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WOMEN, ENTREPRENEURIAL ACTIVITY AND TERRITORY: DIFFERENCES OR MYTHS?

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“WOMEN, ENTREPRENEURIAL ACTIVITY AND TERRITORY: DIFFERENCES OR MYTHS?”

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Abstract: Women’s presence in entrepreneurial activity is relatively recent. Academic research starts to deal specifically with this issue halfway through the 1970’s. From different social and academic forums it has been persistently stated that entrepreneurial women show differences and/or discrimination by gender, and, although discrepancies exist (depending on the predominant culture and the ideas from which the analysis or the case of study is approached), a great deal of the research corroborates this, mainly from four complementary viewpoints: personal features and motivations, leadership style and strategic choice of business, financing obstacles and performance and results. This research goes into this area in depth by examining the behaviour of entrepreneurial women, adopting a regional focus and approaching the analysis in two ways: opinions provided in a survey regarding personal and business features by entrepreneurial women and men, and the results offered by the latter (women and economy average) on the basis of the financial information kept in commercial registries. Both views and their comparison by groups make it easier to draw some interesting conclusions, which are contrasted with literature in order to emphasize the most outstanding differences.

Key words: entrepreneurial women, personal features, performance and results, NUTS-1 regions

1. Introduction

Among all the social changes that took place in the 20th century, the influence women have had on economic development represents a prominent phenomenon, and their professionalism and leadership in some business spheres has become an indisputable fact in recent decades. Since the 1980’s, women have gained ground in the areas of training and university studies, and this is demonstrated by the growing level of qualifications held by women entering the labour market. In some of the most advanced countries, women currently comprise the majority in qualified professions (The Economist, 2010) and have a growing participation in entrepreneurial activity (GEM, 2008).

The objective of this research is to make an in-depth analysis of the characteristics, behaviour and results of women’s entrepreneurial activity by comparing the most significant aspects of research in this regard. From a regional viewpoint, the specific case of Spanish entrepreneurial women is studied by adopting a comparative approach in order to establish the difference between entrepreneurial women and the economic average. An attempt has been made to separate the analysis and conclusions in this work from the “dominant male norm” by Ahl (2002) regarding the researching style of women’s entrepreneurial activity.

Consequently, this research analyses the case of study from two different approaches. On the one hand, entrepreneurial women’s personal and business characteristics are analysed in order to determine the differences compared with entrepreneurial men, using the information provided by an ad hoc survey conducted among a representative sample (women and economy as a whole). On the other hand, the performance and results of samples of companies managed by women and of the economy as a whole are obtained by using

economic and financial indicators, for which companies' official accounting information from commercial registries is used. On the basis of these two approaches, we try to assess the qualitative and quantitative behaviours that define women's entrepreneurial activity.

The regional approach proposed is based on the different entrepreneurial dynamics and the heterogeneity of the entrepreneurial fabric regarding distribution by sizes and activity sectors, which implies different models of entrepreneurship in the Spanish economy and its regions (García-Tabuenca, Crespo-Espert and Cuadrado-Roura, 2010). This situation is a consequence of the variety of socio-economic environments originating in the course of the process of industrialisation and economic growth, particularly since the second half of the 20th century, which has had an unavoidable effect on the territorial composition regarding the allocation of factors and resources and the organisation of the markets. In section 2 (Sources and methodology), the different regional behaviour adopted by the rate of entrepreneurship is explained in more depth.

This research, together with this introduction, comprises six sections. In the second one, some of the works and authors consulted in this academic research are detailed. The third section specifies the sources and methodology used and presents a national and regional entrepreneurship model. The fourth section considers the analysis of the results obtained in the survey and, in the fifth section, the efficiency of women's entrepreneurial initiatives is studied. Finally, the sixth section incorporates the results of the previous sections, draws the main conclusions and offers some ideas for further discussions and future researches.

2. Research on entrepreneurial women

The study of some of the most representative researches regarding women's entrepreneurial activity allows the synthesis of certain aspects which are clearly highlighted. Table 1 shows a summary in chronological order of the works and authors considered on the basis of five subjects of study: features and motivations, strategic choice, leadership, obstacles and financing standards, and performance and results¹.

