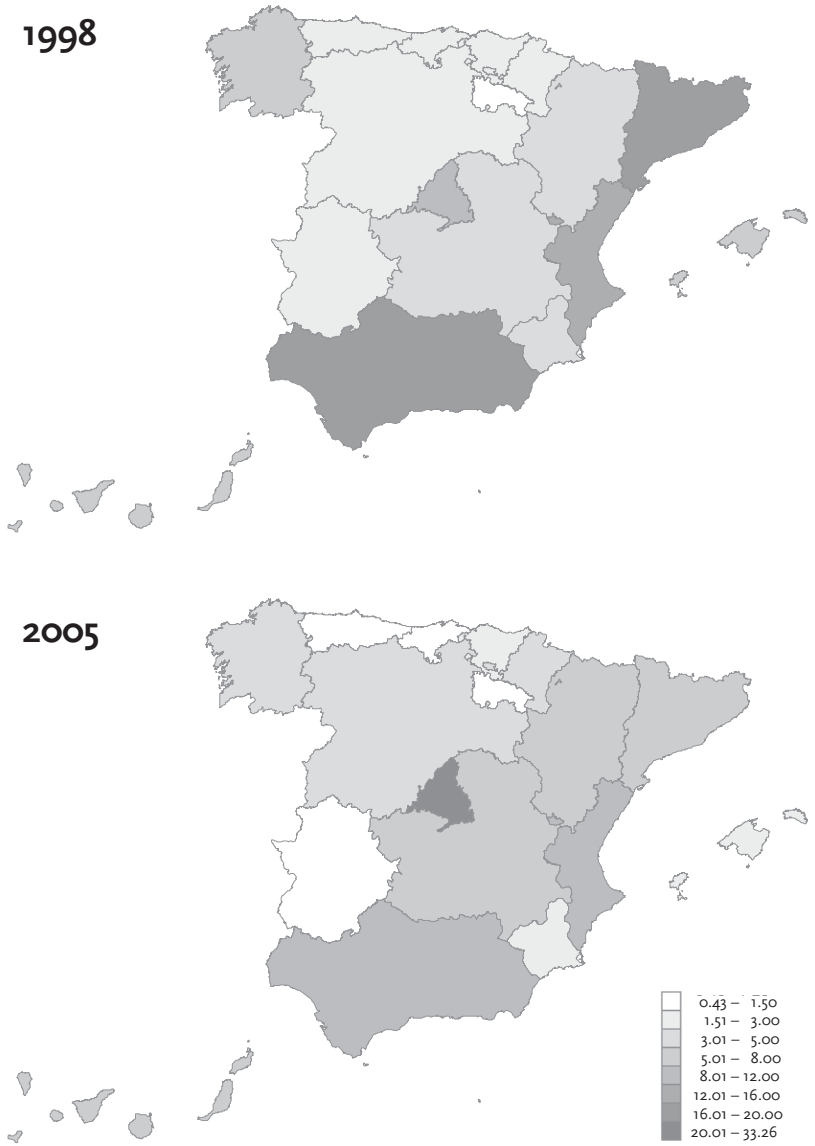
1998

2005

	0.43 – 2.00
	2.01 – 3.00
	3.01 – 4.00
	4.01 – 5.00
	5.01 – 10.00
	10.01 – 15.00
	15.01 – 20.00
	20.01 – 29.34

Table 12 *Self-employment work permits issued to foreigners by the Spanish authorities by Spanish region (1998-2005)*

	1998	1999	2000	2001	2002	2003	2004	2005
				Number of permits				
Andalusia	876	1,295	2,695	1,830	964	1,623	2,709	910
Aragon	170	234	249	298	355	315	1,191	622
Asturias	76	101	141	41	15	46	87	86
Balearic Island	261	155	419	367	391	484	464	250
Canary Islands	374	626	727	811	567	441	685	503
Cantabria	81	116	283	156	68	95	231	135
Castilla y Leon	87	159	185	135	101	250	521	408
Castilla La Mancha	161	242	313	209	204	407	639	532
Catalonia	864	1,692	1,550	1,847	983	970	2,174	678
Valencia	761	503	1,646	1,032	502	555	1,628	1,020
Extremadura	74	117	282	507	166	74	162	53
Galicia	272	391	760	570	233	382	717	342
Madrid	457	759	4,038	1,285	1,443	1,290	1,476	3,291
Murcia	151	201	158	123	176	49	411	202
Navarra	82	138	97	77	33	68	342	376
Basque Country	**92**	**160**	**245**	**123**	**103**	**155**	**258**	**245**
La Rioja	21	17	26	21	22	39	92	118
Ceuta	1	15	22	3	9	8	40	21
Melilla	32	39	126	29	11	30	59	103
Spain	**4,912**	**7,022**	**13,967**	**9,464**	**6,346**	**7,281**	**13,886**	**9,895**
			% of the total number of self-employment permits					
Andalusia	17.83	18.44	19.30	19.34	15.19	22.29	19.51	9.20
Aragon	3.46	3.33	1.78	3.15	5.59	4.33	8.58	6.29
Asturias	1.55	1.44	1.01	0.43	0.24	0.63	0.63	0.87
Balearic Island	5.31	2.21	3.00	3.88	6.16	6.65	3.34	2.53
Canary Islands	7.61	8.91	5.21	8.57	8.93	6.06	4.93	5.08
Cantabria	1.65	1.65	2.03	1.65	1.07	1.30	1.66	1.36
Castilla y Leon	1.77	2.26	1.32	1.43	1.59	3.43	3.75	4.12
Castilla La Mancha	3.28	3.45	2.24	2.21	3.21	5.59	4.60	5.38
Catalonia	17.59	24.10	11.10	19.52	15.49	13.32	15.66	6.85
Valencia	15.49	7.16	11.78	10.90	7.91	7.62	11.72	10.31
Extremadura	1.51	1.67	2.02	5.36	2.62	1.02	1.17	0.54
Galicia	5.54	5.57	5.44	6.02	3.67	5.25	5.16	3.46
Madrid	9.30	10.81	28.91	13.58	22.74	17.72	10.63	33.26
Murcia	3.07	2.86	1.13	1.30	2.77	0.67	2.96	2.04
Navarra	1.67	1.97	0.69	0.81	0.52	0.93	2.46	3.80
Basque Country	**1.87**	**2.28**	**1.75**	**1.30**	**1.62**	**2.13**	**1.86**	**2.48**
La Rioja	0.43	0.24	0.19	0.22	0.35	0.54	0.66	1.19
Ceuta	0.02	0.21	0.16	0.03	0.14	0.11	0.29	0.21
Melilla	0.65	0.56	0.90	0.31	0.17	0.41	0.42	1.04
Spain	100	100	100	100	100	100	100	100

Source: Anuario de Estadísticas Laborales y de Asuntos Sociales. Ministerio de Trabajo y Asuntos Sociales (INE: National Statistics Institute)

Graph 12 *Self-employment permits issued to foreigners by regions out of the total self-employment permits issued to foreigners in Spain (%)*

1998

2005

| 0.43 – 1.50 |
| 1.51 – 3.00 |
| 3.01 – 5.00 |
| 5.01 – 8.00 |
| 8.01 – 12.00 |
| 12.01 – 16.00 |
| 16.01 – 20.00 |
| 20.01 – 33.26 |

Madrid and the Mediterranean basin (i.e. Catalonia, Valencia, Murcia and Andalusia) show the highest proportion of foreigners who have been issued with both wage- and self-employment permits. Nevertheless, the regional distribution of these permits differs in the following manner: wage-employment permits were more equally distributed among all regions than self-employment permits, which were more concentrated in Madrid. As a result, despite an increase in self-employment permits issued to foreigners between 1998 and 2005, fewer of these permits were issued in proportion to the total number of permits issued to foreigners in Spain.

2.2   Immigration policies in Spain

The rights and responsibilities of foreigners in Spain are regulated by the Organic Law 8/2000, a spin-off of the Organic Law 4/2000. I next summarise the regulations governing residence and work permits within this legal framework.

2.2.1   Residence permits

Article 31 of the Organic Law 8/2000 stipulates that foreigners can obtain a temporary residence permit, valid for 90 days to five years, in one of three ways: (1) by proving that they can earn a living and do not need to work, (2) by holding a valid wage- or self-employment permit or (3) by qualifying for family reunification programmes.

In addition, the Spanish authorities can issue temporary residence permits to foreigners who once had such permits but let them lapse, and to those who can prove that they have been living in Spain for a minimum of five years. Finally, humanitarian reasons and exceptional circumstances can also be taken into account when issuing temporary residence permits.

As a general rule, foreigners who have had a continuous temporary permit for five years qualify for a permanent residence permit (article 32).

When large numbers of *illegal* foreigners live in Spain, the government adopts extraordinary measures whereby residence permits are granted pending proof of residency in Spain for a certain time period. Amnesties were granted in 1986, 1991, 1996, 2000 (twice) and 2005. Of the 691,000 requests processed during the last amnesty, between February and May 2005, 572,000 were granted.

2.2.2 Work permits

According to article 36 of the same law, foreigners who want to gain access to the Spanish labour market must: (i) be 16 years old or older, (2) hold residence and work permits and (3) hold an officially recognised degree, where required by professional bodies.

The national employment situation is taken into account when foreigners apply for a work permit as salaried workers for the first time. In other words, foreigners can be employed when no other worker in Spain, either Spanish or a foreigner with a work permit, is available and qualified to do the work. This initial work permit is valid for a maximum of five years and limits the applicant to a particular geographical area and a specific industry sector. The permit can be renewed under the conditions listed in article 38 of the Organic Law 8/2000.

Moreover, the Spanish government forecasts an annual quota of jobs not likely to be filled by the Spanish population and opens up positions, not to foreigners already in Spain, but to outsiders. The government decides on the number and the descriptions of available jobs. The annual quota represents less than 30 per cent of the work permits issued annually (Villena 2004).

The national employment situation is not taken into account in the following three cases: (1) foreigners who come from countries exempted from the work permit requirement via international agreements, (2) foreigners who live in Spain legally and (3) foreigners who do not require visas (article 39).

Finally, the law does not specify requirements for those foreigners who wish to start up a business. Article 37 states that (i) foreigners must fulfill the same requirements as the Spanish-born for starting up and running a business; and (ii) they must prove that they have applied for the appropriate work permits. There are three types of self-employment work permits for foreigners who wish to run a business in Spain: (1) the initial 'D' work permit allows foreigners to run a business either in a particular sector of activity or in a certain geographical area and it is valid for one year; (2) the renewed 'D' work permit is issued to foreigners who wish to prolong their entrepreneurial activity. This permit is valid for two years and firms can be located anywhere in Spain; (3) the 'E' work permit is made available to foreigners who wish to prolong their entrepreneurial activity after the 'renewed 'D' permit under the same conditions as for the 'renewed 'D' permit.

Part II: Theoretical discussion

3 Literature review

Over the last decades the proliferation of entrepreneurial activities of immigrants in European countries has been driven by increasing immigration from economically less developed countries. The emergence and growing presence of immigrants' businesses and the so-called *ethnic economies* in Canada, the UK and the US and, more recently, in other Western European countries (i.e. France, Germany, the Netherlands), have led to important advances in the research on ethnic and immigrant entrepreneurship (Light 1972, 1979, 1990, 1993; Bonacich 1973, 1987; Portes 1986, 1989, 1990; Aldrich and Waldinger 1990; Waldinger et al. 1990; Bates 1997; Rath 2000, 2002; Rath and Kloosterman 2000; Constant and Zimmermann 2004; Zimmermann et al. 2003, 2006). Nevertheless, the entrepreneurial activity of immigrants has not been sufficiently explored in countries where increased immigration is a more recent phenomena, including Mediterranean countries such as Spain. Moreover, whereas the propensity of immigrants for self-employment has been analysed, little is known about the ongoing development of these initiatives.

This dissertation aims to fill these gaps in the literature by analysing the entrepreneurial activity of immigrants in Spain both before and after start-up. While the first part of the literature review analyses the propensity of immigrants to engage in entrepreneurial activities in Spain, the second and third parts focus on the performance of immigrants' businesses. More specifically, in the second part I present an overview of the factors associated with firm survival, whereas in the third one I discuss the economic benefits immigrants' may obtain from self-employment. The theoretical part ends with a review of the concepts ethnic and immigrant entrepreneurship.

I draw on human capital, social cognition and spatial economic theories as well as on studies on immigrant entrepreneurship to overview the literature on the determinants of self-employment, firm-survival and the economic benefits of self-employment for immigrants.

3.1   Determinants of immigrants' self-employment

To date, most studies on immigrant entrepreneurship have explained the existence of inter-group differences in entrepreneurial activity by cultural characteristics and the access to the host society's bundle of opportunities available to each immigrant group (Light 1972; Aldrich and Waldinger 1990; Butler and Herring 1991; Clark and Drinkwater 1998; Hammarstedt 2001; Constant et al. 2003; Levie 2007). In the majority of these studies it is implied that individuals who belong to a particular *ethnic* group constitute a homogeneous entity. Thus, the internal heterogeneity perhaps present among individuals of the same group, such as the differences derived from human capital endowments, are not taken into account. With a few exceptions (Bearse 1982; Bates 1997; Constant and Zimmerman 2004; Levie 2007), the influence of individual attributes on their decision to start a firm has not been empirically tested. In a previous empirical study carried out in Spain, I found that immigrant individuals are more likely to intend to create a firm than native individuals (Irastorza and Peña 2007). Nevertheless, I acknowledge that an individual may show intent to create a new venture, but not succeed in the actual realisation of the venture – and this may happen for different reasons. For instance, the potential entrepreneur may give up on her original idea due to the emergence of new opportunities (i.e. more attractive employment opportunities) during the course of planning the firm start-up phase. Or alternatively, the potential entrepreneur may find obstacles, rather than opportunities, during this ex-ante period, which deter the entrepreneur from starting a new business (i.e. obstacles associated with the difficulties in raising funds, complex paperwork requirements, late recognition of an insufficient ability to start-up and run a new firm, etc.). This second type of deterrents seems to be more widespread in the immigrant community, since they often face additional obstacles associated with the *liability of foreignness* (Irastorza and Peña 2006).

  This dissertation aims at extending that previous empirical study on potential immigrant entrepreneurs in two ways: first, by testing whether immigrants are relatively more prone than native individuals to start up firms and, second, by comparing factors linked to potential and actual entrepreneurial activities for immigrants and native individuals. In particular, I pose the following research questions:

(1) Does the origin of an individual (i.e. immigrant versus native) affect the likelihood of being a *potential entrepreneur*? And similarly, does the origin of an individual (i.e. immigrant versus native) affect the likelihood of being an *actual entrepreneur*?
(2) Are there differences in the *intent* and the *actual switch* to become entrepreneurs among immigrants by place of origin?

(3) Does the intra-regional context of the host economy affect the *intent* or the *actual switch* of individuals to become entrepreneurs?

(4) Do the determinants for immigrants' self-employment differ from those of native individuals?

The theoretical framework of the first part of the literature review is based upon the works by Bearse (1982) and Wagner and Sternberg (2004) who differentiate between two major sets of determinants: individual- and context-related factors. On the one hand, I consider human capital endowment, socio-demographic characteristics and perceptual variables as individual-related factors to explain both the intent to become and the act of becoming an entrepreneur. On the other hand, context-related factors include individuals' culture of origin as well as environmental factors of the host society.

3.1.1   Individual-related factors

Conventional wisdom suggests that human capital factors such as age, education, work experience and business skills play a role in the decision to start a firm. Mature individuals as well as those with entrepreneurial experience are more likely to create a new firm (Butler and Herring 1991; Bates 1997; Mata and Pendakur 1999; Arenius and Minniti 2005; Levie 2007). I expect that mature people accumulate human capital and, eventually, personal savings to start their own business. The longer the period of time spent by an immigrant in the host economy, the higher the probability of becoming familiar with the local system and economy. However, the empirical evidence is not conclusive on this regard. While some studies confirm a positive relationship between the number of years spent in the host country and the probability to start up a firm (Razin 1999; Hammarstedt 2001, 2004; Schuetze 2005), other authors conclude the opposite (Hjerm 2004), or do not find a significant effect (Bauder 2005). A consensus has not yet been reached about the effect of education on the propensity to self-employment. Some studies find that highly educated people are more likely to create firms (Evans 1989; Razin 1999; Bates 1997) whereas others show the opposite (Mata and Pendakur 1999; Hammarstedt 2001, 2004).

   Bates (1997) examined firm creation rates in various industry sectors and concluded that, while individuals with advanced education were more likely to start up firms demanding a highly skilled labour force in the service sector, individuals with low education levels were more likely to create a firm in the construction sector. People who take the risk to migrate often have an above-average level of education in their own countries. Moreover, immigrants need to develop additional skills to

create and run successfully a new business in a foreign country. I sum-
marise the findings of the literature in the following proposition:

> *Proposition 1: Individuals with more diverse and richer human capital endowment*
> *are more likely to start up new firms.*

The country of origin, gender and personal income are socio-
demographic characteristics that may affect the decision to start a firm.
Although results are not conclusive in this respect, empirical evidence
shows that men are more likely to create companies than women
(Butler and Herring 1991; Bates 1995; Verheul et al. 2006; Levie 2007).
Kofman et al. (2005) argue that, since unemployment levels are higher
for immigrant women than for men and this is also true for native wo-
men in most economies, they resort to entrepreneurship as a means to
earn money. Nonetheless, immigrant women often remain in suppor-
tive roles in small businesses, rather than own them. Thus, considering
today's social pattern, I expect that men will be more likely to create
new firms than women, particularly in the immigrant community.

Interestingly, studies on immigrant entrepreneurship suggest that
immigrants are relatively more likely to become self-employed than na-
tive individuals (Hammarstedt 2001; Schuetze 2005; Levie 2007). Risk-
taking behaviour is one of the most salient characteristics of entrepre-
neurs. Immigrants not only bear risk in leaving their home country, but
they also try to make a living by starting up a new firm in an unknown
host economy. Zimmermann et al. (2003) argue that the option to be-
come an entrepreneur might be linked to the decision to migrate from
their home countries. In both cases, individuals seek self-realisation fa-
cing an uncertain future, and bear risk by giving up their status in their
country of origin.

From another point of view, the *disadvantage hypothesis* (Light 1972;
1979) holds that immigrants choose self-employment as an alternative
to unemployment and non-satisfactory job conditions. In other words,
entrepreneurial activity becomes an avenue for the socioeconomic ad-
vancement of the disadvantaged (Constant et al. 2003; Constant and
Zimmermann 2004; Bauder 2005). Thus, I assume that a reasonable
amount of individuals who belong to low-income segments of the popu-
lation and have no easy access to the labour market will find self-
employment as a logical alternative for their subsistence (*necessity-driven*
entrepreneurs). Most economies show a larger size of this segment
among the immigrant population than among the native population.
Therefore, it would not be surprising to expect a relatively higher intent
level, and also realisation of self-employment among immigrants than
among native individuals. This leads me to postulate the following:

> *Proposition 2: Immigrants are more likely to become entrepreneurs than native individuals.*

Entrepreneurial cognitions are mental processes through which individuals evaluate the decision to start a firm (Mitchell et al. 2002b). Arenius and Minniti (2005) found that decision-making processes of nascent entrepreneurs are based on subjective perceptions rather than on objective expectations of success. Therefore, it is pertinent to include perceptual variables in my conceptual framework.

Entrepreneurial cognitions involve the evaluation of self-efficiency, risk perception as well as opportunity recognition. Empirical studies show that risk tolerance leads to a higher preference for self-employment, whereas fear of failure is found to have the opposite effect (Lee, Wong and Ho 2005; Arenius and Minniti 2005; Verheul et al. 2006; Levie 2007). A high self-perception of entrepreneurial abilities and skills has a positive effect on firm creation (Mitchell et al. 2000; Lee, Wong and Ho 2005; Arenius and Minniti 2005; Levie 2007). Social cognition theory holds that human behaviour, cognition and the environment influence one another (Wood and Bandura 1989). A significant change in contextual factors is expected to have a corresponding shift in individuals' cognition and behaviour (Corbett and Neck 2007). Accordingly, Levie (2007) holds that the perception of good entrepreneurial opportunities in the local economy positively affects the choice to start up a firm. I summarise these findings as follows:

> *Proposition 3: Individuals' positive perception of self-efficiency, risk tolerance and opportunities available in the local economy increase the likelihood of firm creation.*

3.1.2   Context-related factors

Cultural factors pertaining to immigrants' country of origin and environmental factors in the host country may contribute to the motivation and the decision to create a company. According to the social cognition theory, individuals learn from the environment in which they develop their knowledge and skills by interacting with others in that context (Wood and Bandura 1989). The entrepreneurial attitude and behaviour embedded in the environment should thus influence the desire and propensity of immigrants for firm creation. Studies show that cross-country idiosyncrasies affect entrepreneurial cognition and the propensity for venture creation (Busenitz and Lau 1996; Mitchell et al. 2000; Mitchell et al. 2002a; Uhlaner and Thurik 2003).

I should note that immigrants bring their own *cultural backpack* to their host country; this may influence their attitude towards entrepreneurship, particularly if the latter is highly valued in the home country. As mentioned earlier, most of the ethnic and immigrant entrepreneurship literature has focused on explaining inter-group differences in self-employment. The region of origin of immigrants, the ethnic group, self-employment tradition and religion are relevant factors found in the literature which help in explaining the propensity for firm creation of immigrant groups (Light 1972; Aldrich and Waldinger 1990; Butler and Herring 1991; Clark and Drinkwater 1998; Hammarstedt 2001; Constant et al. 2003; Levie 2007). Based on previous studies, I posit the following proposition:

> *Proposition 4: A country's established entrepreneurial culture affects the likelihood of its nationals to become entrepreneurs.*

Environmental factors of the host region may also boost or hinder venture creation. Spatial economics deals with the distribution and causes of geographic location of economic activities. Agglomeration economies, socio-demographic factors, macroeconomic conditions and the political climate may influence the decision to start up firms in a particular location. A favourable habitat that nurtures young ventures is expected to attract immigrant entrepreneurs.

Entrepreneurs often prefer to start up their firms in metropolitan areas due to the agglomeration economies arising in a concentrated location (Fotopoulos and Spence 2000; Morales and Peña 2003; Wagner and Sternberg 2004; Van Stel et al. 2006). Favourable socio-demographic factors, such as high population density and immigration, increase the demand for goods and services; in turn, these factors are expected to increase the probability of venture creation (Reynolds et al. 1995a; Rekers and Van Kempen 2000; Razin 1999; Belso Martínez 2004). The effect of the unemployment rate of the host economy on firm creation is not clear. While some studies suggest that a high unemployment rate is favourable to business start-ups (Clark and Drinkwater 1998; Wagner and Sternberg 2004), others show the opposite (Reynolds et al. 1995a). Reynolds et al. (1995a) explains that a high unemployment rate contributes to diminishing demand and potential entrepreneurs are therefore discouraged to create new firms. Based on the disadvantage hypothesis (1972), which claims that immigrants are more likely to start up businesses because they do not have as good choices in the labour market, I posit that high unemployment rates increase the likelihood of seeking self-employment. In sum, I believe that both immigrant and native individuals are affected by environmental

factors at the moment of making a decision on firm start-up. The findings of previous studies can be summarised in the following proposition:

> *Proposition 5: Environmental factors (both economic and socio-demographic ones) have an influence on an individual's propensity to become entrepreneurs.*

In sum, the increase in migration and the emergence of a transnational economy have lead to an increase in immigrant business activity. As a result, the entrepreneurial activity of immigrants is gaining the attention of an increasing number of scholars. Recent findings show that immigrants are more prone to become entrepreneurs than native people (Hammarstedt 2001; Schuetze 2005; Levie 2007). The greater entrepreneurial propensity of immigrants has been explained from different perspectives. On the one hand, the immigrants' decision to create firms has been linked to their decision to migrate. In both cases, individuals seek self-realisation while they face an uncertain future, and they take risks by giving up their status in their country of origin or by starting up a firm. Thus, immigrants as risk takers are expected to be more prone to entrepreneurship than natives (Constant et al. 2003). On the other hand, the disadvantage hypothesis states that entrepreneurship emerges as an alternative to unemployment and a mechanism to overcome difficult labour market barriers for many foreigners (Light 1979). Furthermore, it has been argued that entrepreneurial activities become an avenue for the socio-economic advancement of the disadvantaged (Constant et al. 2003; Bauder 2005).

Whereas the immigrants' likelihood of self-employment has been widely studied, there are very few studies on the performance of ventures created by them. The next two sections of the literature review analyse the success of immigrant entrepreneurs by focusing on the survival of initiatives created by them (in comparison to that of natives) as well as the income obtained by entrepreneur versus salaried immigrants.

3.2 Determinants of immigrants' firm survival

Since the early 1980s, the destination of immigration in Europe has changed from central and northern countries to the Mediterranean basin. As a result, the immigration rates to southern European countries have increased substantially. In Spain, the percentage of documented foreigners as a percent of the total population has grown from 1.8 per cent in 1998 to 10 per cent in 2008. Economic integration is one of the

main objectives of immigrants to Europe. Due to high unemployment rates, it is difficult to find a satisfactory job in Europe. The difficulties experienced by foreigners looking for employment are magnified since they have to deal with an additional *liability of foreignness*. Within this context, entrepreneurship emerges as an alternative to unemployment and a mechanism to overcome difficult labour market barriers for many foreigners.

The literature on ethnic and immigrant entrepreneurship has focused on examining the reasons that motivate foreign entrepreneurs to start up firms (Levie 2005; Schuetze 2005; Basu and Altinay 2002; Bates 1997; Ward and Jenkins 1984). However, little is known about what happens once a new venture is started-up by an immigrant. With a few exceptions (Constant and Zimmermann 2004; Zimmermann et al. 2006, 2003; Hammarstedt 2001), scholars have not paid much attention to the study of venture performance by foreign entrepreneurs. As far as I know, only one author (Fertala 2004) has examined the survival of foreign-owned firms. She concludes that native-owned firms survive longer than foreign-owned but she could not find the reasons behind this gap.

This dissertation aims to fill this gap in the literature by an analysis of the survival of foreign- and native-owned ventures, possible differences and their determinants in the northern Spanish region of the Basque Country. I selected this geographical area for two reasons: (i) the higher percentage of foreigners registered as self-employed with the department of Social Security (10.8 versus 9 per cent for Spain in January 2007) even though the foreign population has traditionally been much smaller than that of Spain (4.6 per cent compared to Spain's 9.9 per cent in January 2007); and (ii) the availability of data.

In sum, the purpose of this study is to analyse venture survival of foreign and native entrepreneurs. Due to data limitations, I selected a sample involving all the firms created in the Basque Country between years 1993 and 2003 under the legal form of sole proprietor firms, i.e. companies started by one entrepreneur.

More precisely, I attempt to answer the following central questions related to the likelihood of survival of firms operating in the Basque Country:

(5) Are ventures created by foreign entrepreneurs more or less likely to survive than those started by native entrepreneurs?

(6) Are the determinants of business survival of native entrepreneurs similar to those attributed to foreign entrepreneurs?

(7) If there is a gap in survival between native-owned versus foreign-owned firms, how can it be explained? Is the any liability of foreignness embedded in the entrepreneurial process of immigrant entrepreneurs?

In order to answer these questions, firms' internal characteristics – human capital and individual attributes of entrepreneurs and firm resources and strategies – as well as environmental factors – such as industry specific characteristics, firm location and macroeconomic conditions – are analysed in the second part of the literature review. The literature on immigrant entrepreneurship includes very few studies on firm survival. Hence, I have to appeal to the general entrepreneurship literature in order to build a conceptual framework, construct a model and derive my hypotheses.

This section of the literature review is divided into two parts. The first part features an examination of the effect of entrepreneurs' origin (foreign versus native) on business survival as a background to my research questions 5 and 6. The second part deals with the literature on determinants of business survival that I will relate to my research question 7.

3.2.1 The liability of foreignness on venture survival

Few studies have analysed venture success of foreign entrepreneurs. Fertala (2004) reports that the immigrant status is negatively associated with venture survival. She analyses to what extent the initial investment in both human capital (as measured by age) and social capital (understood as networking ability) of entrepreneurs contribute to the performance of immigrant versus native entrepreneurs in Upper Bavaria. She concludes that differences in venture survival between immigrant and native entrepreneurs cannot be explained solely by differences in human capital attributes as measured by age nor by human and social capital investments, but does not suggest other possible determinants.

An alternative explanation to firm survival differences between native and immigrant entrepreneurs could be the *liability of foreignness*. Stinchcombe (1965) coined the concept of *liability of newness* in order to explain the vulnerability of organisations in the start-up stage characterised by small size and limited financial as well as human capital resources. I argue that this liability of newness could be applied to both entrepreneurs and wage workers, and that it is magnified in the case of immigrants who also have to face what I call the *liability of foreignness*, i.e. additional barriers such as poor language skills, the lack of labour experience and human capital attributes required in the host country, and discrimination.

It has been argued that the composition of immigrant entrepreneurs from less-developed countries, in terms of their human, financial, social and cultural capital, is different from that of the native population and that this is the main reason why they mainly enter industries that usually require small outlays of capital and low levels of education (Kloosterman and Rath 2001). Solé and Parella (2005) define the

additional obstacles faced by immigrant entrepreneurs as they start businesses in Catalonia as follows: initial financial difficulties due to a shortage of savings and limited access to formal credit institutions, difficulties in obtaining a work permit, the suspiciousness of native people towards firms created by immigrants and the abusive prize of premises they are asked to paid in comparison to natives.

Thus, based on the immigrant entrepreneurship literature, I state the following proposition:

Proposition 6: Firms started by native entrepreneurs survive longer than those created by immigrants. The differences in venture survival between immigrant versus local entrepreneurs can be explained by the disadvantaged situation they find at running a business in a foreign country.

3.2.2   Determinants of venture survival

Factors affecting venture performance can be grouped in various ways. I propose a conceptual framework following the line of thinking developed by Gimeno et al. (1997) and Schutjens and Wever (2000). This framework includes internal and external characteristics of the new venture. On the one hand, I include the entrepreneurs' human capital endowment and organisational resource-strategy factors as *firm-internal* factors to explain venture survival. On the other hand, *firm-external* factors relate to agglomeration economies are expected to influence new business longevity.

Conventional wisdom suggests that human capital factors as well as personal characteristics such as education, experience, age and the gender of entrepreneurs affect venture success. Older, more educated and experienced entrepreneurs are expected to perform better than younger, less educated and experienced entrepreneurs (Bates 1997; Schutjens and Wever 2000; Fertala 2004, Arias et al. 2004).

Given the limitations of my database and based on past studies on entrepreneurs' human capital (Zacharaskis 1999; Honing 2001; Peña 2002) and on ethnic entrepreneurship (Light 1984; Aldrich and Waldinger 1990; Mata and Pendakur 1999), I will consider the age and the gender of entrepreneurs as person-related factors that affect business performance.

Most studies show that older entrepreneurs perform better than their younger counterparts (Cooper et al. 1989; Stuart and Abetti 1990; Constant and Zimmermann 2004). Older entrepreneurs usually have more experience, and this positively affects venture performance. In sum, older foreign entrepreneurs are likely to accumulate more experience and human capital attributes.

The effect of gender of entrepreneurs on the success of ventures is ambiguous. While some studies show that women entrepreneurs build up less successful companies (Carvajal 2004), others show the opposite outcome (Lerner 1997; Baycan Levent et al. 2003; Fertala 2004). Moreover, Boden and Nucci (2000) found that the financial and human capital acquired by entrepreneurs in previous wage employment affect the success of firms, but that female entrepreneurs were at a disadvantage due to: (i) their lower average wage earnings and greater initial financial constraints; (ii) the fact that women are less likely than men to have any prior managerial experience; and (iii) the fact that women usually have fewer years of prior paid employment experience and therefore acquire less valuable human capital during wage employment. Conscious of the dual discrimination suffered by immigrant women entrepreneurs in a foreign and usually male-dominated market, I state that firms created by them do not survive as long as those created by male immigrants.

Based on these studies of individual characteristics of entrepreneurs, I formulate this proposition:

> *Proposition 7: Firms created by more experienced and male entrepreneurs survive longer than those started by their counterparts.*

The resource-based view of competitive advantage states that organisational resources and strategies serve to explain business survival. The basic assumption here is that resources and capabilities can be heterogeneously distributed across competing firms, these differences can be long-lasting and they can help to explain why some firms outperform other firms (Barney 2001). The resources and capabilities of firms include all the financial, physical, human and organisational assets they use to develop, manufacture and deliver products to their customers (Barney 1995).

The number of employees as well as their qualification and abilities constitute the human resources of the firm. The number of employees or the size of firms may influence their survival. There is enough empirical evidence to suggest that venture size is positively linked to survival (Mata et al. 1995; Geroski 1995; Audretsch and Mahmood 1995; Sutton 1997; Zhang 1999; Segarra and Callejón 2002). Since I am only analysing firms created by a single person, my sample is composed only of small firms. To be exact, 93 and 96 per cent of the firms created by foreign and native entrepreneurs, respectively, in the Basque Country started with 0, 1 or 2 employees. I expect that the small size of the firms that constitute my sample have a negative effect on their survival.

The ethnic and immigrant entrepreneurship literature suggests, however, that immigrant entrepreneurs often have family and co-ethnic

labour working without any formal contract. Certainly, the supportive role of the family and, specially, of wives can be key competitive factors for immigrant entrepreneurs. Kofman et al. (2005) argue that women understand the firm as a family and, thus, often remain in supportive rolls in small businesses. Ward and Jenkins (1984) suggested that employing relatives and other community members might be a key competitive advantage for immigrant entrepreneurs. However, since my data is limited to formally employed labour, it is important to remember that non-formally recognised employees may be absent from the dataset.

Due to the liability inherent in being new, firms face risks in the initial stage of their development. In order to overcome initial difficulties and to gain a competitive edge, firms employ different strategies. Nicholls-Nixon et al. (2000) propose the concept of 'strategic experimentation' defined as 'a series of trial and error changes pursued along various dimensions of strategy, over a relatively short period of time, in an effort to identify and establish a viable basis for competing' (Nicholls-Nixon et al. 2000: 496). They highlight environmental dynamism, uncertainty and hostility as factors that can affect organisational stress. Dynamism refers to the continuous environmental changes that characterised present-day markets. Environmental uncertainty concerns the inability of firms to predict the impact of these environmental changes and to determine the available response options as well as their consequences. Nicholls-Nixon et al. (2000) add that dynamism and uncertainty can create both difficulties and opportunities by generating new possibilities for venture performance. It has been stated that business strategies involving mobility positively affect business success (Stearns et al. 1995). Based on this hypothesis, I argue that geographical mobility may mitigate the impact of an uncertain and non-favourable environment and offer a new source of opportunity in a new location. Finally, environmental hostility refers to the threat that arises as a result of the level of competition and volatility of the firms' principal industry. I propose industry diversification as a possible experimentation strategy for overcoming the environmental hostility.

Based on previous findings on the effect of firm-related factors on venture survival, I formulate my next proposition as follows:

Proposition 8: Firms' resources and strategies affect venture survival. Firms with a larger initial size and those which apply experimental adaptation strategies survive longer than those started with a smaller size.

Not only firms' internal factors but environmental variables may also extend or shorten venture survival. The influence of external factors on venture performance has been widely studied in the entrepreneurship

literature. Rekers and Van Kempen (2000) suggested that the spatial context has an effect on the start of ethnic enterprises: economic development – such as agglomeration effects, unemployment, subcontracting, and size of firms – the composition of the population of an area, the urban environment measured by the availability of premises, and local policy are the most significant influences on firm performance. They pointed out that these factors were not specific to ethnic entrepreneurs, but that they affected potential entrepreneurs in general.

Audretsch et al. (1999) suggested that external factors faced by firms, such as industry characteristics or characteristics inherent to the local region are important to understand venture performance. Rath (2002) claimed the need of taking into account the dynamics of socio-economic factors in the study of the entrepreneurial activity of immigrants. Based on previous studies on agglomeration economies and immigrant entrepreneurship, I suggest socio-economic variables such as regional unemployment and immigrations rates, the location of a firm in an urban versus a rural environment and the particularities of industry sectors as factors that may affect firm survival.

The industrial sector in which the company operates may have an influence on venture survival. Aldrich and Waldinger (1990) argue that immigrant entrepreneurs often operate in marginal, post-industrial, segmented or exotic markets, where the barriers to entry are relatively low and, consequently, the degree of competition is high. A generally accepted indicator to measure the intensity of competition and market turbulence of an industry is the annual entry rate. Segarra and Callejón (2002) define the term 'market turbulence' as the sum of the rates of gross entry and gross exit and affirm that the rates of entry are highly correlated with hazard rates across industries. Surprisingly, they found that the likelihood of venture survival was positively correlated with higher entry rates, while other empirical studies (Audretsch et al. 2000; Fritsch et al. 2006) conclude the opposite.

I consider the industry entry rate as possibly being either an indicator of low entry barriers or of the attractiveness and good health of an industry. In both cases the competition is expected to be high but the effect of higher entry rates on venture survival could vary depending on the motivation (low barriers versus good health) of entering a specific industry sector, with survival of firms starting in an industry sector due to its low entry barriers expecting to be lower.

Besides, industry specific entry rates and the consequent market rivalry are not the only possible determinants of market turbulence and, thus, market entry rates could not explain, by themselves, the likelihood of survival of firms operating in specific industry sectors. The particular dynamic of certain industry sectors, such as construction – where frequently the life of the firm coincides with the duration of each project

and the subcontracting of self-employed is the common rule – capital constraints, etc., could be alternative explanatory factors behind market turbulence non-explainable by market entry rates. Given these built-in limitations on firm endurance, I will explore the effect of industry-specific market exit as an additional indicator of market turbulence on venture survival.

In the Basque Country, 75 and 71 per cent of foreign and native single entrepreneurs respectively operate in the construction, retail, hotel and catering and business services sectors, where the barriers to entry are low and competition and market turbulence greatest (see market entry, exit and turbulence rates in Appendix 2). I expect that operating in these industry sectors will have a negative effect on firm survival.

Empirical evidence suggests that geographical location could influence the performance of firms. Holt (1987) listed some factors that could influence venture location: logistics and transport facilities, patterns of venture success or failure of an area, predisposition of banks and financial institutions, commercial disposal and subcontractor services, fabrication and suppliers. In this respect, it has been argued that the selection of an urban, rural or peripheral geographical area and the proximity of clients, suppliers and competitors can influence the success of the company (Stearns et al. 1995; Littunen 2000; Peña 2004). Razin (1999) maintained that locating firms in large metropolitan areas increased the main earnings of immigrant entrepreneurs.

The socio-demographic composition of an area, and especially the size of the immigrant population where the company is located, might also affect the success of immigrant entrepreneurs (Bull and Winter 1991; Rekers and Van Kempen 2000; Fertala 2004). First, a lively commercial enclave with a high concentration of immigrant entrepreneurs with their own commercial networks can bring together co-ethnics looking for products from their places of origin; second, the enclave can constitute an attraction for those individuals who, not belonging to the same ethnic group, demand products that they perceive as different or even exotic. In sum, locating a firm in an area with a large population of immigrants would attract more clients and, thus, increase the likelihood of firm survival for immigrant entrepreneurs.

Finally, the macroeconomic environment in which the company is created affects the probability of its success. Specifically, the regional unemployment rate may affect firm survival. Constant and Zimmermann (2004) found that earnings of immigrants decreased for those who lived in areas where the unemployment rate was high. Audretsch and Mahmood (1995) concluded that a high unemployment rate had a negative effect on the likelihood of survival of new entrants. On the one hand, a high unemployment rate is symptomatic of a weak economy; on the other hand, entrepreneurship may emerge as an

alternative to unemployment or non-satisfactory work conditions. In other words, immigrants start businesses when they are less likely to succeed: during an unfavourable economic cycle, when resources are scarce and their decision necessity-driven (Constant and Zimmermann 2004).

Based on previous empirical findings on the effect of environmental factors on venture survival, I pose the last proposition of this section as follows:

> *Proposition 9: Environmental factors (industry-related, economic and socio-demographic) have an influence on venture survival.*

The first part of the literature review analyses the likelihood of immigrants to become self-employed, whereas the second and third parts focus on the performance of these initiatives. More specifically, in this section I reviewed the literature on business survival and I posit that due to the liability of foreignness faced by immigrants, foreign-owned firms do not survive as long as native-owned ones. However, survival is not the only indicator of the success of a business. The profitability of a firm is another way of measuring a firm's success. Hence, in the third part of the literature review I extend the study of the performance of foreign-owned businesses by comparing the earnings of entrepreneur immigrants to those obtained by salaried immigrants.

3.3 Determinants of immigrants' earnings

While the self-employment propensity of immigrants of different origins is well documented, little is known about what happens to ventures started up by immigrants. Are earnings derived from the new ventures large enough to compensate for the opportunity cost of working for others? There seems to be a consensus among scholars that opportunity costs of becoming entrepreneurs are lower for immigrants than for natives; this is due to the barriers that prevent immigrants from accessing the local labour market. Yet, the immigrant entrepreneurship literature is not conclusive with regard to the potential greater earnings of self-employed immigrants. While some researchers claim that earnings from self-employment exceed salaries (Light 1984; Borjas 1986), others suggest the opposite (Hammarstedt 2001; Hjerm 2004).

I aim to contribute to the extant debate by analysing the determinants of earnings of self-employed versus salaried immigrants in Spain. The socio-economic advancement hypothesis suggested by Constant et al. (2003) will be tested by examining the effect of entrepreneurship on

the earnings of immigrants. Constant et al. (2003) goes beyond the dis-
advantage hypothesis when they state that entrepreneurship can be con-
sidered as an avenue for immigrants' upward mobility in the host coun-
try. Specifically, I address the last set of research questions:

(8) Is there any significant difference between the earnings of self-employed
     and salaried immigrants?
(9) Are the explanatory factors for earnings similar for self-employed and
     salaried immigrants?

Entrepreneurship has been claimed to be an alternative to overcome the
substantial labour market barriers faced by immigrants due to their *lia-
bility of foreignness* (i.e. additional barriers such as poor language skills,
lack of work experience and human capital attributes required in the
host country, as well as discrimination). Nevertheless, the effectiveness
of self-employment as a means to facilitate immigrants' economic inte-
gration is controversial. Whereas some empirical studies show a posi-
tive relationship between self-employment and the earnings of immi-
grants, other authors remain sceptical. Studies carried out in Germany
and the US show that the earnings of self-employed immigrants are
greater than those of salaried immigrants (Borjas 1986; Constant et al.
2003). In contrast, empirical studies carried out in Sweden point to the
opposite (Hammarstedt 2001; Hjerm 2004).

I believe that differences in the welfare state system and the attitude
towards discrimination across countries may influence the earnings of
self-employed and salaried immigrants. My study is conducted in
Spain, where salaried immigrants often work in worse conditions than
natives. The liability of foreignness, or the additional difficulties faced
by immigrants in a foreign country, slows down their incorporation into
the labour market. Considering these trends, I expect self-employment
to improve immigrants' earnings.

Furthermore, I state that earning differences may depend on the mo-
tivation of individuals to start up a firm. Empirical studies suggest that
motivation influences business survival and growth, opportunity-driven
entrepreneurs being more likely to achieve business success than neces-
sity-driven entrepreneurs (Arias et al., 2004). This is often true due to
the greater opportunity costs usually faced by opportunity-driven entre-
preneurs who accordingly gain greater earnings.

Based on previous empirical studies on the origin and motivation of
entrepreneurs, I pose the following proposition:

> *Proposition 10: Self-employed immigrants are likely to earn more than salaried immigrants. Furthermore, opportunity-driven immigrant entrepreneurs are likely to earn more than their necessity-driven counterparts.*

Literature on immigrant entrepreneurship has analysed human capital, socio-demographic, cultural, industry-sector and environmental factors as predictors of entrepreneurial earnings. I believe that these factors can be grouped according to the taxonomy suggested by Bearse (1982) and Wagner and Sternberg (2004) to analyse the determinants of firm creation. I thus differentiate two major sets of determinants to analyse the predictors of self-employed and salaried immigrants' earnings: individual- and context-related factors. In my conceptual framework I consider human capital endowment and socio-demographic characteristics as individual-related factors, and industry sector and location variables as context-related factors in the host society.

3.3.1 Individual-related factors

Conventional wisdom suggests that human capital attributes influence the economic performance of individuals. A high level of education, work experience, the number of years in the host country and good host-language proficiency are human capital factors that increase the odds of high earnings for both self-employed and salaried immigrants. While some authors found a positive relationship between high qualifications and high earnings among entrepreneur and non-entrepreneur immigrants (Clark and Drinkwater 1998; Dávila and Mora 2002; Hjerm 2004), others did not find education to be significant (Constant et al. 2003; Hammarstedt 2004). Older individuals are expected to accumulate knowledge and valuable experience to launch new ventures. The literature on entrepreneurship shows that older entrepreneurs perform better than their counterparts (Cooper et al. 1989; Stuart and Abetti 1990; Constant and Zimmerman 2004). Work experience is also important in the labour-market. In both instances, entrepreneurial and non-entrepreneurial immigrants are expected to obtain a higher income level as they accumulate experience. With rare exceptions, experience, in turn, correlates positively with age.

Socio-demographic factors such as gender, marital status and place of birth are also found to be predictors of earnings derived from entrepreneurial activities and salaries of immigrants. Both the place of origin of immigrants and the ethnicity of non-migrant ethnic groups have been related to their earnings. As shown by Hammarstedt (2001), the profile of immigrants coming from one specific country may differ depending on the time period at which immigrants leave their country. Similarly,

the profile of immigrants varies across countries for the same period of time. Moreover, several empirical studies show inter-group differences between salaried immigrants' earnings and those of immigrant entrepreneurs (Borjas 1986; Butler and Herring 1991; Hammarstedt 2001; Hjerm 2006). Although no unique pattern explains the income distribution of different ethnic groups, these studies suggest that immigrants from socio-economically advanced countries earn more than those from socio-economically less advanced countries. In this case, immigrants from North America and Europe who have a satisfactory living standard in their own countries are expected to maintain or improve their income levels when they move to Spain. Additionally, I believe that North Americans and Europeans are both culturally and institutionally closer to one another than they are to Asians or Africans, and I expect that these immigrants' increased familiarity with the host system will also translate into better economic performance.

Based on previous studies on the effect of individual characteristics on immigrants' earnings, I state the following proposition:

> *Proposition 11: Individuals with richer human capital endowments gain a higher income than their counterparts.*

3.3.2   Context-related factors

Wages vary across industry sectors and regions. Similarly, entrepreneurs' earnings are expected to differ depending on the type of business activity and the location of the venture. Hence, I must take into account the effect of the context on the income level of both immigrant entrepreneurs and others. Context-related factors selected for my analysis relate to the industry sector, the firm location, and the macroeconomic characteristics of each Spanish region.

Constant and Zimmerman (2004) found that working in the construction and banking sector has a positive effect on the income of both immigrant entrepreneurs and salaried immigrants. Clark and Drinkwater (1998) also found that operating in the construction sector increases the income of the self-employed. In addition, the *Salary-structure survey* carried out by the Spanish Statistical Institute reports that the mean income for both native Spanish and immigrants in manufacturing is greater than that in other industry sectors (Spanish Statistical Institute 2002). Accordingly, I expect that industry sectors will influence the earnings of immigrants, with those who work in manufacturing and construction (i.e. transforming industries) being at an advantage.

Firm location may also influence the earnings of both self-employed and salaried immigrants. Immigrant entrepreneurs often prefer to start up their firms in metropolitan areas due to the high density of the population – which should guarantee a greater demand for goods and services – and the agglomeration economies arising in a concentrated location. The literature on immigrant entrepreneurship shows that foreign-owned firms located in metropolitan areas perform better than those located in rural areas (Razin 1999; Hammarstedt 2004). Razin (1999) explains this state of affairs by arguing that immigrants concentrate in metropolitan areas, where the opportunity for the formation of ethnic niches is greater. The self-employed who work in these niches, where the demand for goods is greater, obtain greater earnings than do co-ethnics outside the niche areas.

Other empirical studies (Clark and Drinkwater 1998; Constant and Zimmerman 2004) show that macroeconomic conditions, measured by unemployment, influence the income of both self-employed and salaried workers. I believe that the regional GDP per capita may work as a good predictor of the earnings of self-employed and salaried immigrants: it is reasonable to assume that immigrants who live in regions where the GDP per capita is above average will be more likely to earn more, ceteris paribus. In addition, I expect that living in urban areas will have a positive influence on the earnings of immigrants due to the greater demand and the greater number of employment opportunities available.

Based on these studies, I pose my last proposition as follows:

Proposition 12: Environmental factors (industry-related economic and socio-demographic) have an effect on individuals' wages.

In the first three sections of this chapter I presented and discussed findings of previous empirical studies on the entrepreneurial motivation, propensity and success of immigrants. In the concluding section of this chapter I will give a brief overview of the theoretical discussion on the appropriateness of labelling the entrepreneurial activity of immigrants and members of ethnic minorities as immigrant and ethnic entrepreneurship. Since this is an empirical dissertation, I will limit to present the discussion in the following section and resume it in the concluding chapter, in order to make a modest contribution based on the empirical findings of this dissertation.

3.4   Ex-ante discussion of ethnic/immigrant entrepreneurship

The majority of studies on ethnic and immigrant entrepreneurship fall under the umbrella of the *ethnic* and *immigrant* entrepreneurship literature (e.g. Light 1972, 1979; Bonacich 1973, 1987; Aldrich and Waldinger 1990; Waldinger et al. 1990). A large part of the ethnic and immigrant entrepreneurship literature has focused on explaining inter-group differences in self-employment, often omitting the internal heterogeneity which may be found among individuals who belong to the same group. In addition, there is little empirical evidence about the uniqueness of the so-called ethnic and immigrant businesses as compared to those of the mainstream. Moreover, it has been argued that the ethno-cultural characteristics of businesses owned by immigrants and members of ethnic minorities have been overstressed (Rath and Kloosterman 2000). In contrast to the cultural approach, some researchers highlight the importance of national and local socio-economic environments (e.g. Ram and Jones 1998; Rath and Kloosterman 2000; Leung 2002). The significance of this idea is twofold: one the one hand, the same socio-economic context can affect immigrants coming from various countries with various human capital attributes differently, and some immigrants may perceive opportunities where others see constraints. The language spoken in the host country, region or area, the presence or absence of so-called *ethnic enclaves*, and immigration policies designed to attract highly skilled immigrants could exemplify this. On the other hand, and for the same reasons, people with the same origin and a similar profile could be successful in certain countries but not in others.

This empirical dissertation does not propose to start a long theoretical discussion on the appropriateness of labelling the entrepreneurial activity of immigrants and ethnic minorities as *ethnic* or *immigrant* entrepreneurship. On the contrary, based on empirical findings, it aims to make a contribution to the debate. In this section the discussion is launched and two of the literature streams on entrepreneurship are presented.

The resources theory (Light 1972; Light and Gold 2000) defines the concept of *ethnic resources* as socio-cultural elements based on ethnic social networks, such as marriage systems, religion, common language, credit associations, etc. Light (1972) differentiated ethnic resources from class resources, arguing that the latter are cultural and material attributes, such as human and financial capital, which characterise the middle class all over the world. Nonetheless, the use of some ethnic resources – such as the formal or informal employment of family members in businesses, membership in alternative credit associations like the rotary club – and the use of other social networks, is also usual amongst *non-ethnic* or mainstream entrepreneurs. In addition, it is important to highlight that (i) not all immigrant entrepreneurs and those

who belong to ethnic minorities make use of ethnic resources and (ii) different ethnic minorities use different ethnic resources. One could ask whether or not the classification of ethnic versus class resources simply translates the distinction between the resources used by ethnic minorities and those employed by the dominant groups.

In a second stream of the ethnic entrepreneurship literature, the interaction model, Aldrich and Waldinger (1990) claim that three groups of factors interact in the creation of ethnic businesses: group characteristics, the opportunity structure and ethnic strategies. Group characteristics involve the human and social capital of entrepreneurs, such as migration history, academic background and post-migratory socioeconomic situation. As for ethnic resources, with the exception of migration characteristics, these factors are also considered in the mainstream entrepreneurship literature as important to promote or hinder business creation and venture success. The opportunity structure refers to market conditions, such as niches available to immigrants, as well as to the possibility of acquiring property. Finally, ethnic strategies arise from the use of ethnic resources to overcome the difficulties found in the opportunity structure. Strategies involve the sharing of information in public spaces where people of the same ethnic group meet (churches, ethnic associations, etc.), financial support from family, friends or co-ethnics, the employment of family members, hard work, etc. As for ethnic resources, these strategies can also apply to non-ethnic small business owners. Once more, we could ask what makes these strategies ethnic: the practice or the individuals who carry out that practice.