Table 1. **Authors and subjects studied regarding women's entrepreneurial activity, 1973-2010**

FEATURES AND MOTIVATIONS:	
Independence, satisfaction at work, obtaining of income...	Schwartz (1976)
Financial independence, being their own boss, using their talent...	Hisrich & O'Brien (1981, 1982)
Similar features. Independence, economic opportunity and satisfaction at work; higher training level but lower financial and technical knowledge. They come from middle-upper class families	Hisrich & Brush (1984), Brush & Hisrich (1991)
Different motivations. Personal satisfaction versus being their own boss	Scott (1986)
Independence, autonomy, dissatisfaction at work, combining work and family life. More training in liberal than in technical professions	Cromie (1987)
Autonomy, leadership, risk assumption, absence of emotions, reduced need of support... are men's characteristic features	Buttner & Rosen (1988)
Family businesses enable to combine work and family life	Salganicoff (1990)
Higher degree of autonomy and less risk aversion	Sexton & Bowman-Upton (1990)
Combining work and family life, more intensively than men	Kolvreid et al. (1991)

¹ This table is in keeping with a longer research carried out by the same authors, which constitutes the framework of this work. Spanish entrepreneurial activity and its evolution from a territorial, sectorial and business-size viewpoint is examined in the table, and, since 2002, it represents a line of research of the Instituto Universitario de Análisis Económico y Social (IAES), which belongs to the Universidad de Alcalá, and is financed by the Fundación Rafael del Pino.

Lack of human capital and technical and managerial skills. They are the main persons responsible for household chores	Loscocco et al. (1991)
They differ widely regarding education, labour experience, objectives, skills...	Brush (1992)
Need of combining work and family life	Buttner (1993)
Less business experience	Tigges & Green (1994)
Lack of suitable human and financial capital. Less business experience	Carter et al. (1996)
Similarities with regard to the satisfaction of having a good relationship in family business	Cole (1997)
Lack of business experience	Haynes & Haynes (1999)
Independence and control over their own destiny	Carter (2000)
Independence, combining personal and family life, dissatisfaction with previous job, search for social status and power	Orhan & Scott (2001)
They do economic, administrative degree courses, more than technical ones. They lack financial management experience	Verheul & Thurik (2001)
Less financial management experience and less time devoted to establish professional and institutional contacts. They tend to work on a part-time basis	Verheul (2005)
Different perceptions of success according to family factors	Ramos et al. (2003)
Combining work and family life by means of freedom	Justo et al. (2006)
Daughters working in family businesses are discriminated towards administration areas instead of more technical areas	Martínez-Jiménez et al. (2007)
Power, personal reasons, wealth creation... They have different objectives	Brush & Gatewood (2008)
Less human capital levels, less technical degree courses. More adverse to risk	Coleman & Robb (2009)
There is a social and labour discrimination that influences their own features as entrepreneurs and their companies	Rodríguez & Santos (2008)
Less experience in the industrial sector	Verheul et al. (2008)
Different preferences regarding objectives	Gatewood et al. (2009)
Giving priority to the flexibility to balance work and family. Less age and experience	Díaz & Jiménez (2010)

LEADERSHIP:

Autocratic management style	Schwartz (1976)
Management objective: quality and problem-solving based on intuition and rationality	Loden (1987)
They organise themselves in a cooperative manner	Cole & Wolken (1995)
Studies about management style and gender show contradictory results	Barberá et al. (2000)
They have a more specialised strategy, aimed at one sector	Verheul (2005)
The knowledge acquired in a company leads to economic growth in the creation of other companies	Audretsch (2005)
Different perceptions of success according to family factors	Justo et al. (2006)
If they start their activity, in recognition of their business, they are more growth-orientated	Morris et al. (2006)

STRATEGIC CHOICE:

Lack of attitude and determination in managerial positions	Schein (1973, 1975)
They choose traditional sectors because accessing financing is less difficult	Hisrich & O'Brien (1981, 1982)
They choose traditional sectors because accessing financing is less difficult	Brush & Hisrich (1991), Hisrich & Brush (1984)
The choice in the industrial sector originates a less advantageous position	Loscocco et al. (1991)
They choose a smaller size, generally in personal services, trade and hotel and catering business	Clark & Janes (1992)
They choose smaller, more concentrated companies in personal services, the textile sector...	Tigges & Green (1994)
They choose smaller companies devoted to the textile sector	Cole & Wolken (1995)
Business size is smaller	Carter et al. (1996)
Public support to microenterprises strengthens sectorial segregation	Ehlers & Main (1998)
Smaller dimensions in business size	Haynes & Haynes (1999)
They choose companies in the services sector	Carter (2000)
They create new and smaller companies	Coleman (2000)
They choose smaller companies devoted to personal services, the textile sector...	Verheul & Thurik (2001)
Retail and services companies	Ahl (2002)
Smaller companies, considering the lower sector experience	Carter et al. (2003)
They create more new businesses in the services sector	Verheul (2005)
Their work is based on cooperation and team work and they give priority to quality vs success	Ramos et al. (2003)
Less productivity	Verheul et al. (2008)
They tend to have smaller companies concentrated on the services and textile sectors	Coleman & Robb (2009)
Search for slow and stable growth	Díaz & Jiménez (2010)

OBSTACLES AND FINANCING STANDARDS:

Discrimination to obtain funds at the launch of the activity. They underestimate operational and marketing costs	Schwartz (1976)
Banks are influenced by gender when granting loans	Hisrich & O'Brien (1981, 1982)

Lack of funds and guarantees at the beginning. Greater difficulty in accessing financing for non-traditional businesses. Lack of financial planification experience	Hisrich & Brush (1984), Brush & Hisrich (1991)
Difficulties in accessing funds. These differences disappear when the same business plan is implemented	Buttner & Rosen (1988, 1989)
Discrimination as a consequence of social prejudices	Salganicoff (1990)
Less material resources for investing	Loscocco et al. (1991)
Less inclination towards risk	Shane et al. (1991)
More reluctant to ask for a loan, afraid of being rejected	Tigges & Green (1994)
There are no differences in the use of financial management services	Cole & Wolken (1995)
There are no differences in accessing funds	Carter et al. (1996)
Less participation and greater difficulty in accessing networks	Brush (1997)
Low capitalisation companies	Ehlers & Main (1998)
Lack of human and financial resources. Less prone to ask for credit lines. They prefer to ask for a loan from family and friends	Haynes & Haynes (1999)
Discrimination due to social prejudices and stereotypes	Carter (2000)
There is no discrimination in accessing funds, but there is regarding size and age: interests and guarantees required are greater	Coleman (2000)
Greater difficulty in accessing capital, either from banks or business angels...	Verheul & Thurik (2001)
Greater difficulty in obtaining financing for the creation of companies	Carter et al. (2003)
Less equity than borrowed funds, due to the lower savings generated in the past and their aversion to risk	Verheul (2005)
Support for reducing obstacles in financing the entrepreneurial activity	Verheul et al. (2002)
Difficult access to seed capital and difficult movement of resources	Sandberg (2003)
More adverse to get themselves too much into debt, they require less proportion of debt. Banks have a worse perception of them	Carter et al. (2004)
Similar criteria for evaluating the credit request, little differences with regard to the granting requirements	Carter et al. (2007)
Less committed to business	Grilo et al. (2007)
Greater obstacles due to stereotypes, less capacity for social, human and financial capital accumulation	Brush & Gatewood (2008)
Less financial and social capital. More adverse to risk	Verheul et al. (2008)
Lower seed financial capital, more prone to use self-financing than external sources	Coleman & Robb (2009)
The higher the training and experience they have, the more probabilities of obtaining external financing as capital	Gatewood et al. (2009)
Greater financial burden due to the high interest and guarantees required	Muravyev (2009)
Low capitalisation industries have an influence on the lower access to financing	Kappler & Parker (2010)

PERFORMANCE AND RESULTS:

Performance weaknesses in finance, marketing, stocks, production...	Hisrich & Brush (1983)
Worse performance in financial indicators	Cuba et al. (1983)
Less creation of employment, profitability...	Longstreth et al. (1987)
There are no differences in the taking of decisions about company's growth	Sexton & Bowman-Upton (1990)
Similar survival and success ratios	Kalleberg & Leicht(1991)
Less success explained by the smaller businesses and less profitable industries owned, conditioned by the lack of experience	Loscocco et al. (1991)
Different entrepreneurial performances originate lower profitability results, turnover, employment...	Brush (1992)
Gender has a significant effect on business success. Lower sales volume	Tigges & Green (1994)
As regards to high-technology companies, survival and creation of employment ratios are similar	Westhead et al. (1995)
Lower sales volume and growth	Changati & Parasurama (1996)
Less staff and lower probability of employment growth and, therefore, lower turnover and assets value	Rosa et al. (1996)
Low profitability businesses	Ehlers & Main (1998)
Lower sales volume	Carter (2000)
Lower benefit	Verheul & Thurik (2001)
The smaller dimension and equity generate a lower income and benefit output, although economic and financial profitability are similar	Waston (2002)
Higher probability of failure due to the lack of human and financial capital	Carter et al. (2003)
Less prone to increase business dimension	Verheul (2005)
The result of his research does not find differences with regard to the orientation to profit	Sandberg (2003)
Businesses are less prosperous, both in rural and urban areas, being the difference greater in the latter	Bird & Sapp (2004)
It has been observed a decrease in barriers for companies' creation, but it has not originated an increase of companies	Carter & Shaw (2006)
Less probability of progress	Grilo et al. (2007)
Returns to scale are greater, therefore growth profit is higher	Sabarwall & Terrell (2008)
Lower sales, profitability and employment levels	Coleman & Robb (2009)
Financing is more difficult due to the belief in myths about women	Gatewood et al. (2009)

Source: own elaboration

3. Sources and methodology

The choice of the information sources and the methodology of analysis used is conditioned by the objective of the study. The regional differences observed in the entrepreneurial dynamics are also relevant in the present research. That is the reason why we firstly explain the Spanish regional distribution and then, the territorial approach suggested is justified.

Spain has 17 political-administrative regions known as ‘autonomous communities’ and two autonomous cities (Ceuta and Melilla), equivalent to European NUTS-2 regions (determined by Eurostat). Each region or ‘community’ has a high degree of political-administrative and economic decentralization, set forth in their respective statutes (or laws) regulating their relation with the State.

However, we have used a different wider territorial classification, which groups together the 17 NUTS-2 into six NUTS-1 regions, also according to Eurostat (for the purpose of this article, the Canary Islands have been included in the NUTS-1 SOUTH Region). This new regional classification provides two advantages. On the one hand, it allows us to increase the number of observations under study for each region, as the information is taken from a representative survey of 608 entrepreneurs, as is explained further on in this section. And, on the other hand, it allows us to simplify the understanding of the women entrepreneurs within a country and its regions. This aggregated territorial treatment is well known and applied in the regional analysis of the European Union.

The evolution in Spain of the rate of entrepreneurship (enterprises over working population) shows that, regionally speaking, there are significant differences between the six NUTS-1. The model used follows the one suggested by Carree et al. (2002), which explains the development of entrepreneurial activity on the basis of its optimum rate of equilibrium ($E_{i,t}^*$), from the unemployment rate ($U_{i,t}$) and the participation of wages over operating surplus ($S_{i,t}$). At the same time, the rate of equilibrium depends on the level of economic development ($GDPpc_{i,t}$), and this relationship is expressed in parabolic form (Note 1). The results of this model are shown in Table 2.

Table 2. Results of the evolution of entrepreneurial activity in the Spanish NUTS-1

Variables	$\text{Log}(E_{i,t}^*)$	$E_{i,t}$
Constant	-4.3857 **	-97.2568*
$GDPpc_{i,t}$	1.9709***	
$GDPpc_{i,t}^2$	-0.1011***	
$E_{i,t}^*$		1.5658***
$U_{i,t}$		1.2164***
$S_{i,t}$		-5.1564**
Observations		
7 sectors * 20 years	140	140
R^2	0.8057	0.8751
Adjusted R^2	0.7938	0.8436
F	67.89***	27.79***

*** Significance level of 0.00, ** significance level of 0.02, * significance level of 0.10

Source: own elaboration

The results show both a globally as well as an individually significant adjustment and the estimated signs for the parameters coincide with the generated expectations. This model is graphically represented, at a national and regional level, in Figure 1.