In sum, these studies may simplify the diversity extant in businesses run by immigrants and members of ethnic minorities in different ways. Firstly, they overstress the cultural component and, hence, undervalue individual factors. Parella (2005) points out that some studies have treated the entrepreneurial activity of immigrants and members of ethnic minorities as anomalous simply because firm owners were foreigners. Secondly, in these studies, immigrants and members of ethnic minorities all fall under the same *ethnic* umbrella with similar *ethnic* characteristics, regardless of their origin. Finally, researchers apply the term *ethnic* to people who do not belong to the ethnic majority group and, thus, consider the mainstream as *non-ethnic*. Besides, the concept of ethnicity has not been always used with appropriate rigor: some researchers apply it to sub-national groups while others do so to whole countries. This is the case for the Chinese who belong to more than 50 recognised ethnic groups but are often treated as if they all belong to only one. I will resume the discussion of the labelling of ethnic and immigrant entrepreneurship in the concluding part of the dissertation, after the main findings are presented.

4   Conceptual framework

Entrepreneurship comprises different stages: from the generation of the business idea and the desire to carry it out (pre-start-up stage), to its successful implementation (post-start-up stage).

   In this chapter I build on the literature review discussed in chapter three to present the conceptual frameworks for my empirical studies. After presenting the general conceptual framework, which describes the stages of immigrants' entrepreneurial processes, I show more detailed conceptual framework for each set of my empirical analyses, since the factors affecting each part of the entrepreneurial process differ.

4.1   General conceptual framework: Stages of immigrants' entrepreneurial process

Traditionally, the literature on immigrant and ethnic entrepreneurship has focused on analysing inter-group differences in immigrant and ethnic entrepreneurial activity (Light 1972; Aldrich and Waldinger 1990; Butler and Herring 1991; Clark and Drinkwater 1998). According to these studies, cultural factors are the most significant factors affecting immigrants' self-employment. By contrast, there are few studies that consider environmental and individual factors as possible factors for immigrants to become entrepreneurs (Bates 1997; Ram and Jones 1998; Rath and Kloosterman 2000; Leung 2002; Constant and Zimmerman 2004; Levie 2007).

   Furthermore, whereas the majority of these studies have focused on analysing the factors affecting immigrant self-employment, only a few authors (Bates 1997; Fertala 2004) have analysed the performance of these firms.

   This dissertation aims to fill these gaps in the literature by using a conceptual framework that (i) takes into account both the pre-start-up and post-start-up stages of immigrants' entrepreneurial process and (ii) incorporates individual-, firm- and context-related factors as possible determinants of business creation and success.

   The general conceptual framework used to conduct the empirical part of this study is based upon the work of various other authors: Bearse

(1982), Gimeno et al. (1997), Schutjens and Wever (2000) and Wagner and Sternberg (2004). On the one hand, Bearse (1982) and Wagner and Sternberg (2004) analyse the factors affecting self-employment by dividing them into two major sets: individual- and context-related factors. On the other hand, Gimeno et al. (1997) and Schutjens and Wever (2000) analyse venture survival. These authors use a different taxonomy when they classify factors affecting business survival into two different groups: firm-internal and firm-external factors. In this model, entrepreneurs' human capital and socio-demographic characteristics are classified as firm-internal factors, whereas firm-external factors are equivalent to the environmental factors suggested by Bearse (1982) and Wagner and Sternberg (2004).

I combine the work of these authors to propose a general conceptual framework for analysing the different stages (pre-start-up and post-start-up) of immigrants' entrepreneurial process. As shown in Graph 13, this framework examines individual-, firm- and context-related factors. Individual- and context-related factors are analysed in first stage of the process to explain both the intention to start a business and its implementation. In the second stage, during which immigrants' venture performance (i.e. firm survival and revenue) is analysed, the same two groups of factors are considered along with a third group of factors: the characteristics of the established firm.

In sum, I use the taxonomy suggested by Bearse (1982) and Wagner and Sternberg (2004) to conduct my first set of empirical analyses on the determinants of self-employment, while I build on the work of

Graph 13 *Conceptual framework: Stages of immigrants' entrepreneurial process*
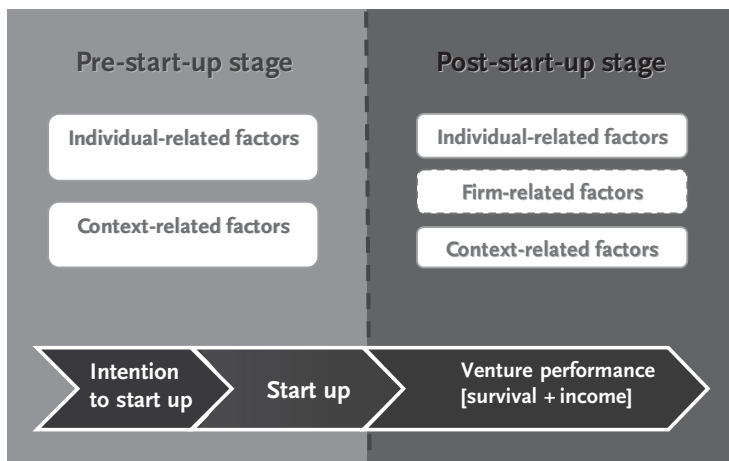
Gimeno et al. (1997) and Schutjens and Wever (2000) to analyse the effect of firm-internal and firm-external factors on venture survival. Finally, the third empirical analysis compares economic benefits for self-employed and salaried immigrants. I tried to build a similar model for each sample (self-employed and salaried). Since I could only test firms' characteristics for the self-employed' sample, I decided not to include many firm-related variables in my models. Thus, I used the same taxonomy as in the first empirical analysis and classified factors affecting immigrants' revenues into two major groups: individual- and context-related factors.

A more detailed description of the conceptual framework designed to conduct each set of empirical analyses follows.

4.2   Pre-start-up stage: Likelihood of self-employment

The conceptual framework designed for the first empirical study, i.e. an analysis of immigrants' intention and actual likelihood to become self-employed, is built upon the works by Bearse (1982) and Wagner and Sternberg (2004). These authors classify factors affecting immigrants' propensity to self-employment into two major groups: individual- and context-related factors.

As shown in Graph 14, I consider human capital endowment, socio-demographic characteristics and perceptual variables as individual-related factors to explain both the intent and act of becoming an entrepreneur. On the other hand, context-related factors include individuals' cultural origin as well as environmental factors of the host society.

Graph 14   *Conceptual framework: Immigrants' entrepreneurial process, pre-start-up stage*
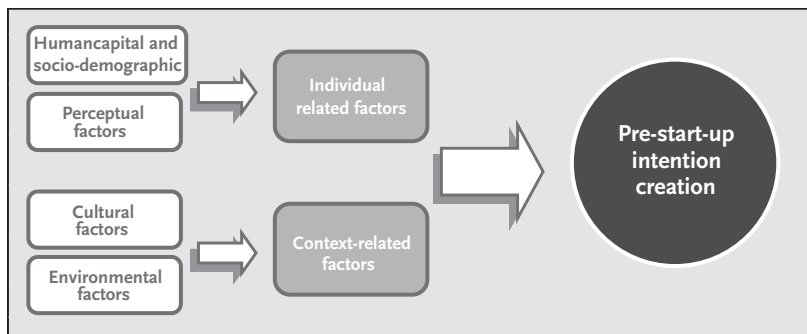
4.3   Post-start-up stage: Business survival

The success of a business can be assessed in various ways. In this dissertation I analyse venture survival and revenue as indicators of the performance of firms created by immigrants (post-start-up stage).

The second set of empirical analyses compares the survival of foreign-owned and native-owned firms. To conduct this study I designed a conceptual framework based on the work by Schutjens and Wever (2000) and Gimeno et al. (1997). This framework includes not only individual-related and context-related factors, but also those explaining an established firm's characteristics.

According to this taxonomy, individual-related and firm-related factors are classified as *firm-internal* factors, whereas context-related factors are the equivalent of *firm-external* characteristics. As shown in Graph 15, on one hand, I include the entrepreneurs' human capital and socio-demographic characteristics along with organisational resource-strategy as firm-internal factors to explain venture survival. On the other hand, factors related to industry sectors and agglomeration economies, which are expected to influence new business longevity, are accounted as firm external.

4.4   Post-start-up stage: Economic benefits

My third set of empirical analyses aims to complement the second study of the success of foreign-owned firms by comparing the earnings of self-employed and salaried immigrants. Since this study involves both self-employed and salaried immigrants, I decided to omit firm-related factors (in contrast to the framework used to analyse business survival) in order to maintain the two samples as similar as possible.

Graph 15 *Conceptual framework: Immigrants' entrepreneurial process, post-start-up stage. Business survival*
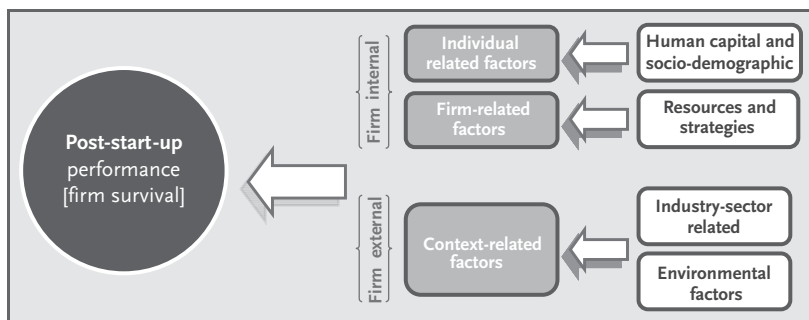
Human capital, as well as socio-demographic, cultural, industry-sector related, and environmental factors have been proposed in the literature as determinants of entrepreneurial earnings. I believe that these factors can be grouped according to the same taxonomy suggested by Bearse (1982) and Wagner and Sternberg (2004) to analyse possible determinants of firm creation. I thus differentiate two major sets of influencing factors: individual-related and context-related factors. In the conceptual framework shown in Graph 16, I consider human capital endowment and socio-demographic characteristics as individual-related factors and industry sector and location variables as context-related factors in the host society.

A more detailed description of the variables that explain each set of factors is provided in Section 5.3 of the third part of this dissertation.

Graph 16 *Conceptual framework: Immigrants' entrepreneurial process, post-start-up stage. Economic benefits*
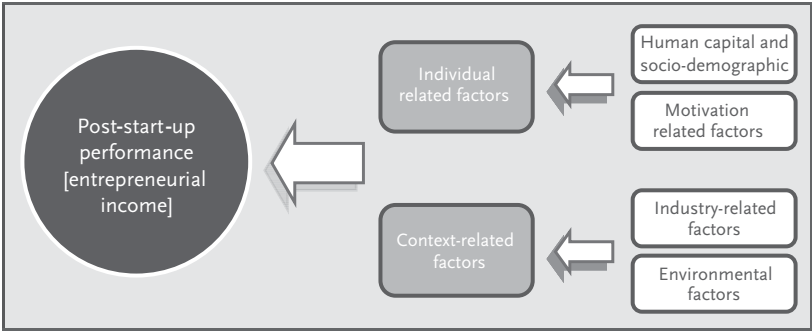
Part III: Empirical study

5 Data and methodology

In this dissertation I analyse the entrepreneurial propensity and performance of immigrants. I do this by conducting three sets of empirical tests: after assessing the prevalence of self-employment, I analyse the success of immigrant enterprises through an empirical study of their survival and an empirical study of the earnings of entrepreneur immigrants. Since each of these studies requires the selection of different data, samples, variables and methods, the following sections are organised around these three sets of empirical tests in order to better understand the whole analysis.

5.1   Description of the databases

The empirical study of this dissertation is conducted in two geographical areas, Spain and the Basque Country, by using different databases. The selection of the geographical area corresponds mainly to the availability and suitability of the data to carry out each set of the empirical tests. On one hand, data collected by the Global Entrepreneurship Monitor (GEM) consortium in Spain is used to analyse immigrants' likelihood of self-employment and the entrepreneurial rents obtained by them. On the other hand, I use firm census data from 1993 to 2003 provided by the Basque Statistical Institute to compare the survival of foreign-owned firms to that of native-owned ones. Being a census, this database allows me to follow the development of each firm year by year, which I could not do with the GEM cross-section data.

   Data from GEM have been used to conduct two of the three sets of empirical tests. The GEM research programme is an annual assessment of the national level of entrepreneurial activity. Based on a harmonised assessment of the level of national entrepreneurial activity for all participating countries, the programme aims to explore of the role of entrepreneurship in national economic growth. The study was initiated in 1999 in ten countries and currently over 40 countries from all over the world participate in this project. Data collection for the GEM project is based on telephone surveys of representative samples of the adult population of each country. Thus, GEM data involves entrepreneur, non-

entrepreneur, immigrant and native individuals. A minimum of 2,000 individuals is annually interviewed in each country. Exceptionally, some of the research teams involved in the GEM project collect data at a regional level. This is the case of the UK, Germany and Spain. In those regions, a minimum of 2,000 individuals is interviewed in each region (for a more detailed explanation of GEM data collection and process refer to Reynolds et al. 2005b).

The data used in the study of immigrants' likelihood of self-employment were collected in thirteen Spanish regions in 2005. Due to the fact that some Spanish regions such as Extremadura have a low population, only 1,000 interviews (instead of the regular 2,000) are conducted in those regions. This is why my initial sample involved 19,000 individuals and not 26,000, as one might expect.

Firm creation has not caught the attention of many researchers participating in the GEM project (Sternberg and Wennekers 2005). In particular, studies on the entrepreneurial activity of immigrants are very scarce. These studies have examined already operational firms. An example of these is a recent study carried out by Levie (2007), which analyses the immigrants' propensity for venture creation using GEM data. Nevertheless, as far as I know, the intention to create a firm by an immigrant individual has not been empirically tested. This study aims to fill this gap in the literature by analysing and comparing the intention of individuals to start up firms (potential entrepreneurs) versus the actual entrepreneurial activity of individuals (actual entrepreneurs).

In January 2007, the percentage of immigrants registered as self-employed within the Spanish Social Security Department (8.5 per cent) was lower than that of natives (16 per cent). Nonetheless, the self-employment rate has grown faster in the immigrant community in recent years. In 2006, the immigrants' self-employment rate increased five times as much as the average self-employment growth rate for the total population (Spanish Federation of Self-employed Associations, January 2007). These figures show that the entrepreneurial activity of immigrants has been increasing in Spain over the last years.

GEM data collected for seventeen Spanish regions in 2005 and 2006 were also used to analyse earning determinants for entrepreneur versus salaried immigrants. Of the 47,000 individuals interviewed in the survey, 2,100 were immigrants who lived in Spain. Of the latter, 20 per cent were self-employed or entrepreneurs, 51 per cent were salaried, and the remainder were unemployed.

According to the Annual Immigration Report 2006, published by the Spanish Government, 8 per cent of foreigners are self-employed and 56 per cent are salaried. While the proportion of salaried immigrants is similar to that of the GEM project, the percentage of self-employed immigrants of the GEM data is twice as large as that of the official Spanish

data. Here I have to bear in mind that the variable *immigrant* in GEM is built upon the question 'In which country were you born?' and thus all the respondents born abroad are codified as immigrants. In the official Spanish statistics, on the other hand, the variable *foreigner* refers to nationality and distinguishes between Spaniards and foreigners; hence, immigrants with Spanish citizenship would be classified as Spaniards. Since the acquisition of knowledge and experience necessary to start up a business requires time, as does the acquisition of citizenship, it is likely that many self-employed immigrants are already Spanish citizens and reported as Spaniards in the Government data. I argue that this could in part explain the discrepancy between official Spanish data and data collected by GEM with regard to self-employed immigrants. Leaving aside this observation, I believe that I obtained a representative sample of immigrants living in Spain.

Finally, firm census data provided by the Basque Statistical Institute were used to compare the survival of foreign-owned firms to that of native-owned ones in the Basque Country. This data are annually updated.

The Basque Country has a population of about two million inhabitants. In January 2007, the immigration rate reached 4.6 per cent, while the self-employment rate was 24.5 per cent overall and 10.8 per cent for foreign entrepreneurs. An exploratory analysis of my database indicates that native-owned firms survive longer than foreign-owned firms at different points in time. Graph 17 illustrates the cumulative percentage of mortality of foreign- and native-owned sole proprietor firms created in the Basque Country in years 1994 and 1998. The graph shows that the cumulative mortality of firms started in 1998 by both native and foreign single entrepreneurs in period 5 was higher than the mortality of companies created in 1994. The lower average GDP growth of the period 1993-1997 (3.4 per cent) compared to that of 1998-2002 (5.9 per cent), as an indicator of the economic cycle, may explain this gap in firm mortality rates registered in the two periods. Even though the cumulative mortality of native-owned firms created in 1994 was higher than that of foreign-owned until period 4 – where the two lines cross – by period 5 the cumulative mortality of foreign-owned firms was higher than that of native-owned for companies created both in 1994 and 1998.

I used firm census data supplied by the Basque Statistics Institute that cover the 387,424 companies created in the Basque Country between 1991 and 2004. Out of these companies, 3,232 were created by foreign entrepreneurs. Of the total population, I selected a sample involving 127,908 firms (2,685 foreign-owned and 125,223 native-owned) created under the legal form of sole proprietor firms – i.e. by one entrepreneur – in the Basque Country between 1993 and 2003. The rationale for selecting only sole proprietor firms is that I could not discriminate

Graph 17 *Cumulative percentage of mortality of sole proprietor firms created in the Basque Country by origin (1994 and 1998)*
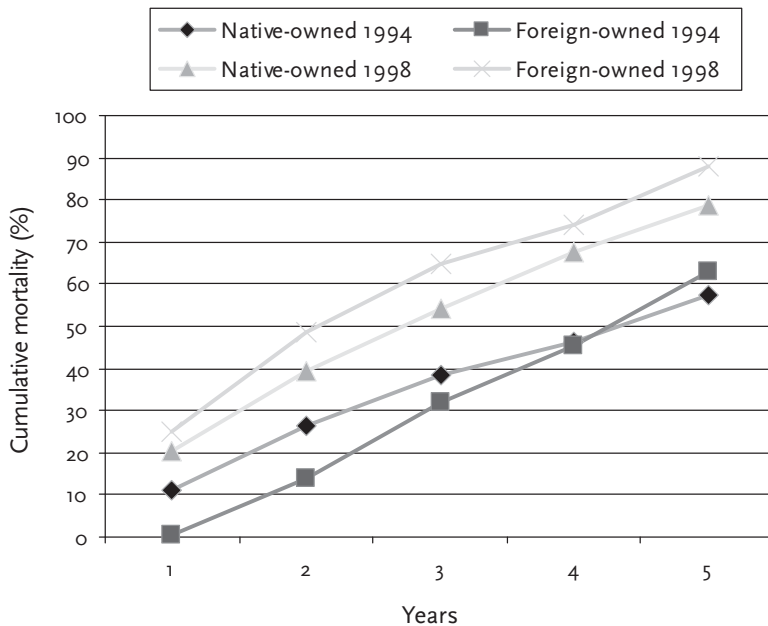
between native- and foreign-owned firms registered in my database under other associative forms. The database contains information on the origin, gender, and age of entrepreneurs. It also includes initial and final location, initial and final industry sector, initial and final size, and the years of creation and cessation of firms.

Data to create additional environmental variables included in the empirical study were provided by the Spanish Statistics Institute, the Spanish Unemployment Institute, the Spanish Observatory of Immigration and the Basque Statistical Institute.

5.2   Description of the samples

Different datasets were selected to conduct the three sets of empirical studies. Whereas two samples were extracted from GEM data to analyse the self-employment and earning determinants for immigrants and natives, I select the third sample from firm census data provided by the Basque Statistical Institute to compare the survival of foreign-owned with native-owned firms.

The first set of empirical analyses aims to examine the likelihood of self-employment and the factors affecting it for immigrants and natives,

using GEM data. My initial sample included 19,000 observations. After eliminating useless observations, I ended up with 9,000 individuals. About 570 of these cases represent potential entrepreneurs and 2,516 actual entrepreneurs. The remaining had no entrepreneurial intentions nor was involved in any kind of entrepreneurial activity. Immigrants accounted for 7.7 and 3.6 per cent, respectively, of the latter. Both immigrant and native individuals were included in my sample.

Table 13 shows the descriptive statistics and characteristics of the four samples selected for the first set of analyses: two of them represent potential entrepreneurs, whereas the other two are immigrants and natives who already run businesses. The most significant differences among these groups are the following: actual immigrant entrepreneurs stand out because of their higher human capital attributes such as having a college level education, previous experience in shutting down a business or business angels and by having a higher perception of self-entrepreneurial abilities. Nevertheless, native actual entrepreneurs earn a significantly higher income than actual immigrant entrepreneurs do. The percentage of individuals who earn a high income is also higher among potential native entrepreneurs than among potential immigrant entrepreneurs. Female immigrants represent more than the half of potential and actual entrepreneurs, while in the case of natives we find the opposite case. Immigrants are more concentrated in urban areas than natives and, in the case of potential entrepreneurs, immigrants locate in regions where the population density is half of that where natives live.

Finally, almost 90 per cent of potential immigrant entrepreneurs come from Central and South American countries, whereas in the case of actual entrepreneurs this group represents the half of the immigrant population, with the Europeans being also a significant group. The latter are older and have been living in Spain twice the same time as potential immigrant entrepreneurs.

Firm census data provided by the Basque Statistical Institute were used to conduct the second set of empirical analyses. These analyses aim to compare the survival of foreign-owned firms to that of native-owned firms. Table 14 summarises the descriptive statistics of the variables used in this set of analyses. As mentioned above, my sample comprises 125,223 native-owned and 2,685 foreign-owned sole proprietor companies. Minor differences can be observed between the firms created by foreign and native entrepreneurs. Seventy-three per cent of foreign-owned ventures were created by males, and foreign entrepreneurs at start-up had a mean age of 42. Firms created by immigrant entrepreneurs were slightly larger than those started by natives (almost 93 per cent of foreign-owned firms and 96 per cent of native-owned started with a maximum of two employees). Between 1993 and 2003, more than 70 per cent of foreign-and native-owned firms belonged to

Table 13 *Characteristics of the sample: Determinants of self-employment*

	Characteristics of the sample							
	Potential entrepreneurs				Actual entrepreneurs			
	Immigrants		Natives		Immigrants		Natives	
Educational level	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
College level	62	53.9	491	57.3	63	68.5	1,209	49.9
Lover level	53	46.1	366	42.7	29	31.5	1,215	50.1
Total	115	100	857	100	92	100	2,424	100
Shut down a business								
Yes	2	1.7	18	2.1	3	3.3	65	2.7
No	113	98.3	839	97.9	89	96.7	2356	97.3
Total	115	100	857	100	92	100	2421	100
Business angle experience								
Yes	6	5.2	54	6.3	14	15.2	183	7.5
No	109	94.8	803	93.7	78	84.8	2,241	92.5
Total	115	100	857	100	92	100	2,424	100
Know an entrepreneur								
Yes	32	43.2	482	68.1	51	56	1,173	48.4
No	42	56.8	226	31.9	40	44	1,225	51.1
Total	74	100	708	100	91	100	2,398	100
Gender								
Male	50	43.5	476	55.5	44	47.8	1,376	56.8
Female	65	56.5	381	44.5	48	52.2	1,048	43.2
Total	115	100	857	100	92	100	2,424	100
High income								
> € 1,800	15	15.3	238	34.4	25	32.9	797	43.5
< € 1,800	83	84.6	454	65.6	51	67.1	1,035	56.5
Total	98	100	692	100	76	100	1,832	100
Fear of Failure								
Yes	18	24	245	35	24	26.1	531	22.3
No	57	76	455	65	68	73.9	1851	77.7
Total	75	100	700	100	92	100	2382	100
Business opportunity								
Yes	40	62.5	320	55.8	43	56.6	929	46
No	24	37.5	253	44.2	33	43.4	1,090	54
Total	64	100	573	100	76	100	2,019	100
Entrepreneurial skills								
Yes	57	78.1	553	79.1	88	98.9	2,151	90.1
No	16	21.9	146	20.9	1	1.1	236	9.9
Total	73	100	699	100	89	100	2,387	100
Origin								
Asian	0	0	-	-	5	5.4	-	-
Central and South American	101	89.38	-	-	51	55.5	-	-
European	9	7.96	-	-	26	28.3	-	-
Maghrebian	1	0.88	-	-	5	5.4	-	-
North American	0	0	-	-	1	1.1	-	-
Other African	1	0.88	-	-	4	4.3	-	-
Total	113	100	-	-	92	100	-	-
Location								
Rural	16	13.9	143	18.1	12	13.2	409	18.7
Urban	99	96.1	649	81.9	79	86.8	1,775	81.3
Total	115	100	792	100	91	100	2,184	100

Table 13 *Characteristics of the sample: Determinants of self-employment (continued)*

	Descriptive statistics							
	Potential entrepreneurs				Actual entrepreneurs			
	Immigrants		Natives		Immigrants		Natives	
Variable	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Age	33	10.48	38	12.98	39	10.29	43	12.05
Years in Spain	8	11.31	-	-	15	13.70	-	-
Cultural support index	2.02	0.86	1.86	0.87	1.71	0.92	1.70	0.97
Pdensity05	393.79	798.03	868.48	1829.43	260.09	198.57	220.85	213.49
Unempl04-05	10.71	2.51	10.97	3.27	10.33	2.49	10.78	2.95
NewFirmsPC03	70.73	6.83	68.22	7.09	70.81	6.92	69.07	6.96

Source: GEM Spain (2005)

Table 14 *Characteristics of the sample: Determinants of firm survival*

	Descriptive statistics			
	Foreigners		Natives	
Variable	Mean	Standard deviation	Mean	Standard deviation
Initial age	42.1	9.4	-	-
Industry entry rate	12.9	4.5	15.3	10.5
Industry exit rate	11.8	3.3	11.5	3.5
	Characteristics of the sample			
	Foreigners		Natives	
Gender of entrepreneurs	**N**	**%**	**N**	**%**
Male	1,074	73.4	-	-
Female	389	26.6	-	-
Total	1,463	100	-	-
Number of entrepreneurs				
One	2,685	100	125,223	100
Two or more	0	0		0
Total	2,685	100	125,223	100
Initial number of employees				
0-2	2,492	92.8	120,279	96.1
3-5	163	6.1	4,275	3.4
6-9	27	1	504	0.4
10-14	2	0.1	104	0.1
15-19	0	0	34	0.0
20-49	1	0	21	0.0
50-99	0	0	4	0.0
100-249	0	0	2	0.0
Total	2,685	100	125,223	100

Table 14 *Characteristics of the sample: Determinants of firm survival (continued)*

	Characteristics of the sample			
	Foreigners		*Natives*	
Sector	**N**	**%**	**N**	**%**
Agriculture	0	0.0	1	0.0
Extractive industries	0	0.0	11	0.0
Manufacturing	68	2.5	6,732	5.4
Electricity, gas and water	0	0.0	8	0.0
Construction	419	15.6	19,809	15.9
Retail and reparation	847	31.5	31,908	25.5
Hotel and catering	404	15.0	15,486	12.4
Transport and communication	74	2.8	13,753	11.0
Banking and insurance	12	0.4	1,857	1.5
Business services	364	13.6	21,926	17.6
Public administration	0	0.0	2	0.0
Education	252	9.4	2,661	2.1
Health and social services	106	3.9	4,514	3.6
Personal services	136	5.1	6,054	4.9
Housing services	1	0.0	28	0.0
Extraterritorial bodies	2	0.1	11	0.0
Total	2,685	100	124,761	100
Location				
Rural	816	30.4	38,364	30.7
Urban	1,867	69.5	86,753	69.3
Total	2,683	99.9	125,117	100
Geographical mobility				
No	2,675	99.6	123,769	98.8
Yes	10	0.4	1,454	1.2
Total	2,685	100	125,223	100
Industry diversification				
No	2,558	95.3	117,360	93.7
Yes	127	4.7	7,863	6.3
Total	2,685	100	125,223	100

Source: Basque Statistical Institute (1993-2003)

the construction, retail, hotel and catering, and business services sectors, followed by education in the case of foreign-owned firms and by transport and communications and manufacturing in the case of native-owned. The 70 per cent of both foreign- and native-owned companies were located in urban areas.