Figure 1. **Evolution and deviation of the rates of entrepreneurship of the Spanish economy and the NUTS-1 Regions, 1989-2008**

FIGURE 1

Source: own elaboration

The same general behaviour guideline (related to the cycle) is observed for Spain and its regions, although some differences exist which must be taken into consideration. Firstly, East, Northeast and Madrid regions register high rates compared with the Centre, Northwest and mainly the South. Secondly, the impact of the crisis since the year 2007 can be interpreted as the motive for the fall in the rate of entrepreneurship, although this has decreased nearly to the optimum in some regions (Madrid, Centre and Northeast) and it has dropped to below the optimum in the others (South, East and Northeast). That is to say, the crisis has had a greater impact on the entrepreneurship of the latter areas. Hence, the entrepreneurial dynamic in Spain and its regions show some differences and these must not be disregarded in the analysis.

Within this territorial context, we have used two data sources: the SABI database and the data taken from a specific survey. Also several qualitative (description of the survey results) and quantitative techniques (statistical, econometric and of efficiency economic-financial analysis) have been used.

SABI is an economic-financial database of the majority of Spanish enterprises (AMADEUS is the European database with the same criteria), and includes statements of account for the period between 2001 and 2008 for a high percentage of those companies which registered their annual accounts in commercial registries. More specifically, we have used the version published on February 2010, including 1,212,820 enterprises. This database provides the necessary information for obtaining the performance and entrepreneurial results. The appropriate handling of information has been required in order to extract statistically

significant samples of the whole Spanish economy (7,915 enterprises) and of the companies of the regions (Madrid: 1,964; Centre: 1,945; East: 1,983; South: 1,969; Northwest: 1,935, and Northeast: 1.939). Moreover, representative samples have been obtained for four business sizes (micro, small, medium, and large enterprises) and seven sectors (agriculture, extractive industries, traditional manufacturing, advanced manufacturing, construction, commercial distribution and rest of services). In order to determine the sample sizes, we have used the SOTAM program (Sistema de Optimización para Tamaños de Muestra or Optimisation System for Sample Sizes) by Manzano Arrondo (2009).

The aforementioned survey is based on the data obtained from the representative samples of the Spanish business structure and the population of entrepreneurial women extracted from the SABI database, from which 608 complete responses were obtained. The survey was made up of two groups: firstly, a group of 500 entrepreneurs already surveyed in 2002 and 2006 who were subjected to a more detailed follow-up survey; and, secondly, a new group of entrepreneurial women. Complete responses were obtained from 371 entrepreneurs in the first group, and 237 from the second. Each questionnaire was comprised of 72 questions, classified into four sections: a) characterisation of the entrepreneur (features, motives...), b) characterisation of the enterprise, c) growth policies, d) sources of financing the enterprise and, finally, matters regarding the assessment of policies related to the support and promotion of business creation.

After tabling and tidying up this information, comprising 150 variables, the objective was to determine which aspects of the entrepreneurs revealed more gender differences following the approaches in literature in order to contrast them.

Previous partial estimates were carried out which referred to each section of the survey by using econometric techniques with logit models, excluding from the group of variables those showing a lower explanatory capacity. Finally, 18 variables were selected as the ones that showed more discrimination between entrepreneurial men and women. These 18 variables, with their identification and description, as well as supporting academic literature are shown in Table 3. The explained variable of this logit model, taken as dichotomic, adopts the value 0 when the entrepreneur is a man and 1 when it is a woman.

Table 3. Variables selected from the survey

Variable	Description	References
Age	Entrepreneur's age at the time of completion of the survey	
Education	Qualitative variable which represents the degree of state-regulated training: 4, postgraduate studies; 3, university degree; 2, vocational training; 1, secondary and/or high-school studies; 0, primary studies or no studies	Hisrich & Brush (1984), Brush & Hisrich (1991), Verheul & Thurik (2001), Coleman & Robb (2009)
Hs_home	Qualitative variable which represents the amount of hours devoted to household care: 2, more than three hours; 1, between one and three hours; 0, less than one hour	Cromie (1987), Salganicoff (1990), Colvereid et al. (1991), Buttner (1993), Orhan & Scott (2001), Justo et al. (2006)
Experience	Year when the entrepreneur started the activity	Brush (1992), Tigges & Green (1994), Carter et al. (1996), Haynes & Haynes (1999), Díaz & Jiménez (2010)
Conc_decisions	Dummy: 1, when the entrepreneur concentrates all the decisions; 0, if he/she delegates	Schwartz (1976)
Professional	Dummy: 1, his/her previous activity was self-employed or professional; 0, other	
Motiv_enough	Dummy: 1, one of the three main reasons for creating the company was to obtain enough income; 0, other	Schwartz (1976)

S_Construction	Dummy: 1, if the company belongs to the construction sector; 0, other	Clark & Janes (1992), Carter (2000), Coleman & Robb (2009)
Strategic_Start-up	Qualitative variable which indicates the choice of strategic opportunity vs inertia in starting-up the initiative: values between 0 and 6 according to the degree of freedom regarding location, timing and sector; 0 is the minimum value; 6 is the maximum	Audretsch (2005)
Family	Percentage of relatives in staff	Martínez-Jiménez et al. (2007)
Inheritance	Dummy: 1, if the company was inherited; 0, other	Coleman (2000), Carter et al. (2003)
Women%	Percentage of women in staff	Cole & Woliken (1995), Brush (1997), Rodríguez & Santos (2008)
Success_service	Dummy: 1, customer service has been one of the three reasons for company's success; 0, other	
Success_quality	Dummy: 1, the quality of the product has been one of the three reasons for success; 0, other	Loden (1987), Ramos et al. (2003)
Success_innova	Dummy: 1, innovation and technical capacity has been one of the three reasons for success; 0, other	Verheul et al. (2008)
Burden_finance	Dummy: 1, access to financing has been one of the three main problems for the creation of the company; 0, other	Hisrich & O'Brien (1981, 1982), Hisrich & Brush (1984), Buttner & Rosen (1988, 1989), Brush & Hisrich (1991), Carter (2000), Verheul & Thurik (2001), Carter et al. (2003), Gatewood et al. (2009), Kappler & Parker (2010)
ITC	Qualitative variable which represents the degree of use of ICTs in the company: values between 0 and 4; 0 is the minimum value and 4 is the maximum	Brush & Hisrich (1991), Verheul & Thurik (2001), Martínez-Jiménez et al. (2007)
Pub_grants	Dummy: 1, the company obtained public funding; 0, other	Ehlers & Main (1998), Verheul et al. (2002)

Source: own elaboration

The examination of the efficiency and the economic-financial performance of the companies in the regions –for the entrepreneurial sector as a whole and for the female cluster- and the whole economy has been carried out using the extraction of the accounting values which are used to calculate the following five indicators: a) economic profitability, b) financial profitability, c) productivity, d) EBITDA over total assets, and e) EBITDA over turnover. This quantitative analysis of indicators, which has been calculated using the mean statistics, allows us to identify similarities and differences in the behaviours of the enterprises from the six NUTS-1 regions. The choice of this contrafactual approach is in line with the method of project assessment used by the Assessment Unit of the EuropeAid Co-operation Office of the European Commission (European Commission, 2006) and with its use in literature for the elaboration of assessment studies on public subsidies to business funding (Bergström, 2000; Harris and Trainor, 2005; and Tokila et al., 2008).

The ratio of economic profitability reflects the appropriate use of the physical investment in fixed and operating assets through the quotient between earnings before interests and taxes and the annual average total assets of the company. The ratio of financial profitability, defined as the relation between the net result of the company and the equity used indicates the surplus of free-disposal for the entrepreneur as compensation for the risk taken. Productivity measures the added value obtained from work and indicates how the appropriate combination between the human factor and the technical structure affects the generation of wealth by the company. The EBITDA (Earnings before interests, taxes, depreciation and amortization) is the most accurate indicator of the liquid funds generated by a company which is subject neither to a different application of accounting criteria of imputation of amortizations and depreciations or to tax criteria, nor to the choice of binomial own funding-external funding in

the financial structure of the company. In this study, we have made this relative to both total assets and turnover.

The results obtained from the counterfactual analysis by means of comparisons should be validated using statistical contrasts. The aim of this confirmatory analysis is to demonstrate that the differences graphically observed between the averages of the indicators of the sectors under study are statistically significant. We have opted for the Kruskal-Wallis test and Brown-Forsythe statistics as the distributions of values are not normal (which has been proven applying the Kolmogorov-Smirnov test) and their variances are not equal (proven using the Levene statistics). These tests are complemented with the Tamhane test, which is useful under these circumstances to determine –through multiple comparisons by pairs- the different averages.