Finally, regional data from the GEM project were used to conduct my last set of empirical analyses on earning determinants for entrepreneur and salaried immigrants. The data used in this study was collected for seventeen Spanish regions in 2005 and 2006. Of the 47,000 individuals interviewed in the survey, 2,100 were immigrants who lived in Spain. Of the latter, 20 per cent were self-employed or entrepreneurs, 51 per cent were salaried and the remainder were unemployed.

Table 15 *Characteristics of the sample: Determinants of earnings*

	Descriptive statistics			
	Self-employed immigrants		Salaried immigrants	
Variable	Mean	Standard deviation	Mean	Standard deviation
Initial age	42.62	11.41	42.43	13.02
Regional PCRent 2004	12,252.31	1,786.29	12,834.52	1,938.86
	Characteristics of the sample			
	Self-employed immigrants		Salaried immigrants	
Educational level	N	%	N	%
College level	203	48	486	45.2
Lower level	220	52	589	54.8
Total	423	100	1075	100
Gender				
Male	208	49.2	485	45.1
Female	215	50.8	590	54.9
Total	423	100	1075	100
Origin				
African	26	6.1	56	5.2
Asian	18	4.3	20	1.9
European	111	26.2	285	26.5
North American	18	4.3	16	1.5
South American	250	59.1	698	64.9
Total	423	100	1,075	100
Start-up motivation				
Opportunity	96	84.5	-	-
Necessity	197	15.5	-	-
Total	233	100	-	-
Industry sector				
Extractive	7	1.7	-	-
Transforming	55	13	-	-
Business services	48	11.3	-	-
Consumer-oriented	92	21.7	-	-
Others	221	52.3	-	-
Total	423	100	-	-
Location				
Rural	177	41.8	591	55
Urban	246	58.2	484	45
Total	423	100	1,075	100

Source: GEM Spain (2005 and 2006)

Table 15 shows the descriptive statistics and characteristics of the two samples. The most significant differences among these groups are the following: The percentage of female individuals and that with college education is higher among self-employed immigrants than among the salaried. The presence of Asian and North American people is more important among the self-employed, salaried workers are more significant among South Americans. Finally, the self-employed tend to concentrate

more in urban areas and in regions with lower GDP per capita than salaried workers do. The majority of immigrants start up because they detect a good business opportunity and they operate mainly in consumer-oriented and business services.

5.3   Description of the variables

In this section the dependent and explanatory variables used in the empirical analyses will be explained. Each section will be organised around the three sets of empirical analyses. A more specific definition of variables is provided in Appendix 1.

5.3.1   Dependent variables

First of all, two dependent variables were selected from GEM data to analyse the desire and likelihood of immigrants to become entrepreneurs. The first dependent variable, *Potential entrepreneur*, represents people who are not yet involved in an entrepreneurial activity, but expect to become entrepreneurs within the next three years. This dependent variable is dichotomous and answers the question 'Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?' Affirmative answers were coded as potential entrepreneurs. This variable will allow us to distinguish those individuals who intend to start a business (i.e. the dichotomous variable takes the value of 1), from those who do not (i.e. the dichotomous variable takes the value of 0). My second variable, *Actual entrepreneurs*, represents individuals who are involved in an entrepreneurial activity and it comprehends the combination of nascent firms (i.e. up to three-months-old firms), baby businesses (i.e. firms with a lifetime between three to 42 months) and established firms (i.e. firms older than 42 months). The distinction between potential versus actual entrepreneurs will allow us to compare the intent (i.e. ex-ante stage) and realisation (i.e. ex-post stage) of entrepreneurial projects among immigrant and native individuals.

Secondly, I used firm census data to test and compare the venture survival experiences of companies created in the Basque Country by foreign and native entrepreneurs between 1993 and 2003. I created a single dependent variable, *Survival*, that represents the number of years from firm inception to closure within the 1993-2003 time period.

Even though firm survival can be a sign of business success, closures are not always a consequence of failure. Firms may cease to be registered in my dataset for the following reasons: (i) immigrants may migrate in and out of entrepreneurship depending on labour market

conditions, not on the profitability of their firm; in this case firm closure would not be caused by business failure but by the hope for more favourable conditions in the general labour market; (ii) geographical mobility of firms from the Basque Country to other regions; (iii) the merging of firms; (iv) successful completion of projects in particular industry sectors such as construction. Taking into account these possibilities, I do not consider closures synonymous with firm failure, but I still will consider those that survive as successful firms.

Finally, in order to compare the earnings of self-employed and salaried immigrants, I selected the dependent dummy variable *Highincome* from GEM data. This variable represents the distribution of the monthly earnings of immigrants. It was created by recoding the initial variable *Monthlyrents*, built upon self-reported answers to a question on the monthly income level falling into one of five categories (<€ 600; € 600-1,200; € 1,200-1,800; € 1,800-2,400; and >€ 2,400). The new variable distinguishes between two income categories: a value of 0 is given to earnings situated between 0 and € 1,200 (below average) and a value of 1 is given to earnings greater than € 1,200 (above average). I selected this cutting point because, according to the latest salary-structure survey carried out by the Spanish Statistical Institute, the Spanish monthly net salary was € 1,160 in 2002. Thus, this dichotomous variable distinguishes between immigrants with above- and below-average earnings.

5.3.2 Independent variables

The independent variables selected from GEM data to predict the probability of immigrants and natives to engage in entrepreneurial activities correspond to the theoretical framework discussed in the literature section and include both individual-related and context-related factors. Individual-related factors include human capital endowments, socio-demographic characteristics and perceptual variables. Some independent variables were coded as binary variables. This is the case for human capital and socio-economic variables of the individual, such as *College* (where a value of 1 is equal to having a college education), *Shutd12* (takes the value of 1 if the respondent shut down a firm in the last year), *Busan* (1 represents having had a business angel experience in the past three years), *Knowent* (1 indicates knowing someone who started a firm in the past two years), *Male* (1 means being male), and *Highincome* (1 represents an income higher than € 1,200/month.

I included four perceptual variables in my empirical models: *Fearfail* (1 represents the fear of failure that would prevent respondents from starting up firms), *Opport* (1 indicates a favourable perception of entrepreneurial opportunities over the following six months), *Skills* (1

describes a favourable perception of self-entrepreneurial abilities and skills) and *Cultsup*. *Cultsup* is a cultural support index used in the GEM project to capture the regional entrepreneurial culture. This variable contains information about statements such as: 'Starting a new business is a good career choice in my country of origin', 'A successful business provides good social standing', and 'New successful businesses make the news in my home country.' The variable *Age* indicates the exact age of the respondent, and I added its square term, *Age2*, to test whether a curvilinear relationship exists between an individual's age and the intention to start up a new firm. Finally, the variable *Immigrant* is built upon the question 'In which country were you born?' (a value of 1 is given when the respondent is an immigrant).

Context-related factors include individuals' culture-related variables and environmental variables of the host society. Culture-related variables describe the place of origin of immigrants as follows: *Csamerica* (a value of 1 for Central or South America), *Asia* (a value of 1 is given for Asia), *Maghreb* (a value of 1 is given for the Maghreb) and *Safrica* (a value of 1 is given for Africa minus the Maghreb).

Data to create environmental variables on the thirteen regions of Spain were provided by the Spanish National Statistics Institute, the Spanish National Unemployment Institute and the Spanish Observatory of Immigration. I used regional level data to measure the environmental factors of the regional economies. The environmental variables included in my study are as follows: *Pdensity05* (which describes the regional population density as measured by number of inhabitants to the square-Km for 2005), *Foreignpop05* (indicates the percentage of foreigners per region in 2005), *Unemplo4-05* (calculates the average unemployment rate per region in 2004 and 2005), and *NewfirmsPC03* (represents the number of firms created per 1,000 inhabitants in 2003 in each region). The variable *Urban* takes the value of 1 when the respondent lives in an urban area (i.e. an area with more than 5,000 inhabitants). Finally, I created interaction variables by combining human capital and socio-demographic variables. More specifically, I combined the variable *Immigrant* with *Age*, *Male* and *Highincome*, to verify whether immigrants with a specific profile showed a higher potential to become entrepreneurs or did really become entrepreneurs (see Appendix 1.1 for a more detailed description of the variables used in the first set of analyses).

The survival analysis was conducted by using firm census data from the Basque Country. Based on the conceptual framework discussed in the literature section and following the line of thinking developed in past studies by Gimeno et al. (1997), Schutjens and Wever (2000) and Peña (2004), I organised the independent variables to explain venture survival of foreign- vs. native-owned firms into two groups: firm

internal and firm external variables. Within firm internal variables, those related to the human capital of entrepreneurs, firm resources and experimental adaptation were used. Firm external variables were grouped according to industry sector, location and socio-demographic factors.

Some polychotomous variables were re-coded as 0-1 dummies so they could be tested under a hazard Cox regression analysis. This recoding occurred in the case of *Small, Mobility, Diversific, Construc, Edu, Hotel, Manufact, Retail, Servicesco, Servicespers* and *Urban* variables. The remaining binary variables in my database are *Immigrant* and *Male*. Since we only have data on the gender and age of foreign-entrepreneurs, hypotheses 7a and 7b could only be tested for foreign-owned companies. The opposite case occurred with the variable *Mobility*, which explains a variation from the initial to the final geographical location of the firm; i. e. the number of observations for those foreign-owned firms that had changed location was not large enough to be included in the Cox regression and thus, part of the hypothesis 8b could not be tested for foreign-owned companies. For each of the dummy variables a value of 1 is given to those observations characterised by the name of the variable and 0 is assigned to those that do not fill this condition. For instance, a value of 1 for the variable *Construc* means that the firm operates in the construction industry, whereas 0 means that it does not. In the case of the continuous variables *Regimmi* and *Regunempl*, value 1 is given to those firms located in regions with a higher immigration rate than the average of the Basque Country between years 1991 and 2001, whereas value 0 is given to firms created in regions with an immigration rate lower than the average.

A further analysis of the variables *Small* and *Urban* is required. The variable *Small* explains whether the firm started up with 0 to 2 employees (value = 1) or with more than two (value = 0). I have made this distinction because more than 90 per cent of both native- and foreign-owned firms started with 0 to 2 employees. *Urban* is a dichotomous variable created by modifying another variable which groups annual entries in twenty regions following the official classification of Basque regions suggested by the Basque Statistical Institute. Taking into account that the three largest metropolitan areas of the Basque Country are the county capitals, the three regions where the capital of each province is located were codified as urban areas (value = 1) and the remaining as rural (value = 0). Selecting the three capitals as the most significant urban areas can be rationalised as follows: (i) the highest population density as well as the highest density of foreigners is found in these three cities; (ii) agglomeration economies are mainly concentrated in these areas; and (ii) the majority of companies run by foreigners operate in

retailing and services, industry sectors mainly concentrated in the three capitals.

Additionally, interaction variables linking specific industry sectors to the origin of the entrepreneur were created in order to measure the effect of being a foreign-born entrepreneur and operating in certain industry sectors on venture survival. These variables are the following: *Construc*Immi, Educ*Immi, Hotel*Immi, Manufact*Immi, Retail*Immi, Servicesco*Immi* and *Servicespers*Immi* (see Appendix 1.2 for a more detailed description of these variables).

Finally, the third set of analyses was conducted by using GEM data. The independent variables used to predict the income distribution of self-employed and salaried immigrants correspond to the theoretical framework discussed in the literature and include both individual-related and context-related factors. Some independent variables were coded as binary: human capital and socio-economic variables of the individual, such as *College* (where a value of 1 is equal to a college education), *Gender* (1 for male) and *Self-employed* (a value of 1 for self-employed).

Based on the GNI per capita, The World Bank classifies countries into four groups: low-income, low-middle income, upper-middle income and high-income countries. According to data for 2003, North America, Europe (with the exception of a few Eastern countries which belong to the lower-middle income) and Oceania belong to the latter two groups (The World Bank Group 2006). Due to practical reasons and data limitations, I selected the variable *Continent* to describe the origin of immigrants. Thus, the place of origin of immigrants is described as follows: *African* (a value of 1 for immigrants from Africa), *European* (a value of 1 for European immigrants), *North American* (a value of 1 for North American immigrants) and *South American* (a value of 1 for South Americans). Asian immigrants are left as the base case. Since the Oceanic group is not large enough to be introduced in the analysis, socio-economically advanced countries of my database will be represented by the variables *North American* and *European*. Finally, the quantitative variable AGE stands for the exact age of respondents.

Context-related variables represent industry sectors and location. Industry sectors are *Extractive* (a value of 1 is assigned to people working in extractive industries), *Transforming* (1 for transforming industry sectors), *Business* (1 for business services), and *Consumer* (1 for consumer-oriented services). The variable *Urban* takes a value of 1 when respondents live in urban areas (i.e. towns and cities of more than 5,000 inhabitants). Data on the seventeen regions of Spain were provided by the Spanish Statistical Institute: the variable *RegGDPcap04* represents the GDP per capita of each Spanish region in 2004 (see Appendix 1.3 for a more detailed description of these variables).

5.4   Formulation of hypotheses

As in the previous sections of this chapter, in this section I organise my research hypotheses in three groups: hypotheses numbers 1 to 5 aim to test the effect of the selected variables on the likelihood of self-employment for immigrants versus natives; hypotheses 6 to 10 are formulated to assess the effect of the second set of variables on the survival of foreign-owned versus native-owned ventures; the last set of hypotheses are posed to compare earnings of self-employed versus salaried immigrants.

I build on the propositions stated in the literature review section to formulate the following testable hypotheses on the determinants of immigrants' self-employment:

Hypothesis 1: Both immigrant and native individuals with a diverse and rich human capital endowment (i.e. number of years in Spain, age, education level and business experience) will be more likely to show an intent and to actually start up a firm than their counterparts.

Hypothesis 2: Immigrants are more likely to become entrepreneurs than native individuals. Furthermore, immigrants with a low income (i.e. necessity-driven entrepreneurs) are more prone to start up firms than their counterparts.

Hypothesis 3: Individuals' positive perception of self-efficiency, risk tolerance and opportunities available in the local economy increase the likelihood of firm creation for immigrants and native individuals.

Hypothesis 4: The entrepreneurial culture embedded in the country of origin of immigrants affects their intent and actual switch to become entrepreneurs.

Hypothesis 5: Certain environmental factors (such as living in an urban area, high foreign population density and high unemployment rates) will have a positive influence on individuals' intent and actual switch to become entrepreneurs.

The second set of hypotheses is formulated to analyse the effect of the origin of the entrepreneur on venture survival and to compare the determinants of foreign-owned versus native-owned firms as follows:

Hypothesis 6a: The likelihood of survival of firms created by native entrepreneurs is greater than that of firms created by foreign entrepreneurs.

Hypothesis 6b: The differences in venture survival between immigrant versus local entrepreneurs can be explained by the 'liability of foreignness' problem immigrant entrepreneurs have to face. This is understood as the disadvantage situation they find at running a business in a foreign country,

originated as a result of a lack of knowledge of the host market rules, language skills and experience, and discrimination.

Hypothesis 7a: The probability of survival of firms created by older entrepreneurs is higher than that of firms created by younger entrepreneurs.

Hypothesis 7b: Firms created by male entrepreneurs survive longer than those created by their female counterparts.

Hypothesis 8a: The greater the initial size of the firm, the greater its likelihood of survival.

Hypothesis 8b: The application of experimental adaptation strategies, measured by geographical mobility and industry diversification, has a positive effect on venture survival.

Hypothesis 9a: Firms operating in highly turbulent industry sectors, measured by high entry and exit rates, do not survive as long as firms operating in less turbulent sectors.

Hypothesis 9b: Firms located in urban areas survive longer than those located in rural areas.

Hypothesis 9c: Foreign-owned firms located in an area with a large population of immigrants survive longer than foreign-owned firms located where there are few immigrants.

Hypothesis 9d: Unfavourable economic conditions, measured by unemployment, have a negative effect on venture survival.

The last set of hypotheses evaluates the economic benefit immigrants may obtain from self-employment by comparing the earnings of self-employed and salaried immigrants. I pose these hypotheses as follows:

Hypothesis 10a: Self-employed immigrants are likely to earn more than salaried immigrants.

Hypothesis 10b: Opportunity-driven immigrant entrepreneurs are likely to earn more than their necessity-driven counterparts.

Hypothesis 11a: Factors enriching the human capital of individuals (i.e. education and experience) are positively associated with immigrants' earnings.

Hypothesis 11b: Immigrants from socio-economically advanced regions are likely to earn more than immigrants from less advanced countries.

Hypothesis 12a: Self-employed immigrants operating in transforming industry sectors are likely to earn more than their counterparts.

Hypothesis 12b: Immigrants working in wealthier regions and in metropolitan areas are likely to earn more than their counterparts.

The methodology used to test these hypotheses is explained in the next section and the results of the analyses are described in chapter six.

5.5   Description of the methodology

Different statistical methods were applied to the GEM data and the Basque census data to conduct the empirical study: a Cox regression analysis, a binomial regression analysis, a series of simulations and a chi-square test. A Cox regression and the simulations were used to test the survival of foreign-owned and native-owned firms. I used a binomial logistic regression to analyse the likelihood of immigrants to become entrepreneurs and their likelihood of obtaining a high income (in comparison of that of salaried immigrants). Additionally, a chi-square test was applied test in order to find whether being self-employed is significantly and positively correlated with immigrants' incomes.

First, I applied a binomial logistic regression to test the factors affecting self-employment for immigrants and natives (first set of empirical tests). The binomial logistic regression estimates the probability of an event happening; in this case, the probability of becoming a potential and an actual entrepreneur.

The dependent variable in logistic regression is usually dichotomous; i.e. the dependent variable can take the value 1 or 0, whereas the independent or predictor variables can take any form. In other words, logistic regression makes no assumption about the distribution of the independent variables. They do not have to be normally distributed, linearly related or of equal variance within each group. The relationship between the predictor and response variables is not a linear function; instead, logistic regression generates the coefficients (and its standard errors and significance levels) of a formula to predict a *logit transformation* of the probability of an event happening where p is the probability of an event happening.

$$\text{logit}(\text{p}) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + ... + \beta_k X_k$$

The logit transformation is defined as the logged odds:

$$\text{odds} = \frac{p}{1-p} = \frac{\textit{probability of an event happening}}{\textit{probability of an event not happening}}$$

and

$$\text{logit}(p) = \ln\left[\frac{p}{1-p}\right]$$

The general form of the expression to be estimated in my analysis is the following:

$$\ln(p/q) = \alpha + f(\textit{Human capital and Sociodemographic, Perceptions,}$$
$$\textit{Culture, Enviornment}) + \varepsilon$$

I run two sets of binomial logistic regression analyses for each of the two dependent variables. First, I selected a sample involving both immigrant and native individuals in order to test the effect of the variable *immigrant* as well as that of culture-related and environmental-related factors on the probability of becoming a potential and an actual entrepreneur (research question 1). I ran three different regressions for each of the two dependent variables in order to avoid multi-colinearity problems. Second, I split my samples into two sub-samples: one for immigrants and another one for native individuals, in order to analyse the factors which affect the desire to become self-employed and which affect actually becoming self-employed for the two groups (and thus, answer my research questions 2, 3 and 4). Due to the high number of missing values in the variables of my analyses, the number of observations included in the binomial regression for the sub-sample of immigrants was very small. Hence, to overcome eventual problems with the degrees of freedom of my models, I had to specify them differently (by eliminating some variables) from the models estimated in the previous step. Finally, I compared the results for the sub-samples of immigrants and native individuals.

Thus, the equations for the likelihood of self-employment for the total sample, immigrants and natives, are the following:

Likelihood of self-employment for the total sample:

$$\ln(p/q) = \alpha + f \begin{pmatrix} \beta_1 College + \beta_2 Shutd12 + \beta_3 Busan + \beta_4 Knowent + \\ \beta_5 Age + \beta_6 Age2 + \beta_7 Male + \beta_8 Highincome + \\ \beta_9 Immigrant + \beta_{10} Fearfail + \beta_{11} Opport + \beta_{12} Skills + \\ \beta_{13} Csamer + \beta_{14} Maghreb + \beta_{15} Rafrica + \beta_6 Asia + \\ \beta_{17} Urban + \beta_{18} Pdensity05 + \beta_{19} Unempl + \beta_{20} NewfirmsPC03 \end{pmatrix} + \varepsilon$$

Likelihood of self-employment for immigrants:

$$\ln(p/q) = \alpha + f \begin{pmatrix} \delta_1 Busan + \delta_2 Yr \sin Spain + \delta_3 Male + \delta_4 Highincome + \\ \delta_5 Fearfail + \delta_6 Opport + \delta_7 Skills + \delta_8 Cult \text{ sup} \end{pmatrix} + \varepsilon$$

Likelihood of self-employment for natives:

$$\ln(p/q) = \alpha + f \begin{pmatrix} \omega_1 Busan + \omega_2 Age + \omega_3 Male + \omega_4 Highincome + \\ \omega_5 Fearfail + \omega_6 Opport + \omega_7 Skills + \omega_8 Cult \text{ sup} \end{pmatrix} + \varepsilon$$

Secondly, a Cox regression analysis and a series of simulations were applied on the Basque firms' census data in order to identify the factors

affecting firm survival for the total population of entrepreneurs, for foreigners and for natives (second set of empirical analyses). Cox regression uses the hazard function to estimate the relative risk of failure. The hazard function, $h(t)$, is defined as the potential for death at a particular instant, given that the case has survived until that instant. A general model relating explanatory variables (i.e. the X vector) to the dependent variable (i.e. death of the firm) can be represented in terms of the hazard function where $h_o(t)$ is the baseline hazard function (i.e. when X is o).

$$h(t) = [h_0(t)]e^{(\beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n)}$$

If one divides both sides of the equation by $h_o(t)$, the hazard ratio can be obtained. The hazard ratio indicates the increase or decrease in risk incurred by the effect of a particular explanatory variable, and can be represented as:

$$\ln\left[\frac{h(t)}{h_0(t)}\right] = \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n$$

If the right hand side of this equation is set equal to Y, then the new expression resembles an ordinary regression equation with the general form Y= fX. The parameter > is the estimated coefficient and can be interpreted as the predicted change in the log hazard for a unit increase in the explanatory variable. The general form of the expression to be estimated in my analysis is the following:

$$Y = f(Human\ capital,\ Firm\ resources\ and\ strategies,\ Industry\ sector,\ Location)$$

I applied an initial Cox regression to the total population of Basque sole proprietor firms to assess whether entrepreneurs' citizenship has an effect on the survival of their businesses (research question 5). Since the results of this regression show that being a foreigner had a significant negative effect on firm survival, this led me to a further step. In a second step, I split my initial sample in two sub-samples: one for immigrants and one for natives, in order to find possible differences in the determinants of venture survival (research question 6).

The equations for the likelihood of survival of companies created by all entrepreneurs, for those created only by foreigners and for those started only by natives are the following:

Likelihood of survival for firms created by the total of the entrepreneurs:

$$Y_T = \ln\left[\begin{array}{l} \beta_1\,Immigrant + \beta_2\,Small + \beta_3\,Diversific + \beta_4\,Indusentry + \\ \beta_5\,Indusexit + \beta_6\,Urban \end{array}\right]$$

Likelihood of survival for firms created by foreign entrepreneurs:

$$Y_I = \ln \left[\begin{array}{l} \delta_1 \, Age + \delta_2 \, Male + \delta_3 \, Small + \delta_4 \, Diversific + \delta_5 \, Indusentry + \\ \delta_6 \, Indusexit + \delta_7 \, Urban + \delta_8 \; Re \; gunempl + \delta_9 \; Re \; gimmi \end{array} \right]$$

Likelihood of survival for firms created by native entrepreneurs:

$$Y_L = \ln \left[\begin{array}{l} \phi_1 \, Small + \phi_2 \, Mobility + \phi_3 \, Diversific + \phi_4 \, Indusentry + \\ \phi_5 \, Indusexit + \phi_6 \, Urban + \phi_7 \; Re \; gunempl \end{array} \right]$$

Likelihood of survival for firms created by the total of the entrepreneurs with industry specification:

$$Y_L = \ln \left[\begin{array}{l} \lambda_1 \, Small + \lambda_2 \, Diversific + \lambda_3 \, Construc + \lambda_4 \, Edu + \lambda_5 \, Hotel + \\ \lambda_6 \, Manufact + \lambda_7 \; Re \; tail + \lambda_8 \, Servicesco + \lambda_9 \, Servicespers + \\ \lambda_{10} \, Construc * immi + \lambda_{11} \, Edu * immi + \lambda_{12} \, Hotel * immi + \\ \lambda_{13} \, Manufact * immi + \lambda_{14} Retail * immi + \\ \lambda_{15} \, Servicesco * immi + \lambda_{16} \, Servicespers * immi + \lambda_{17} \, Urban \end{array} \right]$$

Besides, a series of simulations were used to explain the causes of survival differences between native and foreign entrepreneurs (research question 7). These simulations explore the role of entrepreneurs' reaction to key variables, i.e. behaviour, versus the entrepreneurs' endowments in explaining the persistent survival differences between native- and foreign-owned ventures. These simulations will isolate the sources of the observed survival gap and may also allow us to infer some policy conclusions on methods to reduce the survival gap.

The basic idea underlying the simulations is a 'counter factual experiment' in which I carry out the following calculations: (i) firstly, I make native-owned firms act like foreign-owned firms and vice versa. I do this by substituting the estimated beta coefficients from my regression equation of native-owned firms for the estimated coefficients of foreign-owned firms' explanatory variables obtained in the Cox regression analysis and vice versa. Next, I multiply these transformed coefficients by the respective mean values of the appropriate variables for the native and foreign groups. Then I maintain the original beta coefficients and mean values for the relevant variables to predict the native- and foreign-owned firm survival rate. Finally, I compare the latter predictions to the counterfactual ones to see if the survival gaps are reduced or increased. If the gaps are reduced, then I can infer that foreign adaptation in the form of mimicking native behaviour will also reduce foreign-owned firm mortality. (ii) Secondly, I give native-owned firms the endowments of foreign-owned and vice versa, by substituting the mean values of the main explanatory variables of native-owned and vice versa. As in the previous experiment, I multiply these transformed mean values by the respective coefficients of the appropriate variables for the native and foreign groups. Once again, I maintain the original mean values and Cox

regression coefficients for the relevant variables to predict the native- and foreign-owned firm survival rate. Finally, I compare the latter predictions to the counterfactual ones to see if the survival gaps are reduced or increased. If the gaps are reduced, then I can infer that foreign adaptation in the form of mimicking native endowments will also reduce foreign-owned firm mortality.

I have carried out two different analyses. In the first one, I only included the significant variables (*Small*, *Diversif* and *Construc*), whereas in the second one all the variables of the industry specification model – namely, *Small*, *Diversif*, *Construc*, *Edu*, *Hotel*, *Manufact*, *Retail*, *Servicesco*, *Servicespers* and *Urban* – were included. (See the results of correlations matrixes and Cox regression analyses in Appendix 3).

To sum up, these simulations will allow me to find out whether the observed gap in the survival of foreign- versus native-owned firms is due to differences in the initial endowments or due to differences in their behaviour, understood as the reaction to the ability of the entrepreneur to run a business as well as to firm-external effects such as macroeconomic conditions, customers' attitude towards them, etc. Since my sample only involves sole-proprietor firms and thus the initial resources are supposed to be more similar than if all the legal forms were included, I expect that the behaviour effect will be more significant than the endowment effect.

Finally, two statistical methods were applied on GEM data to analyse the economic benefits of self-employment. In a first step, I selected a sample involving the whole population of immigrants and applied a chi-square test. Pearson's chi-square for independence is used to assess whether paired observations on two variables, expressed in a contingency table are independent of each other. In this case, I aimed to find whether being self-employed is significantly and positively correlated with immigrants' income (research question 8). A preliminary test showed that there were significant differences between the earnings of self-employed versus salaried immigrants and that led me to conduct the second analysis.

In a second step, I split my initial sample into two sub-samples (one for self-employed and the other one for salaried immigrants), and ran a binary logistic regression analysis on both sub-samples in order to analyse and compare the earning-determinants for self-employed and salaried immigrants (research question 9). The binary logistic regression method estimates the probability of an event happening, in this case, the probability of earnings being above average for self-employed and salaried immigrants.

The general form of the expression to be estimated in this analysis is the following:

$$\ln(p/q) = \alpha + f(\textit{Human capital and Sociodemographic, Motivation, Industry sector, Enviornment}) + \varepsilon$$

The equations for the probability of self-employed and salaried immigrants to obtain a high income are the following:

Immigrants' likelihood to gain above-average earnings for the self-employed:

$$\ln(p/q) = \alpha + f \begin{pmatrix} \beta_1 College + \beta_2 Age + \beta_3 Gender + \beta_4 African + \beta_5 European + \\ \beta_6 Namerican + \beta_7 Samerican + \beta_8 TEAmot + \beta_9 Extractive + \\ \beta_{10} Transforming + \beta_{11} BusnessServ + \beta_{12} Consumeroriented + \\ \beta_{13} Urban + \beta_{14} \text{ Re } gDGPCap04 \end{pmatrix} + \varepsilon$$

Table 16   *Correlation matrix for potential entrepreneurs: Total sample*

		1	2	3	4	5	6	7	8	9	10
1	College										
2	Shutd12	0.007									
3	Busang	.025**	.068**								
4	Fearfail	-.046**	-.027**	-.021**							
5	Opport	.072**	-0.004	.024**	-.066**						
6	Skills	.129**	.073**	.060**	-.226**	.128**					
7	Knowentr	.114**	.023**	.113**	-.069**	.146**	.229**				
8	Age	-.132**	0.009	-0.006	0.005	-.037**	-.026**	-.098**			
9	Age 2	-.138**	0.006	-0.006	0.001	-.036**	-.033**	-.100**	.989**		
10	Male	.019*	.024**	.015*	-.040**	.025**	.022**	.052**	-.035**	-.036**	
11	Highincome	.257**	-0.003	.041**	-.065**	.075**	.080**	.079**	-0.005	-0.01	.030**
12	Urban	0.013	0.011	0.005	-.018*	0.009	-0.005	-0.007	-.017*	-0.014	-.027**
13	Pdensity05	.055**	-.016*	0.006	-.030**	.022*	0.011	-0.003	0.014	.020*	-.040**
14	Unempl04-05	-.073**	0.007	-.016*	.016*	-.020*	0.001	-0.005	-.039**	-.039**	-0.009
15	NewfirmsPC03	-0.003	-0.003	.016*	-.021**	.029**	-0.011	0.003	0.006	0.001	.030**
16	Immi*College	.131**	-0.008	0.009	-.026**	.032**	.063**	.030**	-.048**	-.050**	-.034**
17	Immi*Age	.025**	-0.006	.019*	-.025**	.031**	.052**	.016*	-.021**	-.025**	-.063**
18	Immi*Male	.030**	-0.009	.024**	-.025**	.031**	.045**	.032**	-.037**	-.038**	.087**
19	Immi*Highincome	.035**	-0.007	0.004	-0.002	.020*	.035**	0.009	-.019*	-.021**	-.019*
20	Immigrant	.023**	-0.009	0.013	-.030**	.034**	.050**	.016*	-.061**	-.063**	-.067**
21	Csamer	0.012	-0.012	.024**	-.033**	.051**	.047**	.017*	-.060**	-.061**	-.061**
22	Maghreb	-0.002	-0.003	-0.004	-0.005	-0.001	-0.001	0.008	0.006	0.007	-0.007
23	Safrica	0.013	-0.002	-0.002	-0.011	0.002	0.014	0.013	-.018*	-.017*	.019*
24	Asia	0.013	-0.002	-0.002	-0.004	0.01	0.003	0.005	-0.003	-0.004	-0.009

Immigrants' likelihood to gain above-average earnings for the self-employed:

$$\ln(p/q) = \alpha + f \left(\begin{array}{l} \beta_1\,College + \beta_2\,Age + \beta_3\,Gender + \beta_4\,African + \\ \beta_5\,Europeam + \beta_6\,Namerican + \beta_7\,Samerican + \\ \beta_{13}\,Urban + \beta_{14}\,\mathrm{Re}\ gDGPCap04 \end{array} \right) + \varepsilon$$

To conclude with this chapter, the next section shows the results of Pearson correlation analyses. The findings of the empirical analyses are presented in the following chapter.

5.6   Correlation analyses

Before applying the regressions, Pearson correlation analyses were run. These analyses aim to find whether there is multi-colinearity problems among the independent variables included in each model. The correlation analyses conducted for each set of empirical tests are presented separately in the following pages.

11	12	13	14	15	16	17	18	19	20	21	22	23
.017*												
.062**	.212**											
-.069**	0.011	-.349**										
0.011	.062**	.385**	-.276**									
0.002	0.003	.026**	-0.012	-0.004								
-0.017	0.012	.031**	-.017*	-.015*	.679**							
-0.001	0.013	.030**	-.018*	0.013	.429**	.470**						
.120**	0.009	0.012	-0.001	-0.004	.437**	.456**	.285**					
-.019*	0.013	.029**	-.018*	-0.009	.704**	.956**	.486**	.457**				
-.022*	0.013	.039**	-.023**	-0.003	.513**	.701**	.301**	.309**	.762**			
0.004	0.014	0.003	0.005	-0.005	.108**	.224**	.131**	.124**	.194**	-0.004		
-0.012	0.008	0	0.003	-0.004	.127**	.083**	.230**	-0.001	.112**	-0.002	-0	
0.002	-0.001	0.01	-0.001	0.007	.127**	.114**	.045**	.071**	.112**	-0.002	-0	0

** Correlation is significant at 0.01 level
* Correlation is significant at 0.05 level

Tables 16 to 21 show the results of the correlations applied to test the explanatory variables used to explain the probability of immigrants and natives to become self-employed. The correlation analysis run for the total sample of individuals (Tables 16 and 19) show that there is colinearity between the variables *Immigrant* and *Csamer* (the variable which describes people coming from Central and South American countries). The colinearity is explained by the fact that 90 per cent of the sample used to assess the desire of immigrants to become entrepreneurs and more than 55 per cent of the sample used to test their likelihood to become entrepreneurs came from Central or South American countries. Because of this problem, I run two different models for each sample: one of them includes the variable *Immigrant* and the other one uses the variable *Csamer* as well as the rest of variables explaining the origin of immigrants. A third model with some interaction variables created by linking the variable *Immigrant* to some human capital and socio-demographic variables is also included. The remaining models of the first set of empirical analyses do not present significantly high colinearity problems.

The second set of empirical tests aims to compare the survival of foreign-owned and native-owned firms. Tables 22 to 27 show the results of correlation analyses corresponding to this set of analyses. Since significantly high colinearity problems were found among the variables *Urban*, *RegUnempl* (variable which describes regional unemployment rates) and *RegImmi* (variable which describes regional immigration rates), three different Cox regressions were run for each model.

Table 17 *Correlation matrix for potential entrepreneurs: Immigrants*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 College													
2 Shutd12	.123												
3 Busang	.060	-.031											
4 Knowentr	.000	-.102	.274*										
5 YrsinSPain	.139	.052	.001	-.014									
6 Male	.177	.152	.031	.249*	-.059								
7 Highincome	.124	-.061	.246*	.123	-.058	.118							
8 Fearfail	-.132	-.065	.006	-.177	.021	-.331**	-.148						
9 Opport	-.081	.098	-.067	.044	.004	.091	-.006	-.410**					
10 Skills	.154	.062	.128	-.127	.231*	.092	.220	-.081	.190				
11 Cultsup	.056	-.153	-.005	.117	-.198	.060	-.127	-.103	.150	-.074			
12 Urban	.233*	.053	.094	.073	.023	.150	.034	-.051	.041	.033	-.095		
13 Foreignpop05	-.081	.106	.061	-.070	-.052	-.075	-.195	.004	.275	.079	.074	.146	
14 NewfirmsPC03	-.079	.202	-.133	-.022	-.074	-.009	-.010	.129	.356*	.173	-.097	.099	.641**

** Correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

Table 18 *Correlation matrix for potential entrepreneurs: Natives*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 College														
2 Shutd12	.011													
3 Busang	.049	.029												
4 Knowentr	.079*	-.012	.115**											
5 Age	-.059	-.014	.054	-.126**										
6 Male	.063	.033	.048	.075*	-.059									
7 Highincome	.204**	.018	.081*	.095*	.035	.132**								
8 Fearfail	.002	-.026	-.021	-.075*	-.058	.017	-.022							
9 Opport	-.020	.048	.032	.024	.040	.072	.090	-.028						
10 Skills	.070	.052	.031	.068	.086*	.042	.046	-.185**	-.038					
11 Cultsup	-.052	.023	.023	.078	-.049	.048	-.003	.047	.071	-.035				
12 Urban	.018	.021	.018	.000	-.077*	.001	.011	.043	-.004	-.038	.020			
13 Pdensity05	-.077	-.004	-.048	-.032	.085*	.064	-.013	.037	.067	-.042	-.027	-.032		
14 Unempl04to05	.102**	-.014	.031	.017	-.091*	-.030	.077	-.055	-.038	-.034	-.005	.072	-.520**	
15 NewfirmsPC03	-.064	.015	-.002	.002	.045	-.012	-.086*	.084*	-.011	.059	.021	.037	.088*	-.754**

** Correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

Table 19 *Correlation matrix for actual entrepreneurs: Total sample*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 College																							
2 Shutd12	.02*																						
3 Busang	.04**	.09**																					
4 Fearfail	-.05**	-.02**	-.03**																				
5 Opport	.07**	.010	.04**	-.07**																			
6 Skills	.13**	.07**	.08**	-.26**	.13**																		
7 Knowentr	.12**	.04**	.12**	-.09**	.15**	.24**																	
8 Age	-.13**	.01	-.01	.01	-.04**	-.03**	-.20**																
9 Age 2	-.13**	.01	-.01	.01	-.04**	-.04**	-.10**	.99**															
10 Male	.02**	.03**	.03**	-.05**	.03**	.04**	.06**	-.03**	-.04**														
11 Highincome	.26**	.01	.05**	-.08**	.08**	.11**	.09**	-.01	-.01	.04**													
12 Urban	-.02*	-.01	-.01	.02*	.01	-.01	-.02*	.01	.01	.01	-.02*												
13 Pdensity05	-.01	-.01	.02	-.01	.03	-.01	.01	.01	.01	.01	.01	.21**											
14 Unempl04-05	-.02*	-.01	-.01	.02*	-.03**	-.01	-.02*	.04**	.03**	-.04**	-.04**	.01	-.35**										
15 NewfirmsPC03	-.01	-.01	.01*	-.02**	.01	-.01	.01	-.03**	-.03**	.09**	-.01	.06**	.38***	-.28**									
16 Immi*College	.13**	-.01	.022*	-.03**	.03**	.06**	.03**	-.04**	-.05**	-.03**	.07	-.01	-.01	-.01*	-.03**								
17 Immi*Age	.03**	-.04	.03**	-.02**	.03**	.05**	.02*	-.02**	-.02	-.06**	-.01*	-.01	-.01	-.01*	-.06**	.70**							
18 Immi*Male	.03**	.01	.03**	-.03**	.03**	.05**	.03**	-.04**	-.04**	.09**	.01	-.01	.01	-.02**	-.02*	.46**	.50**						
19 Immi*Highincome	.04**	-.01	.02**	-.01	.02*	.04**	.01*	-.02*	-.02**	-.015*	.12**	-.01	-.01	-.01	-.03**	.49**	.49**	.32**					
20 Immigrant	.03**	-.01	.03**	-.03**	.04**	.05**	.02**	-.06**	-.06**	-.06**	-.02*	-.01	-.01	-.02*	-.06**	.73**	.96**	.53**	.48**				
21 Csamer	.02*	-.01	.03**	-.03**	.04**	.05**	.02**	-.06**	-.06**	-.05**	-.02**	-.01	.01	-.02*	-.04**	.53**	.70**	.34**	.31**	.76**			
22 Maghreb	-.01	-.01	.01	-.01	.01	.01	.01*	.01	.01	.01	.01	.01	-.01	.01	-.02**	.11**	.22**	.18**	.15**	.20**	-.01**		
23 Safrica	.01	-.01	-.01	-.01	.02*	.02*	.01	-.02**	-.02**	.01	-.01	.01	.01	-.01	-.01	.10**	.10**	.17**	.04**	.13**	-.01	-.01	
24 Asia	.02*	-.01	.01	.01	.02*	.013*	.01	-.01	-.01	-.02*	.01	-.01	.01	-.01	-.01	.12**	.14**	.02**	.09**	.14**	-.01	-.01	.01

** Correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

Table 20 *Correlation matrix for actual entrepreneurs: Immigrants*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 College													
2 Shutd12	-.139												
3 Busang	.027	.093											
4 Knowentr	.155	.040	.009										
5 YrsinSpain	.217*	-.031	-.025	.039									
6 Male	-.006	.069	.079	.084	.163								
7 Highincome	.278*	-.142	-.021	-.019	.289*	.010							
8 Fearfail	.030	-.109	-.252*	-.147	-.163	-.172	.154						
9 Opport	.008	.178	.161	.119	-.253*	-.043	.034	.149					
10 Skills	.162	.020	.046	.120	.116	.105	.082	-.175	.137				
11 Cultsup	-.114	.070	.292	.225	-.008	-.045	-.116	.114	.031	a			
12 Urban	-.127	.072	-.014	-.061	-.092	-.013	-.139	-.062	.046	-.043	.030		
13 Foreignpop05	.046	-.113	.091	.026	-.043	.099	.048	.101	.143	-.102	-.006	.189	
14 NewfirmsPC03	-.202	.075	.046	-.036	-.098	.160	.029	-.171	-.046	-.157	.016	.164	.275**

** Correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

a Not able to calculate because one of the variables is constant

Table 21 *Correlation matrix for actual entrepreneurs: Natives*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 College														
2 Shutd12	.044*													
3 Busang	.083**	.165**												
4 Knowentr	.094**	.078**	.126**											
5 Age	-.074**	-.029	-.023	-.089**										
6 Male	.008	.047*	.082**	.011	-.022									
7 Highincome	.243**	.010	.067**	.027	.032	.044								
8 Fearfail	-.013	.042*	.058**	-.011	-.032	-.009	-.040							
9 Opport	.042	.062**	.068**	.153**	-.059**	.046*	.087**	-.031						
10 Skills	.048*	-.023	-.001	.097**	-.010	.008	.036	-.147**	.074**					
11 Cultsup	-.015	.049	.055	.072*	-.031	.006	.015	.055	.140**	.062*				
12 Urban	-.020	-.013	.033	.006	.018	.020	.010	.002	.012	.006	.022			
13 Popden05	.003	.008	.023	.000	.029	-.038	-.002	-.008	.034	.027	.028	.217**		
14 Unempl04-05	-.004	-.024	.025	-.004	-.073**	.022	-.027	.035	.006	-.014	.034	-.002	-.469**	
15 NewfirmsPC03	.109**	.039	.050*	.030	.041*	-.038	.068**	-.030	.010	-.026	.007	.020	.315**	-.328**

** Correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

Table 22 *Correlation matrix: Total sample*

		1	2	3	4	5
1	Small	-.024**				
2	Diversific	-.009**	.002			
3	Indusentry	-.033**	.019**	-.047**		
4	Indusexit	.011**	-.036**	-.024**	-.147**	
5	Urban	.001	.006*	-.001	-.005	.014**

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Table 23 *Correlation matrix: Foreign-owned firms*

		Age	1	2	3	4	5	6	7
1	Gender	-.090**							
2	Small	-.047	.029						
3	Diversific	.053	-.051	.042*					
4	Indusentry	-.086*	-.125**	.036	-.027				
5	Indusexit	.017	-.005	-.042	-.017	-.002			
6	Urban	-.129**	.004	-.030	-.024	-.010	.030		
7	Regunempl	-.036	.044	-.003	-.034	-.033	-.017	.565**	1
8	Regimmi	-.046	.028	-.020	-.029	.000	.027	.804**	.693**

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Table 24 *Correlation matrix: Native-owned firms*

		1	2	3	4	5	6
1	Diversific	.000					
2	Mobility	.009**	.309**				
3	Indusentry	.018**	-.047**	-.015**			
4	Indusexit	-.036**	-.024**	-.006	-.148**		
5	Urban	.007*	-.001	-.005	-.005	.014**	
6	Regunempl	.005	.005	-.019**	-.011**	.011**	.596**

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Table 25 *Correlation matrix: Total sample with industry specification*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Small	-.024**																
2 Diversific	-.009**	.002															
3 Construc	-.001	.049**	.018**														
4 Edu	.070**	-.015**	.007*	-.066**													
5 Hotel	.012**	-.149**	-.025**	-.163**	-.057**												
6 Manufact	-.018**	-.056***	.046**	-.103**	-.036**	-.089**											
7 Retail	.020**	.026**	.028**	-.254**	-.090**	-.221**	-.139**										
8 Servicesco	-.015**	.058**	.003	-.199**	-.070**	-.173**	-.109**	-.270**									
9 Servicespers	.002	-.010***	-.003	-.098**	-.034**	-.085**	-.053**	-.132**	-.104**								
10 Construc*Immi	.392**	.005	-.002	.132**	-.009**	-.022**	-.014**	-.034**	-.026**	-.013**							
11 Edu*Immi	.303**	-.015**	-.001	-.019**	.291**	-.017**	-.011**	-.026**	-.020**	-.010**	-.003						
12 Hotel*Immi	.384**	-.072**	-.010**	-.024**	-.009**	.149**	-.013**	-.033**	-.026**	-.013**	-.003	-.003					
13 Manufact*Immi	.158**	-.004	.004	-.010**	-.004	-.009**	.097**	-.014**	-.011**	-.005	-.001	-.001	-.001				
14 Retail*Immi	.558**	.009**	-.002	-.035**	-.012**	-.031**	-.019**	.139**	-.038**	-.018**	-.005	-.004	-.005	-.002			
15 Servicesco*Immi	.365**	.006*	-.005	-.023**	-.008**	-.020**	-.013**	-.031**	.116**	-.012**	-.003	-.002	-.003	-.001	-.004		
16 Servicespers*Immi	.223**	.003	.000	-.014**	-.005	-.012**	-.008**	-.019**	-.015**	.145**	-.002	-.001	-.002	-.001	-.003	-.002	
17 Urban	.001	.006*	-.001	-.032**	-.002	-.005	-.076**	.015**	.070**	.000	-.012**	-.008**	.010**	-.005	.004	.010**	.007*

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Table 26 *Correlation matrix for simulations: Native-owned firms*

		1	2	3	4	5	6	7	8	9
1	Diversific	.000								
2	Construc	.048**	.018**							
3	Edu	-.012**	.007**	-.064**						
4	Hotel	-.143**	-.025**	-.163**	-.055**					
5	Manufact	-.058**	.045**	-.103**	-.035**	-.090**				
6	Retail	.023**	.028**	-.253**	-.086**	-.220**	-.139**			
7	Servicesco	.058**	.003	-.200**	-.068**	-.173**	-.110**	-.269**		
8	Servicespers	-.012**	-.003	-.098**	-.033**	-.085**	-.054**	-.132**	-.104**	
9	Urban	.007*	-.001	-.030**	.000	-.007*	-.077**	.015**	.070**	-.001

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Table 27 *Correlation matrix for simulations: Foreign-owned firms*

		1	2	3	4	5	6	7	8	9
1	Diversific	.042*								
2	Construc	.084**	.011							
3	Edu	-.044*	.019	-.138**						
4	Hotel	-.359**	-.055**	-.181**	-.135**					
5	Manufact	-.001	.042*	-.069**	-.052**	-.068**				
6	Retail	.142**	.026	-.292**	-.218**	-.286**	-.109**			
7	Servicesco	.085**	-.016	-.170**	-.127**	-.167**	-.064**	-.269**		
8	Servicespers	.045*	.013	-.099**	-.074**	-.097**	-.037	-.157**	-.091**	
9	Urban	-.030	-.024	-.092**	-.057**	.072**	-.038	.029	.070**	.049*

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Finally, I conducted a third set of empirical tests aiming at analysing the economic benefits of self-employment for entrepreneur and salaried immigrants. I run Pearson correlation analyses for each group (one for the self-employed and the other one for the salaried) but did not find any multi-colinearity problems among the independent variables of each analysis. The results of these analyses are shown in Tables 28 and 29. Thus, all the variables were included in the same model. The existence of different models responds to the existence of interaction variables. The results of the empirical analyses are shown in the next chapter.

Table 28 *Correlation matrix: Self-employed immigrants*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 College													
2 Age	-.152**												
3 Gender	.030	-.043											
4 TEAmot	-.020	-.037	.057										
5 African	.050	.003	-.035	-.051									
6 European	.083	-.027	.047	.129*	-.153**								
7 North American	-.062	.042	-.020	-.099	-.054	-.126**							
8 South American	-.106*	.015	-.028	-.050	-.308**	-.717**	-.253**						
9 Extractive	-.050	.056	-.128**	.006	-.033	-.035	.064	.033					
10 Transforming	-.020	.003	.056	-.018	-.011	-.039	.023	.021	-.050				
11 Businesserv	.044	.060	.140**	.037	-.029	-.044	.035	.055	-.046	-.138**			
12 Consumeroriented	-.025	-.071	-.037	-.002	.008	.050	-.083	-.063	-.068	-.204**	-.189**		
13 Urban	-.020	.045	.058	.087	.018	.016	-.106*	.035	.072	.100*	.047	-.041	
14 RegGDPcap04	.130**	.029	.025	-.035	-.013	.042	-.014	-.005	.022	-.025	-.080	-.094	-.053

** Correlation is significant at the 0.01 level (1 –tailed)

* Correlation is significant at the 0.05 level (1 –tailed)

Table 29   *Correlation matrix: Salaried immigrants*

		1	2	3	4	5	6	7	8
1	College								
2	Age	-.178**							
3	Gender	.052	-.008						
4	African	-.053	.032	-.011					
5	European	.005	-.043	.002	-.141**				
6	North American	.043	-.038	-.019	-.029	-.074*			
7	South American	.021	.042	.028	-.319**	-.817**	-.167**		
8	Urban	-.007	.031	-.058	-.002	.003	.012	-.013	
9	RegGDPca04	.070*	.012	.083**	.025	-.039	-.016	.028	.112**

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

6 Results of the empirical analysis

6.1 Immigrants' likelihood of self-employment

My first set of regressions aims to test the factors affecting self-employment for immigrants and natives. This analysis was conducted in two steps: in the first binomial regression, I assess whether being immigrant has any effect on the likelihood of self-employment. The positive answer obtained in the first regression led me to compare the effect of a set of explanatory variables on the probability of immigrants and natives becoming self-employed.

The results of my first binomial regression analysis suggest that the place of origin affects not only the intent, but also the actual switch of an individual to become an entrepreneur. I found that immigrants are more likely to show intent to become entrepreneurs; nevertheless, native individuals are more likely to really start up a new venture. This analysis provides answers to research questions 1, 2 and 3. The second set of analyses is carried out to answer research question 4. Main findings for each question are discussed next.

> (1) *Does the origin of an individual (i.e. immigrant versus native) affect the likelihood of being a potential entrepreneur? And similarly, does the origin of an individual (i.e. immigrant versus native) affect the likelihood of being an actual entrepreneur?*

I conducted my first test on the whole sample of immigrants and native individuals. As shown in Table 30, I found that immigrants are more likely to show intent to become entrepreneurs than native individuals. This finding confirms the first part of hypothesis 2 and previous findings by Hammarstedt (2001), Schuetze (2005) and Levie (2007). Furthermore, the significant coefficient of the interaction variable between the age and the origin of individuals suggests that mature immigrants' probability to intend to start up a firm in a period of three years is higher than that of young immigrants. Interestingly, the binomial regression analysis for the actual entrepreneurs' model shows the opposite results, i.e. immigrants are less likely to start up a firm than native

Table 30 *Binomial regression analysis: Total sample*

| | Potential entrepreneurs | | | | | | Actual entrepreneurs | | | | | |
| | Model 1 | | Model 2 | | Model 3 | | Model 1 | | Model 2 | | Model 3 | |
	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Individual-related factors												
Human capital and socio-demographic												
College	0.32†	0.72	0.32†	0.73	0.33†	0.72	0.09	1.09	0.11	1.11	0.09	1.09
Shutd12	-0.28	1.32	0.3	1.35	0.27	1.31	0.37*	0.69	0.37*	0.69	0.38*	0.68
Busan	0.35	0.7	0.37	0.69	0.3	0.74	0.91†	0.40	0.91†	0.40	0.91†	0.40
Knowent	1.16†	0.31	1.16†	0.31	1.17†	0.31	0.29†	0.75	0.29†	0.29†	0.75	
Age	-0.09†	0.92	0.09†	0.91	0.09†	0.91	0.06†	1.06	0.05†	1.06	0.06†	1.06
Age2	0.00**	1.00	0.00†	1.00	0.00**	1.00	0.01†	1.00	0.01†	1.00	0.01†	1.00
Male	0.21*	0.81	0.24**	0.79	0.22**	0.8	0.38†	0.68	0.37†	0.38†	0.69	
Highincome	-0.37†	1.44	0.33†	1.39	0.36†	1.43	0.47†	0.63	0.48†	0.62	0.46†	0.63
Immigrant	1.14†	0.32	-		-		0.31*	0.74				
Imii*College	-		0.09	0.91	-				0.25	0.78	-	
Immi*Age	-		0.04†	1.04	-				0.01	1.00	-	
Immi*Male	-		0.49	1.64	-				0.29	0.75	-	
Immi*Highincome	-		0.98	2.68	-				0.18	1.19	-	
Perceptual												
Fearfail	-0.38†	1.46	0.38†	1.47	-0.37†	1.45	0.91†	2.48	0.91†	2.48	0.91†	2.48
Opport	0.64†	0.53	0.64†	0.53	0.63†	0.53	0.1	0.90	0.11	0.90	0.1	0.90
Skills	1.35†	0.26	1.36†	0.26	1.35†	0.26	-2.16†	0.11	-2.16†	0.12	-2.17†	0.11

Context-related factors

	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Culture-related: Origin												
Csamer	-	-	-	-	1.54†	0.21	-	-	-	-	0.18	0.83
Maghreb	-	-	-	-	-18.52	0.018	-	-	-	-	-1.27	0.28
Rafrica	-	-	-	-	0.8	0.45	-	-	-	-	-1.24	0.29
Asia	-	-	-	-	-19.75	0.03	-	-	-	-	-1.62	0.20
Environmental: Destiny												
Urban	0.21	0.81	0.23	0.8	0.2	0.82	0.01	1.01	0.01	1.01	-	-
Pdensity05	0.01	1.00	0.01	1.00	0.01	1.00	0.01	1.00	0.01	1.00	-	-
Unempl04-05	-0.04*	0.96	-0.04*	0.96	-0.04**	0.96	0.02	1.02	0.02	1.02	-	-
Newfirmspc03	0.13*	1.14	0.14*	1.15	0.14**	1.15	0.07	1.07	0.07	1.07	-	-
Constant	1.54*	4.68	-0.83	0.44	-35.54	0	0.89*	0.41	0.82	0.44	3.11*	22.36
N	8761		8761		8761		9176		9176		9176	
-2 log-likelihood	2520.41		2518.47		2509.91		6232.60		6228.67		6229.03	
Nagelkerke's R	0.19		0.19		0.19		0.27		0.27		0.27	
Chi-square	495.39†		497.33†		505.89†		1558.18†		1562.11†		1561.75†	

† Significant at the 0.01 level (1 –tailed)
** Significant at the 0.05 level (1 –tailed)
* Significant at the 0.1 level (1 –tailed)

individuals. Similarly, I found other contrasting results between the potential and actual entrepreneurs' models. For instance, male individuals who know entrepreneurs are more likely to show intent, but less likely to start up a new business. Moreover, while a U-shape relationship exists between individuals' age and the intent to create a new firm, an inverse U-shape relationship prevails between individual's age and firm creation in the actual entrepreneurs' model.

The negative sign of the variable *Highincome* shown in both models indicates that obtaining a low income increases the probability of individuals to intent and to switch to start up a firm and thus, provides support for the disadvantage hypothesis (Light 1972, 1979).

All the perceptual variables were significant in the potential entrepreneurs' models. Individuals who perceive good business opportunities, no fear for business failure and have a high self-confidence in themselves are more likely to show intent to start up firms.

Interestingly, the sign of coefficients for the last two variables are the opposite again in the actual entrepreneurs' models. These findings suggest that individuals who are more likely to create firms are not as optimistic as the individuals who show only intent to start up a new venture.

In sum, my results show that while immigrant individuals are more likely to show intent to start up a new firm than their native counterparts, the latter are more likely to get actually involved in entrepreneurial activities. The *liability of foreignness* faced by immigrants during ex-ante period, such as additional barriers associated with the difficulties in raising funds, unfamiliarity with the market system, complex paperwork requirements, as well as a late recognition of an insufficient ability to start up and run a new firm, may deter the entrepreneur to start up a new firm and thus explain this gap.

> (2)   Are there differences in the intent and the actual switch to become entrepreneurs among immigrants by place of origin?

Ethnic and immigrant entrepreneurship literature suggests that the origin of immigrants, the ethnic group they belong to, their cultural tradition of self-employment, etc., explain the high propensity of certain groups for self-employment (Light 1972; Aldrich and Waldinger 1990; Butler and Herring 1991; Clark and Drinkwater 1998; Hammarstedt 2001; Constant et al. 2003; Levie 2007). Moreover, cross-country differences affect entrepreneurial cognition and venture creation both inside and outside the home country (Busenitz and Lau 1996; Mitchell et al. 2000; Mitchell et al. 2002a; Uhlaner and Thurik 2003). In other words, people who migrate from a country characterised by a highly

entrepreneurial culture to another country would be more likely to create firms in the host country than those who migrate from less entrepreneurial areas.

As shown in Table 31, the third model exhibits that the intention of immigrants from Central and South America to become self-employed is higher than that of other foreigners. Nevertheless, I found no significant evidence to support that the propensity to start up firms varies across immigrant groups. This finding could suggest the existence of some difficulties in the fulfilment of the desire to start an entrepreneurial process. In order to refine my analysis, the variable cultural support, an index suggested by the GEM project to measure the impact of national and regional entrepreneurial culture on the entrepreneurial activity, was included in my second set of analyses to predict the probability that immigrants and natives would start firms. This variable was only significant for the probability of native individuals to become actual entrepreneurs, and, thus, my findings do not support hypothesis 4 concerning the effect of the national entrepreneurial culture on the likelihood of immigrants for becoming self-employed.

Table 31 *Binomial regression analysis: Immigrants and natives*

	Potential entrepreneurs				Actual entrepreneurs			
	Immigrants		Natives		Immigrants		Natives	
	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Individual-related factors								
Human capital and socio-demographic								
Busan	10.47†	0	0.46	0.63	-1.49**	0.23	-1.00†	0.37
Age	-	-	-0.02†	0.98	-	-	-0.01**	0.99
Years in Spain	-0.27**	0.76	-	-	0.03	1.03	-	-
Male	3.14†	0.04	0.25	0.78	-0.22	0.80	-0.36†	0.70
High Income	-5.49**	241.93	-0.37*	1.44	-0.75	0.47	-0.51†	0.60
Perceptual factors								
Fearfail	-1.68	5.39	-0.22	1.25	0.98*	2.66	0.94†	2.57
Opport	1.55	0.21	0.47†	0.63	-0.56	0.57	-0.04	0.96
Skills	-2.47**	11.82	1.67†	0.19	-20.56	0.00	-2.16†	0.12
Cultsup	0.14	1.15	0.11	1.12	-0.25	0.78	-0.10**	0.91
Constant	5.16	174.32	-1.37**	0.25	1.17	3.22	0.34	1.41
N	85		3709		120		4458	
-2 log-likelihood	36.05		1061.48		96.23		3085.37	
Nagelkerke's R	0.55		0.11		0.45		0.27	
Chi-square	29.45†		111.20†		44.93†		746.40†	

† Significant at the 0.01 level (1 –tailed)
** Significant at the 0.05 level (1 –tailed)
* Significant at the 0.1 level (1 –tailed)

> (3)   *Does the intra-regional context of the host economy affect the intent or the actual switch of individuals to become entrepreneurs?*

Wagner and Sternberg (2004) state that, to date, most empirical studies on entrepreneurship have been carried out at the national level, ignoring the inter-regional differences within a particular country. Further studies are needed in order to gain a better understanding of the effect of context-related variables at a regional level. Following the recommendation by Wagner and Sternberg (2004) I examined the influence of regional environmental variables on the intention of firm creation.

Environmental factors in the host regions can either boost venture creation, or produce the opposite effect. My results show that the intention of individuals to become entrepreneurs increases in regions where there is a higher density of new firms per capita and a lower unemployment rate. These findings partially support hypothesis 5 for potential entrepreneurs and confirm previous findings by Fotopoulos and Spence (2000), Morales and Peña (2003), Wagner and Sternberg (2004) and Van Stel et al. (2006). It is not surprising to find a larger number of individuals intending to start businesses in locations where a high entrepreneurial activity prevails. The negative effect of unemployment on the intent to start up a firm may be explained by Reynolds' argument that higher unemployment rates are associated with lower market demand, which, in turn, prevents entrepreneurs from creating new businesses. Or, conversely, being an entrepreneur in a wealthy local economy with low unemployment rates can be perceived as a more promising career choice. None of the environmental variables was found to be significant for the actual entrepreneurs' models.

> (4)   *Do the determinants for immigrants' self-employment differ from those of native individuals?*

I split my initial sample in two sub-samples to analyse and compare the determinants of the intent and the switch to actual firm creation between immigrants and native individuals. At this stage of my study, I had to specify the models differently from the original model, since I ended up with a lower number of observations for each sub-sample. I thus had to omit some explanatory variables examined in the models tested in the first part of my analysis.

Table 31 shows that the explanatory power of the models applied to the two sub-samples, immigrants and native individuals, are clearly different. The Nagelkerke R-square is larger for the regressions run for immigrants in both potential and actual entrepreneurs' models; this

seems logical considering the lower number of observations of the samples.

I noted that being mature has a negative effect on the probability of natives who both intend and switch to become entrepreneurs. Furthermore, I found that the number of years spent in Spain by an immigrant and being female has a negative effect on the self-employment intention of immigrants. This may be due to the fact that immigrants may face a higher opportunity cost to become entrepreneurs as they spend more time in the host economy and thereby find more attractive ways to integrate in the society. In contrast, native female individuals are more likely to start up a firm than native males. Interestingly, I found that, while having a business angel experience is significant and has a very strong positive effect on the intention of immigrants to become self-employed, it has the opposite effect for actual entrepreneurs. According to my results, this human capital asset is not significant for native individuals. These findings partially support my first hypothesis and confirm, to a large extent, previous empirical findings that link human capital to the choice of becoming entrepreneurs (Butler and Herring 1991; Bates 1997; Mata and Pendakur 1999; Arenius and Minniti 2005; Levie 2007).

A high monthly earning has a negative effect on the intent and the actual switch to self-employment for both immigrants and native individuals, with the effect being much stronger for immigrants in the first model but not significant in the second one. This finding lends support to the second part of my second hypothesis and is consistent with the results of analyses conducted by Light (1972, 1979), Constant et al. (2003) and Bauder (2005).

Perceiving good entrepreneurial opportunities in the local economic environment increases the probability of native individuals who intend to start up a firm, whereas its effect is not significant for immigrants. This may be explained by the fact that immigrants are usually necessity-driven entrepreneurs rather than opportunity-driven ones. Lee, Wong and Ho (2005) and Arenius and Minniti (2005) reported similar findings about the positive influence of perceiving entrepreneurial opportunities in the propensity of individuals for firm creation.

Self-perception of entrepreneurial abilities and skills has a positive influence on the entrepreneurial intent for native individuals but, unexpectedly, has the opposite effect for immigrants. Immigrants who already earn a high income are not likely to choose self-employment as a career option, but firm creation becomes an alternative when immigrants face difficulties in integrating the labour market of the host country. From cross-tabs analyses, I noticed that only 6 per cent of immigrants with high income and 12 per cent of immigrants with college education are potential entrepreneurs. This suggests that the human

capital endowments and the entrepreneurial experience of potential immigrant entrepreneurs are in general quite poor. Following the reasoning advocated by the disadvantage hypothesis, my results show that the remaining 94 per cent and 88 per cent of immigrants with high earnings and college education, respectively, would not be planning to start a business because they already enjoy a comfortable socioeconomic situation in the host economy.

In sum, whereas some factors have similar effects on the self-employment propensity of immigrants and natives, others do not. It is noteworthy to mention that considering the magnitude of the coefficients, *high-income* immigrants are much more reluctant to start up firms than native individuals. Furthermore, although low-income immigrant individuals show intention to become entrepreneurs, they do not seem to be likely to become entrepreneurs. On the contrary, low income native individuals are more likely not only to intend to become entrepreneurs, but also to actually become entrepreneurs.

6.2   Foreign-owned business survival

My second set of empirical analyses aims to examine the effects of being an immigrant on firm survival. I conduct a set of Cox regression analysis and a series of simulations of Basque firms' census data to answer to my three research questions related to factors affecting foreign-owned firms' survival.

The results of the Cox regression analysis suggest that the origin of entrepreneurs affects venture survival and that firms created by native entrepreneurs survive longer than those created by foreigners. I have carried out two analyses in order to test the effect of the origin of entrepreneurs on firm survival (research question 5) and to compare the explanatory variables of the survival of foreign- and native-own firms (research question 6). Additionally, I run a third regression to analyse the effect of specific industry sectors and their interaction with the origin of the entrepreneur on venture survival. The results of these analyses are shown below.

> *(5)   Are ventures created by foreign entrepreneurs in the Basque Country more or less likely to survive than those started by native entrepreneurs?*

In the first analysis, the Cox regression covers the whole sample of firms in order to test the influence of the independent variable *Immigrant* on the dependent survival. I assigned a unit value to firms created by foreign entrepreneurs and 0 to those created by natives. The

positive sign of the explanatory variable *Immigrant* shown in Table 32 indicates, as expected, that the foreign origin of entrepreneurs has a positive effect on firm mortality and thus, a negative effect on venture survival; i.e. native-owned companies survive longer than foreign-owned. This finding confirms hypothesis 6a and previous studies on foreign-owned firms' survival (e.g. Fertala 2004).

In the same analysis, I tested the effect of core variables such as firms' initial size, industry specific entry and exit rates and the location of the firm on venture survival. I found that higher initial resources as measured by firm size and industry diversification have positive effects on venture survival. This confirmed my third set of hypotheses on size and experimental adaptation strategies for the whole sample of entrepreneurs operating in the Basque Country between 1993 and 2003.

The positive sign of the variable *Indusexit* shows that, as expected, firms operating in industry sectors with higher exit rates do not survive as long as those which operate in sectors characterised by lower exit rates, while the negative sign of the variable *Indusentry* indicates that operating in industry sectors with higher entry rates has a positive effect on venture survival. These findings confirm part of my hypothesis 9a related to the negative effect of high exit rates on venture survival and reject the other one, concerning the negative effect of high entry rates.

Table 32 *Effect of origin of entrepreneurs on venture survival*

	Model I	
	B	*Exp(B)*
Firm internal variables		
Human capital and socio-demographic		
Immigrant	0.08*	0.92
Resources and strategies		
Small	0.19**	0.83
Diversific	-0.66**	1.93
Firm external variables		
Industry sector		
Indusentry	-0.01**	0.99
Indusexit	0.02**	1.02
Location		
Urban	0.04**	0.96
N	67,747	
Significance	0.001	

** Significant at the 0.01 level (1 –tailed)
* Significant at the 0.05 level (1 –tailed)

Finally, I found that the location in an urban area (i.e. any of the three regions in which the county capitals are located) has a negative effect on firm longevity, with firms started in a rural area surviving longer. This finding does not confirm either the generalised hypothesis supported in the literature (Stearns et al. 1995; Razin 1999; Littunen 2000; Peña 2004) or my hypothesis 9b.

> *(6) Are the determinants of business survival of native entrepreneurs similar to those attributed to foreign entrepreneurs?*

Next, I split the sample into two sub-samples: foreign entrepreneurs and native entrepreneurs. I tested four models for foreign-owned firms and three for native-owned firms with a Cox regression analysis. The decision to run more than one regression responds to the co-linearity problems found in the correlation matrix between the variables *Urban*, *Regimmi* and *Regunempl* (refer to chapter five, section 5.6, for correlation matrixes). In the first two models a set of regressions were run with an identical set of variables for both sub-samples. In these cases I looked for a comparative basis in order to observe similarities and differences between the significance of the same set of explanatory variables. However, some of the variables of the last model applied to foreign-owned firms differ from the ones applied to native-owned firms since there were not enough cases for three of the explanatory variables, namely, *Age*, *Male* and *Mobility*. In the case of the variable *Regimmi* I was interested in testing the effect of locating a firm in those areas with higher foreign population on the survival of foreign-owned firms but not on the survival of native-owned firms. Therefore, I decided to maintain the rest of the variables and add the variable *Regimmi* in the third model and *Male* and *Age* in the fourth one for companies started-up by foreign entrepreneurs, and *Mobility* for those created by natives.

Featuring results for *foreign*-owned firms, Table 33 shows that being an older entrepreneur and experiencing industry diversification, i.e. moving from one industry sector to another between the year of inception to firm closure, increase the likelihood of firm survival. These findings support previous work (Stuart and Abetti 1990; Cooper et al. 1989; Constant and Zimmermann 2004; Peña 2004) with respect to the human capital attributes of foreign entrepreneurs as well as to the thesis of strategic experimentation strategies (Nicholls-Nixon et al. 2000). My hypothesis 7a and 8b are also confirmed.

As expected, having a smaller firm (0-2 employees) decreases the probability of survival for foreign-owned firms, whereas being located in areas with a high density of foreigners has a positive effect on foreign-owned firm survival. These findings confirm my hypotheses 8a and 9c.

Table 33 *Foreign-owned venture survival*

	Model I		Model II		Model III		Model IV	
	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Firm internal variables								
Human capital and socio-demographic								
Age							-0.02**	0.98
Gender							0.09	0.91
Resources and strategies								
Small	0.36†	0.69	0.37†	0.69	0.36**	0.69	0.14	0.87
Diversif	-0.36**	1.43	-0.36**	1.43	-0.35**	1.42	-0.44	1.56
Firm external variables								
Industry sector								
Indusentry	0.01	1.01	0.01	1.01	0.09	1.01	-0.00	1.00
Indusexit	0.00	1.00	0.00	1.00	0.04	1.00	0.01	1.01
Location								
Urban	0.07	0.93					-0.05	1.05
Reg_Unempl			0.09	1.09				
Reg_Immi					-0.12*	0.88		
N	1.224		1.224		1.224		240	
Significance	0.001		0.002		0.001		0.310	

† Significant at the 0.01 level (1 –tailed)
** Significant at the 0.05 level (1 –tailed)
* Significant at the 0.1 level (1 –tailed)

The explanatory variables related to the gender of the entrepreneur, in-dustry-specific entry and exit rates and the location of the firm both in an urban environment and in regions with high unemployment rates are not significant for foreign entrepreneurs. Therefore, my hypotheses 7b, 9a, 9b and 9d cannot be confirmed for ventures operated by foreigners.

As shown in Table 34, where native entrepreneurs are concerned, all the explanatory variables are strongly significant. Small entrants and in-dustry diversification have the same effect on locals as they do on for-eign entrepreneurs and may do so for the same reasons. As expected, geographical mobility seems to have a positive influence on firm survi-val. Thus, hypotheses 8a and 8b, related to the positive effect of firms' resources and strategies, are confirmed for native-owned firms.

Table 34 also shows that operating in industry sectors characterised by having high exit rates decreases the likelihood of native-owned firm survival, whereas native-owned companies created in industry sectors

Table 34 *Native-owned venture survival*

	Model I		Model II		Model III	
	B	Exp(B)	B	Exp(B)	B	Exp(B)
Firm internal variables						
Resources and strategies						
Small	0.18**	0.83	0.18**	0.84	0.18**	0.83
Diversific	-0.66**	1.94	-0.66**	1.94	-0.41**	1.51
Mobility					-0.58**	1.79
Firm external variables						
Industry sector						
Indusentry	-0.01**	0.99	-0.01**	0.99	-0.01**	0.99
Indusexit	0.02**	1.02	0.02**	1.02	0.02**	1.02
Location						
Urban	0.03**	0.96			0.03**	0.97
Reg_Unempl			0.04**	0.96		
N	66.503		66.546		66.503	
Significance	0.001		0.001		0.001	

** Significant at the 0.01 level (1 –tailed)

with higher entry rates survive longer than those created in sectors with lower entry rates. These findings support part of my hypothesis 9a, related to the negative effects of high exit rates but not that related to the negative influence of high industry entry rates on venture survival. Finally, the likelihood of survival of those firms located in an urban environment and in regions with higher unemployment rates is not as high as those located in rural areas and in regions with lower unemployment rates.

To sum up, all the variables involved in the first two common models were significant for native-owned firms, but only two of them (*Small* and *Diversif*) were for foreign-owned. This difference in the significance of the variables can be explained by the small size of the foreign-owned firms' sample (1,244 observations) in comparison to the sample of native-owned, comprised of more than 66,500 observations. The signs of the two significant variables are the same for both groups, i.e. the probability of failure for small entrants is higher in the case of both native- and foreign-owned firms, whereas it is lower for those companies experimenting industry diversification. However, the beta coefficient of foreign-owned small firms duplicates the one of native-owned, meaning that the weight of the explanatory variable *Small* for foreign-owned firms is twice the weight of it for native-owned. The opposite case is found in the case of the variable *Diversif*.

As a third and last step, I disaggregated the variable *IndusEntry* into specific industry sectors and run a Cox regression analysis for all the single-person firms in order to find the effect of each sector on venture survival. Additionally, the creation of interaction variables allows us testing the join effect of the origin of the entrepreneur working in a specific industry sector on firm survival.

Table 35 shows that the effect of small size, industry diversification and location of a firm in an urban area do not differ from the results reported in Table 32 (all firms) and Table 34 (native-owned firms). Interestingly, all the industry sectors presented in Table 35 have a positive sign, indicating a negative effect on the survival of those sole proprietor firms which operate in these sectors. However, the estimated coefficients are higher in the case of the construction, business services and education industry sectors, which mean that the effect of these

Table 35   *All firms' survival with industry specification*

	Model I	
	B	*Exp(B)*
Firm internal variables		
Resources and strategies		
Small	0.15†	0.86
Diversific	-0.67†	1.96
Firm external variables		
Industry sector		
Construc	0.31†	0.74
Education	0.24†	0.79
Hotel	0.12†	0.88
Manufact	0.19†	0.83
Retail	0.12†	0.89
Servicesco	0.27†	0.76
Servicespers	0.01†	0.90
Construc*Immi	0.18**	0.83
Education*Immi	-0.07	1.07
Hotel*Immi	0.06	0.94
Manufact*Immi	-0.03	1.03
Retail*Immi	0.12**	0.89
Servicesco*Immi	0.14*	0.86
Servicespers*Immi	0.30**	0.74
Location		
Urban	0.04†	0.96
N	67,793	
Significance	0.001	

† Significant at the 0.01 level (1 –tailed)
** Significant at the 0.05 level (1 –tailed)
* Significant at the 0.1 level (1 –tailed)

explanatory variables on the likelihood of mortality is higher than the effect of hotel and catering, manufacturing and retail. Immigrants who created their company in the construction, retail, business services and personal service sectors do not survive as long as immigrants and natives who operate in other industries, being the sectors of personal services and construction the ones which have the strongest influence on firm survival. Finally, the variables created from the interaction of the origin of the entrepreneur and education, hotel and manufacturing are not significant.

A possible explanation to the unexpected positive effect of operating in industry sectors characterised by having high entry rates could be the good health of these sectors, which exert a pull effect for new firms and extend their life duration. On the contrary, I argue that the lower survival rates of firms that operate in the construction industry sector is owing to the nature of the sector, where often the short life of firms coincides with the duration of each project. The unexpected positive effect of high unemployment rates on survival could mean that entrepreneurs cease operations to take paid employment during periods of low unemployment and, vice versa, the lack of better job opportunities that characterised periods of high unemployment may encourage entrepreneurs to continue their business even when the results may not be so satisfactory. For its part, the negative effect of locating a firm in an urban environment could be explained by a higher competition level and greater fixed operating costs than in rural areas. Yet the disadvantage situation that companies located in rural areas are expected to have in terms of the proximity of clients and suppliers should not be so significant in the Basque Country because it scopes over a relatively small geographical area where the population density is high and the communication infrastructure system good. Thus, firms operating in urban areas would need a higher profit margin than those operating in rural areas to cover costs.

Preliminary analysis of my data showed a gap between foreign and native-owned firms, with native-owned surviving the longest. Cox regression cannot, however, explain this gap. Below I present a series of simulations that explore the role of behaviour – which involves the ability to run a business as well as the reaction to firm-external effects such as macroeconomic conditions, customers' attitude towards them, etc. – versus endowments in explaining the persistent survival differences between native- and foreign-owned ventures (research question 7). I carry out this analysis for two different models: the first one will include only those variables that were significant for both native- and foreign-owned firms (*Small*, *Diversif* and *Construc*), whereas in the second one all the key explanatory variables with industry specification are included (*Small, Diversif, Construc, Edu, Hotel, Manufact, Retail, Servicesco, Servicespers* and *Urban*).

> *(7)   How can the differences in survival between foreign- versus native-owned firms be explained? Is there any 'liability of foreignness' embedded in the entrepreneurial process of foreign-owned firms?*

Graph 18 shows the survival rates of native-owned firms as well as those of native-owned firms simulating foreign-owned both in terms of behaviour and endowments, obtained from the regression of the significant variables.

The average likelihood of mortality for native-owned firms operating in the Basque Country between years 1993 and 2003 is 14.1 per cent. When I make native-owned firms act like foreign-owned by substituting the beta coefficients obtained in the Cox regression analysis, the probability of death increases up to 34.5 per cent, reaching the real estimated likelihood of foreign-owned firms. On the contrary, when I give native-owned firms the endowments of foreign-owned by substituting the average endowments of each of the three significant explanatory variables (namely, size, industry diversification and construction) the variation in the probability of death is not significant. If all the key explanatory variables are considered (simulations with all the key explanatory variables are available from the author under request), a small shift is perceived in the endowment line. The probability of failure of native-owned firms reaches 36.5 per cent. As in the previous analysis, these percentages increases (up to 42.8 per cent) if I make native-owned behave as foreign-owned. The shift in the likelihood of mortality for native-owned firms simulating foreign-owned endowments (from 36.5 to 38.1 per cent) is much lower than the growth resulting from the behaviour effect of native-owned simulating foreign-owned firms. The main

Graph 18   *Native-owned firms simulating foreign-owned: Significant variables*
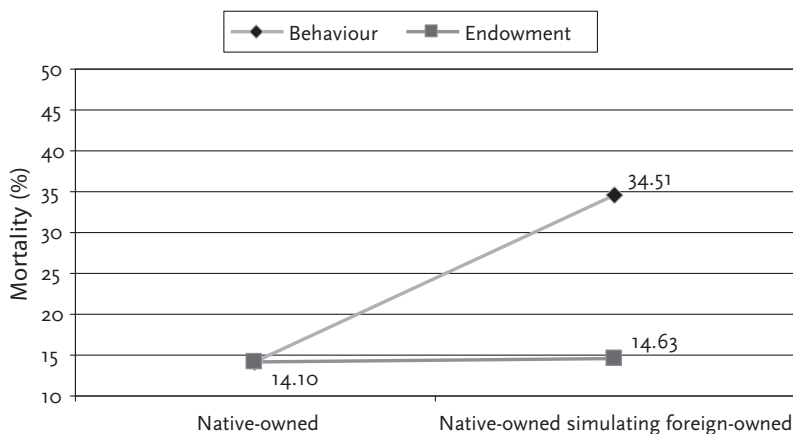
reason of this increase is the significantly higher mean value of the education sector of foreign-owned firms in comparison to the one of native-owned (9.4 versus 2.1 per cent).

Graph 19 shows the results of the estimated survival rates for foreign-owned firms as well as for foreign-owned firms mimicking native-owned, both in behaviour and endowments, resulting from the regression of the significant variables. The average probability of failure for foreign-owned firms operating in the Basque Country between years 1993 and 2003, when the significant variables are considered, reaches 33.9 per cent. If I make foreign-owned firms acting like native-owned by substituting the beta coefficients obtained in the Cox regression analysis, the probability of death decreases to 14.6 per cent, becoming equal to the real estimated likelihood of failure of native-owned firms. As in the case of native-owned companies simulating foreign-owned endowments, when I give foreign-owned firms the endowments of native-owned by substituting the average means of each of the three significant explanatory variables, the variation in the probability of closure is not significant.

When all the explanatory variables are taken into account, I can observe than the decrease in the probability of failure resulting from the behaviour effect is not as significant as the effect observed in the previous model where only the significant variables were analysed (4 and 20 points, respectively). Finally, the increase in the likelihood of death resulting from the endowment effect is not as significant as the one generated by the behaviour effect (0.70 versus 4 points) and it is caused by the native-owned firms' higher endowments in small firms (18 per cent in comparison to foreign-owned' 14 per cent) as well as in business services (96 versus 93 per cent).

Graph 19   *Foreign-owned firms simulating native-owned: Significant variables*
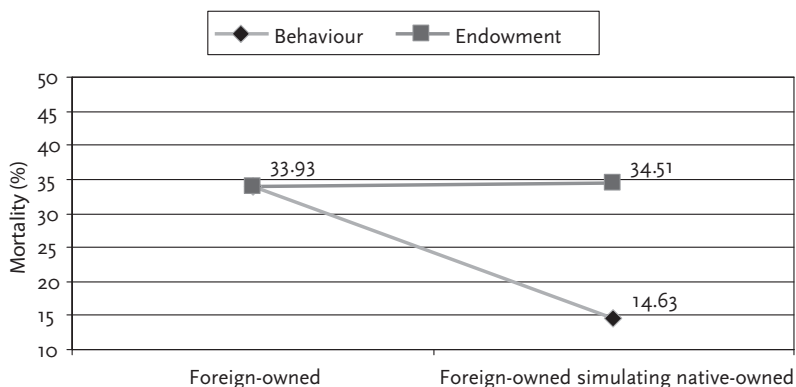
These findings confirm the results obtained in the Cox regression analysis, where I found that the probability of death for foreign-owned firms is higher than that of native-owned. They show that (i) as expected, the gap in the likelihood of mortality between native-owned versus foreign-owned firms is due to their behaviour and not to their initial endowments and that (ii) this gap would disappear if foreign-owned firms acted like native-owned firms and vice versa. Since the behaviour effect – i.e. differences in the ability to run a business and the reaction to firm-external factors between immigrant and native entrepreneurs – explains the existing venture-survival gap, I suggest that immigrant entrepreneurs face the 'liability of foreignness' problem, understood as the disadvantage situation they find at running a business in a foreign country, originated as a result of a lack of knowledge of the host market rules, language skills and experience, and discrimination. This finding supports my hypothesis 6b.

6.3 Economic benefits of immigrants' self-employment

Finally, I conducted a chi-square test and two binomial logistic regression analyses to assess the economic benefits that immigrants may obtain from self-employment and answer my last two research questions. First, the chi-square test is used to see if there is an income gap between self-employed and salaried immigrants (research question 8). Second, I run a binomial logistic regression to compare the effect of a set of independent variables on the earnings of self-employed and salaried immigrants (research question 9). The results of these analyses are shown next.

> (8) *Is there any significant difference between the earnings of self-employed and salaried immigrants?*

The chi-square test indicates that there are significant differences in the income distribution between entrepreneurial and salaried immigrants. The income distribution of self-employed and salaried immigrants is shown in Table 36, where the percentage of self-employed immigrants is slightly superior for the highest income levels (i.e. 30.7 per cent of self-employed immigrants earn more than € 1,800/month, while only 25.9 per cent of salaried immigrants do). This finding confirms my hypothesis 10a and supports previous findings by Borjas (1986), Butler and Herring (1991) and Constant et al. (2003).

The positive answer to this question led me to conduct a second analysis on the effect of a certain number of individual-related and

Table 36 *Chi-square test for self-employment by income, all immigrants*

		Work type	
		Salaried	*Self-employed*
Monthly income	< € 600-	47 (5.8%)	26 (7.7%)
	€ 600-1,200	269 (33.4%)	105 (31.0%)
	€ 1,200-1,800	281 (34.9%)	104 (30.7%)
	€ 1,800-2,400	109 (13.5%)	67 (19.8%)
	> € 2,400+	100 (12.4%)	37 (10.9%)
	Total	806 (100%)	339 (100%)

$$x^2 = 9.419 \text{ with } p \text{ value} = 0.051$$
$$df = 4 \text{ and critical value} = 7.779$$

environmental factors, suggested in the literature, on the earnings of self-employed and salaried immigrants.

> (9) Are the explanatory factors for earnings similar for self-employed and salaried immigrants?

In order to identify and compare the factors that influence the earnings of self-employed and salaried immigrants I run two binomial logistic regressions. The results of these regressions show that the determinants of the earnings of self-employed and salaried immigrants are quite similar. Nevertheless, a few differences pertaining to the location and the human capital endowments of immigrants should be noted.

The effect of individual- and context-related factors on the probability of greater immigrants' earnings is tested in model 1, as shown in Table 37. Having a college education was found to have a positive effect on the earnings of self-employed and salaried immigrants, whereas age was not found to have a significant effect on income. Better-educated individuals are supposed to have more skills to run a business, which, in turn, should have a positive influence on their income. This finding partially confirms my hypothesis 11a for both self-employed and salaried immigrants and supports previous studies by Clark and Drinkwater (1998), Dávila and Mora (2002) and Hjerm (2004). Socio-demographic variables related to the origin of individuals were not significant predictors of self-employed and salaried immigrants' earnings, and thus hypothesis 11b is not supported for these sub-samples.

A few variables related to industry sectors and the motivations to start up were added to the base model for self-employed immigrants. Unexpectedly, necessity-driven entrepreneurs were more likely to have an above-average income than opportunity-driven entrepreneurs. The

Table 37 *Binomial logistic regression analysis*

	Self-employed immigrants				Salaried immigrants	
	Model 1 B	Model 2 B	Model 3 B	Model 4 B	Model 1 B	Model 2 B
Individual-related factors						
Human capital variables						
College	1.53†	-1.42	1.51†	1.48†	0.86†	0.22
Afr*College		3.20**				-0.17
Eu*College		3.20†				0.74
NA*College		21.37				1.63
SA*College		3.30†				0.67
Age	-0.02	-0.03	-0.03	-0.02	0.00	-0.02
Afr*Age			-0.01			0.02
Eu*Age			0.02			0.02
NA*Age			0.01			0.01
SA*Age			0.01			0.02
Socio-demographic variables						
Gender	0.58	0.61*	0.60*	0.24	0.00	1.63
Afr*Gender				19.99		-1.08
Eu*Gender				0.42		-1.68
NA*Gender				0.17		-2.74
SA*Gender				0.33		-1.69
African	0.23				0.44	
European	1.03				0.57	
Namerican	0.46				0.20	
Samerican	0.65				0.41	
Motivation						
TEAmot	-1.36†	-1.48†	-1.39**	-1.19**		
Context-related						
Industry sector						
Extractive	0.43	0.40	0.48	0.39		
Transforming	0.50	0.53	0.50	0.49		
Business services	0.07	-0.07	0.05	-0.01		
Consumer-oriented	-0.26	-0.18	-0.31	-0.21		
Environment						
Urban	-0.69*	-0.78**	-0.69*	-0.64*	0.30**	0.31**
RegGDPcap04	0.00†	0.01†	0.01†	0.01†	0.00**	0.01**
Constant	5.35†	6.697	6.12†	5.41†	-1.58**	-1.15
N	188	188	188	188	806	806
Chi-square	38.67†	48.71†	38.78†	37.52†	48.54†	55.03†
Nagelkerke's R	0.25	0.31	0.25	0.24	0.08	0.09

† Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level

high risk usually involved in opportunity-driven ventures may indeed result in more business failures. The income of opportunity-driven immigrant entrepreneurs might therefore be, on average, lower than that earned by necessity-driven business owners. Hence, hypothesis 10b is rejected for self-employed immigrants.

Environment-related variables were found to be significant for both self-employed and salaried immigrants. The earnings of self-employed and salaried immigrants living in wealthier regions were more likely to be above average than their counterparts'. Nevertheless, whereas living in an urban area increased the probability of greater income for salaried immigrants, the opposite was found for self-employed immigrants. The negative effect of living in urban areas on the income of the self-employed may be due to the high cost of urban commercial premises that leave a smaller profit margin to entrepreneurs. In sum, my hypothesis 12b is completely supported for salaried immigrants and only partially for the self-employed. None of the industry-related variables were significant and thus hypothesis 12a was not supported for immigrant entrepreneurs.

In short, self-employed immigrants who fill one of the following conditions, i.e. holding a college degree, being necessity-driven, or living either in rural areas or wealthier regions, are expected to reap above-average earnings. On the other hand, the income of salaried immigrants who have a college education or live either in urban areas or in wealthier regions is likely to be greater than for other salaried immigrants.

Additional models included interaction variables in order to capture the joined effect of the origin of individuals and human capital variables. Due to the modest number of observations for self-employed immigrants, I ran three regression analyses to include interaction variables combining education level, age and gender of individuals with their origin (models 2, 3 and 4). As shown in Table 37, the effect of interaction variables was stronger for self-employed than for salaried immigrants. On the one hand, I found that the earnings of highly educated, self-employed Africans, Europeans and South Americans were more likely to be above average than those of their counterparts. On the other hand, my results show that, while being male increased the probability of above-average earnings from self-employment in models 2 and 3, none of the interaction variables combining the origin, the age and gender of individuals were significant.

The findings of the three empirical analyses are summarised and related to the hypotheses formulated in chapter five next.

6.4   Summary of findings

In this dissertation the entrepreneurial propensity and business performance of immigrants are examined. I do this by conducting three sets of empirical analysis. First, I addressed the subject of the intent and propensity of individuals, immigrants and natives, to engage in entrepreneurial activities and found that while immigrant individuals are more likely to show intent to become entrepreneurs, native individuals are more likely to actually create a new venture. My results also show that origin-related factors are significant to explain inter-group differences in the intention to undertake entrepreneurial activities, with Central and South American individuals being more likely to show an intent to become self-employed than people from other geographical areas. Finally, context-related factors also explain the intent but not the probability of really engaging in entrepreneurial activities.

Second, I sought to assess business survival differences between foreign and native-owned sole proprietor firms. The findings show that the foreign birth status of entrepreneurs affects survival, with firms created by natives surviving longer than foreign-owned ventures. Based on the result of the simulation analyses, I suggest that the main differences in survival between native- and foreign-owned firms are caused by the liability of foreignness, i.e. a disadvantage situation originated as a result of a lack of knowledge of the host market rules, language skills and experience, and discrimination, which makes the immigrant entrepreneurs' ability to run a business in a foreign country as well as their reaction to environmental factors less effective and favourable.

Finally, I examined the earnings of self-employed and salaried immigrants in Spain, and found that earnings of immigrant entrepreneurs were slightly greater than those of salaried immigrants. Human capital variables, such as educational levels, and environmental variables related to the location of individuals and firms were found to be the most significant predictors of both self-employed and salaried immigrants' earnings.

Table 38 summarises the main results of the empirical study. A more detailed discussion of these findings follows.

Table 38 *Summary of findings*

		Hypotheses	Findings
Likelihood of self-employment	H1	Both immigrant and native individuals with a diverse and rich human capital endowment (i.e. number of years in Spain, age, education level and business experience) will be more likely to show an intent and to actually start up a firm than their counterparts.	Partially supported
	H2	Immigrants are more likely to become entrepreneurs than native individuals. Furthermore, immigrants with a low income (i.e. necessity-driven entrepreneurs) are more prone to start up firms than their counterparts.	Partially supported
	H3	Individuals' positive perception of self-efficiency, risk tolerance and opportunities available in the local economy increase the likelihood of firm creation for immigrants and natives.	Supported for natives
	H4	The entrepreneurial culture embedded in the country of origin of immigrants affects their intent and actual switch to become entrepreneurs.	Not supported
	H5	Certain environmental factors (such as living in an urban area, high foreign population density and high unemployment rates) will have a positive influence on individuals' intent and actual switch to become entrepreneurs.	Partially supported
Firm survival	H6a	The likelihood of survival of firms created by native entrepreneurs is greater than that of firms created by foreign entrepreneurs.	Supported
	H6b	The differences in venture survival between immigrant versus local entrepreneurs can be explained by the 'liability of foreignness' problem immigrant entrepreneurs have to face.	Supported
	H7a	The probability of survival of firms created by older entrepreneurs is higher than that of firms created by younger entrepreneurs.	Supported
	H7b	Firms created by male entrepreneurs survive longer than those created by their female counterparts.	Not supported
	H8a	The greater the initial size of the firm, the greater its likelihood of survival.	Supported
	H8b	The application of experimental adaptation strategies, measured by geographical mobility and industry diversification, has a positive effect on venture survival.	Supported
	H9a	Firms operating in highly turbulent industry sectors, measured by high entry and exit rates, do not survive as long as firms operating in less turbulent sectors.	Partially supported
	H9b	Firms located in urban areas survive longer than those located in rural areas.	Not supported
	H9c	Foreign-owned firms located in an area with a large population of immigrants survive longer than foreign-owned firms located where there are few immigrants.	Supported
	H9d	Unfavourable economic conditions, measured by unemployment, have a negative effect on venture survival.	Supported for natives

		Hypotheses	*Findings*
Economic benefits of self-employment	H10a	Self-employed immigrants are likely to earn more than salaried immigrants.	Supported
	H10b	Opportunity-driven immigrant entrepreneurs are likely to earn more than their necessity-driven counterparts.	Not supported
	H11a	Factors enriching the human capital of individuals (i.e. education and experience) are positively associated with immigrants' earnings.	Supported
	H11b	Immigrants from socio-economically advanced regions are likely to earn more than immigrants from less advanced countries.	Not supported
	H12a	Self-employed immigrants operating in transforming industry sectors are likely to earn more than their counterparts.	Not supported
	H12b	Immigrants working in wealthier regions and in metropolitan areas are likely to earn more than their counterparts.	Partially supported

Part IV: Conclusions and implications

7   Final conclusions

The entrepreneurial activity of immigrants is increasingly attracting the attention of researchers, policymakers, financial institutions and other business stakeholders. This is due to the proliferation and visibility of foreign-owned businesses in metropolitan areas all over the world. In Spain, where the percentage of foreign population increased from 1.6 per cent in 1998 to almost 10 per cent in 2007, the number of foreigners registered with the Social Security department as self-employed rose to almost 5 per cent of the total self-employed population by 2005. This reality is particularly noticeable in certain areas of large cities such as Madrid and Barcelona. However, not all businesses run by immigrants are noticeable and different from those run by natives.

This dissertation aimed to analyse different aspects of the entrepreneurial activity of immigrants in Spain and the Basque Country. In this chapter I discuss my key findings, resume the debate on the concepts of ethnic and immigrant literature, briefly comment on the efficiency of entrepreneurship as a means of social integration and present the limitations of the study.

7.1   Discussion of the main findings

The entrepreneurial activity of immigrants and ethnic minorities has been scrutinised in countries with a long immigration history, such as the US, Canada, Australia and the UK, whereas in countries such as Spain, where immigration is a recent phenomenon, the literature in the field is scarce. In addition, immigrant entrepreneurship has been studied mainly by sociologists and anthropologists, who focused on the ethno-cultural characteristics of immigrants, often ignoring individual attributes such as human capital. Even the 'embedded' model suggested by Aldrich and Waldinger (1990) to study the entrepreneurial propensity of immigrants and ethnic minority groups, which includes both group characteristics and environmental factors, focuses on inter-group differences in self-employment. Hence, this approach also emphasises cultural characteristics to the detriment of individual ones. More recently, a few economists (Bates 1997; Constant and Zimmermann

2004; Fertala 2004; Levie 2007) have analysed the self-employment propensity of immigrants and ethnic minorities by highlighting the human capital and the socio-demographic characteristics of entrepreneurs. Nevertheless, whereas all these authors studied the likelihood of immigrants and ethnic minority members to become entrepreneurs, only two of them – Bates (1997) and Fertala (2004) – analysed the survival rates of their firms. In this dissertation I proposed to contribute to the literature by comparing the entrepreneurial activity of immigrant and native entrepreneurs, both in the start-up process and in the post-creation stage, based on a framework that includes three levels of analysis: the individual, the firm and its environment (research objective 1).

More specifically, first, I studied the intention and propensity of immigrant and native individuals to engage in entrepreneurial activities (research objective 1.1). I found that, while immigrants are more likely to intend to become entrepreneurs, natives are more likely to actually create a new venture. The obstacles immigrants often face in their attempts to access the labour market and their liability of foreignness may partially explain my finding.

Second, I analysed the performance (survival and generated income) of firms created by immigrants (research objectives 1.2). Specifically, the second set of empirical tests aimed to assess business survival differences between foreign- and native-owned sole-proprietor firms. I found that firms created by natives survived longer than foreign-owned ventures, and that the gap in the likelihood of closure between native- and foreign-owned firms is generated by the 'behaviour effect', i.e. the ability of the entrepreneur to run a business and react to environmental conditions, and not by the 'endowment effect'. As in the first set of analyses, I suggested that the main differences in survival between native- and foreign-owned firms were caused by the liability of foreignness. The latter is the result of a lack of knowledge of the host market rules, poor language skills, limited experience, and discrimination. This liability hinders the immigrant entrepreneurs' ability to run a business in the host country and makes their reaction to environmental factors less effective.

Finally, I found that the reported earnings of immigrant entrepreneurs were slightly higher than those of salaried immigrants. This finding supports the socioeconomic advancement hypothesis proposed by Constant et al. (2003), which states that entrepreneurship can be an avenue for immigrants' upward mobility in the host country. Unfortunately I could not test the relationship between business creation and social participation due to the lack of pertinent data on the number of hours worked, the interaction of entrepreneurs with local people both at work and during their leisure time, and the natives' attitudes towards immigrant businesses and individuals before and after firms are created. Hence, I could not contribute to the debate on the

efficiency of self-employment as a means of social integration of immigrants in the host society. To further explore the motivations and consequences of business creation (research objectives 2 and 2.1), next I briefly review the literature on the socio-economic benefits of self-employment, by paying special attention to the results of a previous exploratory study conducted by myself among immigrant small business owners in the Basque Country (Irastorza and Peña 2008).

The economic and social benefits derived from business creation depend, to some extent, on the choices available to entrepreneurs in the labour market and on the welfare system in the host country. On one hand, where individuals do not expect to find a satisfactory job in the wage labour market, self-employment can be a sound alternative. On the other hand, if the unemployment benefits in a particular country exceed the economic returns of owning a business, the benefits derived from self-employment are not economic, but may boost social wellbeing and personal self-esteem.

A controversy surrounds the benefits immigrants derive from self-employment. While some researchers suggest that business creation can promote the socio-economic advancement of immigrants (Constant and Zimmermann 2004; Parella 2005), others contend the opposite (Hjerm 2004; Irastorza and Peña 2008). Hjerm (2004) questions the efficiency of self-employment as a means of socio-economic integration in the host society, arguing that immigrant business owners often work long hours, do not make large profits, and, thus, have little time left for social interactions away from work.

Half of the ten business owners who participated in the study of Irastorza and Peña (2008) declared that they started a business in order to improve their working conditions and for economic advancement (i. e. necessity-driven entrepreneurs). The GEM project defines necessity-driven entrepreneurs as individuals who become self-employed because they cannot find better employment. Hence, the profit and growth expectations of businesses created by necessity-driven entrepreneurs are likely to be lower than those of opportunity-driven entrepreneurs who create firms because they detect good business opportunities. These interviewees' answers thus confirm the disadvantage hypothesis coined by Light (1972). When asked whether their economic situation had improved since they became self-employed, four respondents said yes. However, all four of them added that they worked longer hours than they used to. Three other interviewees did not notice any socio-economic advancement and the remainder confessed having lost money by starting their own business. Finally, only one interviewee thought that his social network had grown since he had been in business, and all the others declared that they did not have time to socialise since they worked very long hours.

To summarise, my third set of empirical tests indicated that self-employed immigrants earned more than salaried ones. However, I lacked data about key variables such as the number of hours worked. Due to the liability of newness and the liability of smallness, new small business owners usually work longer hours than salaried workers in order to survive the critical initial five-year period. Thus, had I been able to control for the number of hours worked, my results may have been different.

7.2   Ex-post discussion of ethnic/immigrant entrepreneurship

In the literature chapter of this dissertation the appropriateness of labelling the entrepreneurial activity of immigrants and ethnic minorities as *ethnic* or *immigrant* was discussed. The diversity extant in businesses run by immigrants and members of ethnic minorities was simplified in previous studies by overstressing entrepreneurs' culture at the expense of individual factors, by treating the whole population of immigrants or members of ethnic minorities as an homogeneous group, and, finally, by using the ambiguous concept of ethnicity to refer only to minorities.

Due to data limitations I could not carry out an exhaustive analysis of behavioural differences amongst immigrants from various ethnic groups. Nevertheless, comparing foreign- and native-owned firms allowed me to reach some informed conclusions. My findings suggest that the enterprising ability of immigrants differs from that of natives in the following manner: more immigrants than natives intend to start businesses while they are less likely than natives to put their resolve into practice. I argued that the first finding may be explained by the disadvantage hypothesis (Light 1972) and the enterprising nature of immigrants, and the second finding may be the result of the liability of foreignness they experience. Hence, in both cases differences in the intention and the propensity to start a business should not be attributed to ethnicity, but to the availability of material resources (private property, human capital, investments [Light 1984]) and alternative employment opportunities.

The same conclusion can be drawn from the main result of my second set of empirical tests: foreign-owned firms do not survive as long as native-owned firms. Once more I argued that the liability of foreignness, i.e. the unfamiliarity of the host market rules, poor language skills, lack of work experience, and discrimination might cause this gap. Therefore, the ethnicity argument cannot be used to explain this finding either.

To sum up, due to data limitations I could not compare previous studies which treat the entrepreneurial activity of immigrants differently

from that of natives'. Nevertheless, the results obtained in my empirical analysis allow me to make a modest contribution to this debate. My findings show that the differences in entrepreneurial attitude and behaviour between immigrants and natives stem from unequal access to the opportunity structure, the availability of resources, the familiarity with the host society's rules, language and the market system, and not from the ethnicity or the origin of the entrepreneur.

7.3   Limitations of the study

In this section I present the general limitations of this dissertation as well as the specific limitations of the empirical study.

An important limitation of my research work is data availability. On one hand, firm census data provided by the Basque Statistical Institute include a large number of individuals but a limited number of variables. Furthermore, it allows distinguishing between foreign- and native-owned sole-proprietor firms only. Hence, caution is recommended in the interpretation of my results. The differences in initial endowments between native- and foreign-owned sole-proprietor firms, which start with similar human capital resources, are expected to be lower than the differences between native- and foreign-owned firms of all legal forms, where a higher heterogeneity of human capital and financial resources can be found and thus the lower initial endowments which characterised foreign-owned firms is expected to have a more significant impact. I believe that if I analysed the whole population of firms (including all legal forms) operating in the Basque Country between 1993 and 2003, the survival gap between foreign- and native-owned firms would increase. On the other hand, the selection of sole-proprietor firms allows the comparison of two groups with the same endowments in terms of number of entrepreneurs and similar sizes, facilitating the test of the reasons behind these differences. The small number of human capital explanatory variables in my database constitutes the second limitation of this study. Nevertheless, it should be noted that I applied a series of simulations that may have partly compensated for my limited data on the human capital characteristics of entrepreneurs. Thus, in spite of this shortcoming, I believe that the results are robust enough to contribute to and extend the scant literature on survival differences of foreign- and native-owned firms.

On the other hand, the GEM questionnaire was designed to analyse the early stages of entrepreneurial activity in various countries in the context of the economic growth of these countries. Thus, it is appropriate to study start-up processes and their determinant factors, but not to analyse the labour market of those countries. This is especially

noticeable in my third set of empirical tests, where not only the predictive power of my models is limited, but also the sample size for the immigrant entrepreneurs group is modest. Moreover, I could not assess the opportunity cost of self-employment due to insufficient data, such as the number of hours worked per week.

Moreover, the main target group of this dissertation is the immigrant population and, more specifically, self-employed immigrants. Since the Global Entrepreneurship Monitor (GEM) conducts a yearly survey in which a limited number of immigrants participate, the data did not allow me to carry out a more detailed analysis of immigrants by origin. Thus, in the main analyses conducted in this dissertation I could only differentiate between natives and immigrants, treating them as two distinct but internally homogeneous groups. To overcome this limitation, when the data allowed, I included origin-related factors as independent variables in my model. Nevertheless, some sub-samples have a short number of observations.

Finally, secondary data and quantitative methods were used in the empirical analysis of this dissertation. Quantitative methods are appropriate to produce quantifiable data and results that can be generalised to larger populations. However, since no database can capture all the individuals and variables at work in real life, the application of quantitative methods on secondary data de-contextualises human behaviour and removes the studied object from its real setting.

8   Academic and policy implications

8.1   Policy implications

The main policy implications inferred from my study are summarised here. In each set of empirical studies conducted in this dissertation, I identify some gaps that could be filled with appropriate policy initiatives. These gaps are as follows:

- Firstly, there is a gap in the self-employment propensity of potential and actual entrepreneurs, between immigrants and natives. Policymakers should bear in mind that the entrepreneurial intent of an individual may not result in the creation of a firm by such an individual; and that immigrants, as a disadvantaged group, may be more likely to intend to start firms than natives, but, for similar reasons, less likely to succeed in doing so.
- Secondly, there is a gap in the survival rates of native- and foreign-owned firms, with the former surviving longer than the latter. I suggest that this may be caused by the liability of foreignness, i.e. adverse situations arising from a lack of familiarity with the host market rules, poor language skills, lack of work experience, and discrimination.
- Finally, there is an income gap between self-employed and salaried immigrants, with the self-employed earning more than the salaried. This dissertation provides empirical evidence for slightly greater gains in immigrant earnings derived from self-employment than from salaried employment. Various factors may cause this gap. On the one hand, salaried immigrants may face more obstacles in the labour market than native workers. Empirical studies show that, other things being equal, and depending on the industry sector, male immigrants earn between 7.2 and 16.3 per cent less than native men (Martín 2006). On the other hand, apart from the traditional low-skilled and labour-intensive activities referred to in the immigrant entrepreneurship literature, immigrants may be creating innovative and profitable businesses, and, thus, earning more.
- Policymakers should be aware of the increasing significance of the entrepreneurial activity of immigrants in Spain and offer tailored responses to improve their economic integration in the situations

described above. Some policy initiatives that could help reduce these gaps are:

- On the one hand, policymakers should study the wage labour market and identify the factors that compel immigrants to resort to self-employment; policies should reduce differences in access to the labour market and in job conditions. Initiatives could entail speeding up the work permit application process and the recognition of foreign credentials, or adopting measures to combat discrimination towards salaried immigrants.
- On the other hand, policymakers should take into account factors that hinder the start-up process of immigrant firms. Policies which facilitate initial financing and make expert support available to immigrant entrepreneurs during the initial years of their firms' operation should be adopted so that immigrants can overcome the additional barriers caused by the liability of foreignness both at the firm pre-creation and post-creation stages.
- Finally, the promotion of entrepreneurship should also target immigrants who are increasingly becoming self-employed.

8.2   Future research suggestions

To conclude, in this section I suggest some ideas to further analyse the specific topics of this dissertation as well as other related subjects for future research lines.

More exhaustive analyses of more complex databases (either in terms of number of variables or individuals) must be carried out. The labour market insertion of immigrants may vary over time, according to the regulatory framework and the development of the welfare state of host countries. An international comparison at different points in time would provide an assessment of the effect of diverse social and institutional environments on the economic integration of immigrants. Finally, the application of qualitative techniques, such as in-depth interviews, would result in a better understanding of the factors (motivation, business strategies and their consequences) underlying immigrants' entrepreneurial initiatives. More specifically, further in-depth analysis is needed for reasons as follows:

(i)   To explain the gap between the intent versus the act of becoming entrepreneurs for immigrants. I suggested that the liability of foreignness hinders the firm start-up process for immigrants; however, this topic remains unexplored.

(ii)   To assess and compare the survival of foreign-owned firms over years and across geographical areas. The exploratory analysis of my database indicates that there is a gap in mortality of firms created in 1994

versus those created in 1998. It would be interesting to carry out the same analysis at different points in time in order to test the effect of environmental factors, such as economic growth and socio-demographical changes (e.g. an increase in the foreign population) on firm survival. Besides, a comparative study of foreign-owned firm survival across different countries and different Spanish regions would provide an assessment of country and regional entrepreneurial opportunities as well as policy initiatives.

(iii)   To explore the characteristics of firms' created by immigrants such as the innovation activities and the technological level of firms, growth strategies and the initial financial capital of immigrant entrepreneurs.

(iv)   Furthermore, the labour market situation and the earnings of immigrants may vary according to the regulatory frameworks and the development of the welfare state of various countries. A cross-country comparison would allow an assessment of the effect of diverse social and institutional environments on the economic integration of immigrants.

Some additional topics related to the entrepreneurial activity of immigrants that have remained largely unexplored are the following:

- The ex-ante and ex-post immigration career of entrepreneurs. Very few studies focus on the career paths of self-employed immigrants, before and after they immigrate. Does entrepreneurship affect immigrants and natives alike? Can profiles of immigrant entrepreneurs be drawn? What career path do immigrants who created and shut down firms follow?

- Profiles of immigrant entrepreneurs. Studies on ethnic and immigrant entrepreneurship often describe immigrant-owned businesses as small, local and labour-intensive. The strategic behaviour of immigrant entrepreneurs has been linked to the characteristics of their respective ethnic groups (Leung 2001), often ignoring the heterogeneity in the human capital characteristics and in the firms created by immigrants with similar ethnic backgrounds. So far no serious attempt has been made to classify self-employed immigrants by their human capital characteristics, their immigration history, or their business characteristics. Self-employed immigrants' profiles would fill a gap in the literature and help design tailored responses to immigrant entrepreneurs according to their particular needs.

- The relationship between immigration, immigrants' entrepreneurial activity, total entrepreneurial activity and economic growth of a country. As a result of increasing migration from economically less developed countries to Europe, the debate on the benefits and costs of immigration has become one of the hot topics on the EU's political

agenda. Whereas governments are concerned with the level of support granted to newcomers via their welfare systems, several authors have found that immigration is beneficial for host economies (Borjas 1995; Poot 2007), although there is no consensus on the extent of these benefits. Whereas Poot (2007) claims that new immigration increases the economic growth of host countries in several ways (rise in national productivity, total entrepreneurial activity and innovation), Borjas (1995) contends that the economic benefits derived from immigration in the US are modest, and he suggests the implementation of policies to attract highly skilled immigrants. In addition, scant studies quantified the relationship between immigration, the entrepreneurial activity of immigrants, the total entrepreneurial activity and the economic growth of a country. An international comparison of the effect of migration (both immigration and emigration) on the entrepreneurial activity and the economic growth of countries would fill this gap in the literature.

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Appendices

Appendix 1   Description of variables

Appendix 1.1   Description of variables of the first set of analysis: Determinants of self-employment

Name	Definition	Source
Futsup	Dummy variable that distinguishes between people who expect to start a business in the next three years (value = 1) and people who do not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Entrepr	Dummy variable that distinguishes between entrepreneur (value = 1) and non-entrepreneur (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005
College	Dummy variable that distinguishes between people with college education (value = 1) and lower education (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005
Shutd12	Dummy variable that distinguishes between people who shut down a firm in the previous twelve months (value = 1) and people who did not (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005
Busan	Dummy variable that distinguishes between individuals who had a business angel experience in the previous three years (value = 1) individuals people who did not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Knowent	Dummy variable that distinguishes between people who know someone who started a firm in the previous two years (value = 1) and people who do not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Age	Continuous variable that indicates the age of individuals at the moment of the interview	GEM Spain: Regional aggregated databases of 2005
Age^2	Squared term of the previous variable (Age)	GEM Spain: Regional aggregated databases of 2005
YrsinSpain	Continuous variable that indicates the number of years immigrants have lived in Spain for at the moment of the interview	GEM Spain: Regional aggregated databases of 2005
Male	Dummy variable that distinguishes between male (value = 1) and female (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005
HighIncome	Dummy variable that distinguishes between individuals who earn an income higher than € 1,800/month (value = 1) and individuals who earn a lower income (value = 0)	GEM Spain: Regional aggregated databases of 2005

Name	Definition	Source
Immigrant	Dummy variable that distinguishes between immigrants (value = 1) and natives (value = 0)	GEM Spain: Regional aggregated databases of 2005
FearFail	Dummy variable that distinguishes between individuals who answered that fear of failure would prevent them from starting a firm (value = 1) and those who answered that it would not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Opport	Dummy variable that distinguishes between people who perceive good business opportunities for the next six months (value = 1) and those who do not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Skills	Dummy variable that distinguishes between people who perceive self-entrepreneurial abilities (value = 1) and those who do not (value = 0)	GEM Spain: Regional aggregated databases of 2005
Csamer	Dummy variable that distinguishes between individuals born in Central and South American countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005
Maghreb	Dummy variable that distinguishes between individuals born in North African countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005
Rafrica	Dummy variable that distinguishes between individuals born in the rest of the African countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005
Asia	Dummy variable that distinguishes between individuals born in Asian countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005
Cultsup	An index that measures peoples' perception about the entrepreneurial culture of their home countries (values 1, 2 and 3)	GEM Spain: Regional aggregated databases of 2005
Urban	Dummy variable that distinguishes between individuals who live in an area with more than 5,000 inhabitants (value = 1) and those who live in an area with a lower number of inhabitants (value = 0)	GEM Spain: Regional aggregated databases of 2005
Pdensity05	Continuous variable that describes the regional population density of 2005	Spanish National Statistics Institute (INE)
Foreignpop05	Continuous variable that indicates the percentage of foreigners per region in 2005	Spanish National Observatory of Immigration
Unempl04-05	Continuous variable that calculates the average unemployment rate per region in 2004 and 2005	Spanish National Unemployment Institute (INEM)
NewfirmsPC03	Continuous variable that represents the number of firms created per 1,000 inhabitants in 2003 in each region	Spanish National Statistics Institute (INE)

Appendix 1.2   Description of variables of the second set of analysis: Determinants of survival

Name	Definition	Source
Survival	Number of years from firm inception to closure between years 1993-2003	EUSTAT: Basque Statistical Institute
Immigrant	Dummy variable that distinguishes between foreign (value = 1) and native (value = 0) entrepreneurs	EUSTAT: Basque Statistical Institute
Age	Continuous variable that indicates the age of entrepreneur(s) at the moment of firm creation	EUSTAT: Basque Statistical Institute
Male	Dummy variable that distinguishes between male (value = 1) and female (value = 0) entrepreneurs	EUSTAT: Basque Statistical Institute
Small	Dummy variable that distinguishes between firms started up with zero, one or two employees and those with more than two. It was created by recoding the initial polychotomous variable size and by giving the value of 1 to those firms started-up with 0-2 employees and the value of 0 to the remaining ranks	EUSTAT: Basque Statistical Institute
Team	Dummy variable that distinguishes between firms created by more than one entrepreneur and those created by an individual. It was created by recoding the initial polychotomous variable *Legal status* and by giving a value of 0 to those firms created as a form of physical persons and a value of 1 to the remaining forms (i.e. corporation, limited liability company or cooperative)	EUSTAT: Basque Statistical Institute
Diversific	Dummy variable that distinguishes between firms that changed the industry sector they operated in between the first and the last years of registration (value = 1) and those that did not (value = 0).	EUSTAT: Basque Statistical Institute
Mobility	Dummy variable that distinguishes between those firms that moved (value = 1) and those that did not move (value = 0) between the creation and the closure of the firm. It was recoded from the initial variables *EntrMun* – which indicates the municipality where the firm was initially registered – and *ClosMun* – the municipality where the firm was registered at the moment of closure.	EUSTAT: Basque Statistical Institute

Name	Definition	Source
Indusentry	Quantitative variable that measures the annual entry rate of each industry sector. It is calculated by dividing gross annual entries by the existing firms in each of the seventeen industry sectors, following an officially recognised industry sector classification suggested by the Basque Statistical Institute.	EUSTAT: Basque Statistical Institute
Indusexit	Quantitative variable that measures the annual exit rate of each industry sector. It is calculated by dividing gross annual exits by the existing firms in each of the seventeen industry sectors, following an officially recognised industry sector classification suggested by the Basque Statistical Institute.	EUSTAT: Basque Statistical Institute
Construc	Dummy variable that distinguishes between firms which operate in the construction industry sector (value = 1) and those that do not (value = 0). It was created by recoding the initial variable *CNAE* which organises firms following an officially recognised industry sector classification suggested by the Basque Statistical Institute.	EUSTAT: Basque Statistical Institute
Edu	Dummy variable that distinguishes between firms which operate in the education sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute
Hotel	Dummy variable that distinguishes between firms that operate in the hotel and catering industry sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute
Manufact	Dummy variable that distinguishes between firms that operate in the manufacturing industry sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute
Retail	Dummy variable that distinguishes between firms that operate in the retail and reparation industry sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute

Name	Definition	Source
Servicesco	Dummy variable that distinguishes between firms that operate in the business services industry sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute
Servicespers	Dummy variable that distinguishes between firms that operate in the personal services industry sector (value = 1) and those that do not (value = 0). It was recoded from the initial variable *CNAE* following the same procedure as the variable *Construc*.	EUSTAT: Basque Statistical Institute
Construc*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the construction industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variable *Immigrant* and *Construc*.	EUSTAT: Basque Statistical Institute
Edu*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the education industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *Edu*.	EUSTAT: Basque Statistical Institute
Hotel*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the hotel and catering industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *Hotel*.	EUSTAT: Basque Statistical Institute
Manufact*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the manufacture industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *Manufact*.	EUSTAT: Basque Statistical Institute
Retail*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the retail and reparations industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *Retail*.	EUSTAT: Basque Statistical Institute
Servicesco*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the business services industry sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *ServicesCo*.	EUSTAT: Basque Statistical Institute

Name	Definition	Source
Servicespers*Immi	Dummy variable that distinguishes between foreign-owned firms that operate in the personal services sector (value = 1) and the remaining options (value = 0). It was calculated by multiplying the variables *Immigrant* and *ServicesPers*.	EUSTAT: Basque Statistical Institute
Urban	Dummy variable that distinguishes between firms located in an urban area (value = 1) and those located in a rural area (value = 0). It was recoded from the variable *Entreg* that groups annual entries in twenty regions following the official classification of Basque regions suggested by the Basque Statistical Institute. The three regions where the capital of each province is located were urban areas and the remaining regions were rural.	EUSTAT: Basque Statistical Institute
Regunempl	Dummy variable that distinguishes between regions with a higher unemployment rate than the average of the Basque Country between years 1991 and 2001 (value = 1) and regions with an unemployment rate lower than the average (value = 0). It was added by the author to the initial database by following an officially recognised classification of the regions of the Basque Autonomous Community suggested by the Basque Statistical Institute.	EUSTAT: Basque Statistical Institute
Regimmi	Dummy variable that distinguishes between regions with a higher immigration rate than the average of the Basque Country between years 1991 and 2001 (value = 1) and regions with an immigration rate lower than the average (value = 0). It was added by the author to the initial database by following an officially recognised classification of the regions of the Basque Autonomous Community suggested by the Basque Statistical Institute.	EUSTAT: Basque Statistical Institute and Spanish Observatory of Immigration

Appendix 1.3   Description of variables of the third set of analysis: Determinants of earnings

Name	Definition	Source
Self-employed	Dummy variable that distinguishes between self-employed (value = 1) and salaried (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005 and 2006
College	Dummy variable that distinguishes between people with college education (value = 1) and lover education (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005 and 2006
Age	Continuous variable which indicates the age of individuals at the moment of the interview	GEM Spain: Regional aggregated databases of 2005 and 2006
Gender	Dummy variable that distinguishes between male (value = 1) and female (value = 0) individuals	GEM Spain: Regional aggregated databases of 2005 and 2006
Highincome	Dummy variable that distinguishes between individuals who earn an income higher than € 1,200/month (value = 1) and individuals who earn a lower income (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Africa	Dummy variable that distinguishes between individuals born in African countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Europe	Dummy variable that distinguishes between individuals born in European countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Namer	Dummy variable that distinguishes between individuals born in North American countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Samer	Dummy variable that distinguishes between individuals born in South American countries (value = 1) and individuals born elsewhere (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
TeaMot	Dummy variable that distinguishes between opportunity-driven (value = 1) and necessity-driven (value = 0) entrepreneurs	GEM Spain: Regional aggregated databases of 2005 and 2006
Extractive	Dummy variable that distinguishes between entrepreneurs operating in extractive industries (value = 1) and those working in other sectors (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Transforming	Dummy variable that distinguishes between entrepreneurs operating in transforming industries (value = 1) and those working in other sectors (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Business	Dummy variable that distinguishes between entrepreneurs operating in business services (value = 1) and those working in other sectors (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006

Name	Definition	Source
Consumer	Dummy variable that distinguishes between entrepreneurs operating in consumer-oriented services (value = 1) and those working in other sectors (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
Urban	Dummy variable that distinguishes between individuals who live in an area with more than 5,000 inhabitants (value = 1) and those who live in an area with a lower number of inhabitants (value = 0)	GEM Spain: Regional aggregated databases of 2005 and 2006
RegGDPcap04	Continuous variable that describes the regional GDP per capita in 2004	Spanish National Statistics Institute (INE)

Appendix 2 Market entry, exit and turbulence rates in the Basque Country

Appendix 2.1 Annual entry rates by industry sector (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Media
Agriculture	18.18	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00
Fishing	-	-	-	-	-	-	-	-	-	-	-	-
Extractive industries	4.82	14.77	14.29	11.27	12.86	4.41	0.00	3.13	8.45	3.13	7.58	8.02
Manufacturing	10.21	10.30	14.99	11.44	17.67	9.72	9.74	9.37	9.24	9.90	8.04	10.91
Electricity, gas and water	5.24	3.98	5.83	4.35	13.36	5.41	5.80	5.14	17.93	16.13	8.64	7.73
Construction	15.21	9.78	17.99	14.91	16.41	15.10	18.17	17.60	17.51	17.03	15.79	16.07
Retail and reparation	11.78	9.77	12.11	11.35	12.51	10.42	10.34	10.58	12.05	10.97	9.31	11.02
Hotel and catering	12.06	12.37	12.19	11.18	11.54	11.37	11.32	13.66	13.11	13.74	13.94	12.38
Transport and communication	6.63	5.54	11.53	56.47	9.45	8.29	8.95	8.53	7.45	8.80	6.80	13.09
Banking and insurance	8.52	6.05	8.64	10.86	6.22	7.59	8.00	12.84	12.47	8.55	6.68	8.71
Business services	16.97	16.63	16.39	17.28	20.85	16.39	15.89	16.13	16.02	15.41	14.65	16.43
Public administration	0.00	16.29	6.06	0.42	27.99	0.92	18.15	0.87	1.09	2.14	1.06	6.65
Education	9.25	10.84	12.34	9.95	15.84	11.63	10.80	9.97	11.70	10.54	8.36	10.97
Health and social services	8.51	6.97	8.39	7.10	7.59	13.17	9.64	8.07	9.23	9.43	8.64	8.83
Personal services	8.55	10.88	13.27	11.73	9.18	7.89	12.57	9.27	9.22	9.47	10.26	10.18
Housing services	44.44	40.00	44.44	14.29	0.00	57.14	98.82	0.74	0.11	0.11	0.32	20.08
Extraterritorial bodies	1.92	26.19	2.38	0.00	4.76	0.00	9.52	0.00	0.00	0.00	2.86	4.41
Total	11.73	10.51	13.22	16.24	13.58	11.39	12.49	11.90	12.32	12.05	10.97	12.36

Source: Basque Statistical Institute

Appendix 2.2   Annual exit rates by industry sector (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Media
Agriculture	9.09	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.67
Fishing	-	-	-	-	-	-	-	-	-	-	-	-
Extractive industries	10.84	26.14	14.29	9.86	7.14	5.88	1.56	3.13	7.04	6.25	10.61	9.92
Manufacturing	11.79	20.88	10.35	10.79	8.32	9.65	8.66	12.80	8.70	9.00	7.52	10.72
Electricity, gas and water	6.11	1.33	7.08	20.00	4.61	5.41	3.57	43.46	10.34	3.87	3.70	10.16
Construction	9.89	26.59	13.57	10.69	9.04	12.12	12.36	11.97	12.53	12.93	11.50	12.92
Retail and reparation	11.60	15.18	12.82	15.51	9.04	13.28	10.11	14.41	10.54	10.03	8.15	11.93
Hotel and catering	14.33	9.74	10.44	9.84	10.39	13.07	13.86	23.49	12.65	15.54	12.47	13.33
Transport and communication	6.92	13.47	17.58	2.52	5.90	8.25	9.54	9.23	9.70	8.53	6.86	8.22
Banking and insurance	11.64	23.30	14.88	4.21	4.09	6.59	8.67	13.00	7.91	6.46	5.49	10.09
Business services	21.89	10.68	18.76	9.08	8.20	11.78	12.55	10.27	10.91	10.02	8.58	11.67
Public administration	13.53	9.49	0.00	23.53	1.31	2.11	0.98	1.30	0.54	0.21	0.43	4.29
Education	13.05	20.30	11.18	10.48	8.14	9.08	10.04	11.01	10.36	8.64	9.69	11.11
Health and social services	7.16	8.41	5.29	5.97	11.04	6.98	7.89	13.05	7.78	7.81	5.83	7.97
Personal services	17.26	13.87	24.45	5.44	5.05	7.16	6.68	6.90	6.14	7.96	5.63	9.85
Housing services	44.44	20.00	33.33	42.86	0.00	0.00	0.21	0.00	0.11	0.11	0.00	0.32
Extraterritorial bodies	46.15	2.38	0.00	4.76	0.00	9.76	2.38	7.32	2.63	8.11	0.00	8.59
Total	13.03	15.90	13.78	10.58	8.35	11.08	10.40	13.01	10.17	10.18	8.46	11.26

Source: Basque Statistical Institute

Appendix 2.3   Annual rates of turbulence by industry sector (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Media
Agriculture	27.27	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.67
Fishing	-	-	-	-	-	-	-	-	-	-	-	-
Extractive industries	15.66	40.91	28.57	21.13	20.00	10.29	1.56	6.25	15.49	9.38	18.18	17.94
Manufacturing	21.99	31.18	25.34	22.23	26.00	19.38	18.41	22.17	17.94	18.90	15.56	21.63
Electricity, gas and water	11.35	5.31	12.92	24.35	17.97	10.81	9.38	48.60	28.28	20.00	12.35	17.89
Construction	25.10	36.37	31.56	25.61	25.45	27.22	30.53	29.58	30.04	29.96	27.29	28.99
Retail and reparation	23.38	24.95	24.93	26.87	21.55	23.70	20.45	24.99	22.59	21.00	17.46	22.95
Hotel and catering	26.39	22.11	22.63	21.02	21.92	24.44	25.17	37.15	25.76	29.29	26.40	25.70
Transport and communication	13.55	19.01	29.11	58.99	15.34	16.54	18.49	17.75	17.15	17.33	13.66	21.31
Banking and insurance	20.16	29.34	23.51	15.07	10.31	14.18	16.67	25.84	20.38	15.01	12.16	18.80
Business services	38.86	27.32	35.15	26.36	29.05	28.17	28.44	26.40	26.94	25.43	23.23	28.10
Public administration	13.53	25.78	6.06	23.95	29.30	3.03	19.13	2.17	1.63	2.36	1.49	10.94
Education	22.30	31.14	23.52	20.42	23.98	20.71	20.84	20.98	22.06	19.18	18.04	22.08
Health and social services	15.67	15.38	13.69	13.07	18.63	20.16	17.53	21.12	17.01	17.24	14.47	16.81
Personal services	25.81	24.75	37.72	17.17	14.23	15.05	19.25	16.17	15.36	17.44	15.88	20.03
Housing services	88.89	60.00	77.78	57.14	0.00	57.14	99.04	0.74	0.21	0.21	0.32	20.39
Extraterritorial bodies	48.08	28.57	2.38	4.76	4.76	9.76	11.90	7.32	2.63	8.11	2.86	13.00
Total	24.76	26.41	27.00	26.82	21.93	22.47	22.88	24.91	22.49	22.23	19.43	23.62

Source: Basque Statistical Institute

Appendix 3   Cox regression analyses for simulations

Appendix 3.1 Cox regression analysis for simulations: Native-owned firms

	Model I *N=66,988 Significance=0.000*	
	B	*Exp(B)*
Firm internal variables		
Firm resources and strategies		
Small	0.14**	0.87
Diversific	-0.68**	1.97
Firm external variables		
Industry sector		
Construc	0.31**	0.73
Education	0.24**	0.79
Hotel	0.12**	0.88
Manufact	0.18**	0.83
Retail	0.12**	0.89
Servicesco	0.27**	0.76
Servicespers	0.11**	0.90
Location		
Urban	0.04**	0.96

** Correlation is significant at the 0.01 level (1 –tailed)
* Correlation is significant at the 0.05 level (1 –tailed)

Appendix 3.2   Cox regression analysis for simulations: Foreign-owned firms

	Model I *N=1,244 Significance=0.002*	
	B	*Exp(B)*
Firm internal variables		
Firm resources and strategies		
Small	0.39†	0.71
Diversific	-0.39**	1.47
Firm external variables		
Industry sector		
Construc	0.27*	0.76
Education	0.02	0.98
Hotel	0.06	0.94
Manufact	-0.05	1.05
Retail	0.04	0.96
Servicesco	0.21	0.81
Servicespers	0.18	0.83
Location		
Urban	0.07	0.93

† Correlation is significant at the 0.01 level (1 –tailed)
** Correlation is significant at the 0.05 level (1 –tailed)
* Correlation is significant at the 0.1 level (1 –tailed)

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