4. Differentiating characteristics of entrepreneurial women

Table 4 shows the *logit* estimation results for the total set of surveyed entrepreneurs –men and women-, as well as for each of the six regions studied. A positive sign indicates that the higher the value of the explanatory variable, the greater the probability that the observation refers to an entrepreneurial woman. On the contrary, a negative sign shows a higher probability that the entrepreneur is a man.

Generally speaking, the model suggested, including the 18 selected variables, offers as a whole –nationally and regionally- a high discriminatory ability based on gender regarding entrepreneurial activity, with very acceptable pseudo R2 values. Only two variables show a high significance when considered individually, both nationally and regionally: the number of hours devoted to household care by entrepreneurial women/men (Hs_home) and the proportion of female staff (Women%), and these demonstrate the same behaviour when they are considered regionally. Within the Spanish socio-cultural environment, the high discriminatory power of these two variables was expected due to the traditional role of women in household care and the usual tendency of minority groups (entrepreneurial women within entrepreneurial activity as a whole) to increase with individuals of the same gender.

Table 4. Results of the *logit* regression by regions

Variables	Total	Madrid	Centre	South	East	Northwest	Northeast
Age	-.0561767 (-4.03)***	-.0330958 (-0.92)	-.7461665 (-1.60)	-.1074295 (-2.17)*	-.0303735 (-1.15)	-.1775148 (-1.20)	-.131863 (-1.25)
Education	-.1186022 (-1.13)	-.1353422 (-0.53)	.176067 (0.17)	1.014825 (2.07)*	-.4802277 (-2.14)	-1.653519 (-1.74)*	.1858673 (0.24)
Hs_home	1.669403 (8.34)***	1.535006 (3.50)***	4.661261 (1.73)*	2.374535 (3.27)**	1.624038 (4.05)***	5.190194 (2.09)*	4.243503 (2.13)*
Experience	.0479166 (3.15)**	.0063606 (0.17)	.3900314 (1.44)	.1230901 (2.10)*	.0648801 (1.90)*	-.1016823 (-0.83)	-.0015154 (-0.02)
Conc_decisions	-.6321445 (-2.62)**	-1.187519 (-1.81)*	1.123562 (-0.46)	-1.182048 (-1.43)	-.1969675 (-0.39)	-5.725973 (-1.82)*	2.519901 (-1.38)
Professional	-.6639881 (-1.85)*	.2227736 (0.23)	-.1938611 (-0.09)	----	-.9369279 (-1.38)	-10.89178 (-2.21)*	.0433956 (0.02)
Motiv_enough	.2626555 (2.26)*	.0310406 (0.12)	2.875763 (1.67)*	.328676 (0.77)	.0623998 (0.24)	1.823586 (1.91)*	.5104816 (1.07)
S_construction	-.9974727 (-2.56)*	-.7733441 (-0.67)	3.437276 (0.88)	-3.094389 (-1.69)*	-1.877792 (-2.08)*	-2.429899 (-1.11)	-2.407334 (-1.17)
Strateg_start-up	-.1842775	-.0685552	-2.066647	-.9132417	-.0647906	-1.948208	1.01403

	(-1.83)*	(-0.26)	(-1.43)	(-2.22)*	(-0.34)	(-2.01)*	(1.34)
Family	.9517487	1.654272	-9.290356	1.801614	.4098622	6.908739	1.93794
	(2.28)*	(1.53)	(-1.53)	(1.21)	(0.46)	(1.69)*	(0.94)
Inheritance	.435199	.9724983	.2699719	2.18188	.2257047	-1.448596	-6.049101
	(1.19)	(1.23)	(0.10)	(1.45)	(0.25)	(-0.78)	(-1.48)
Women%	4.210428	3.647727	14.44245	7.278998	5.249204	18.78742	5.582657
	(10.40)***	(3.74)***	(1.86)*	(3.88)***	(5.87)***	(2.05)*	(2.39)*
Success_service	.1975247	.7933942	-.27667	1.834921	-.3239965	.6596082	1.389801
	(0.74)	(1.06)	(-0.18)	(1.84)*	(-0.64)	(0.30)	(0.85)
Success_quality	6772061	1.592864	4.051314	-1.279961	1.20213	2.966261	2.016132
	(2.06)*	(1.71)*	(0.94)	(-0.80)	(1.91)*	(1.25)	(1.01)
Success_innova	1.374218	1.821856	---	.9022909	2.554558	-5.760497	---
	(2.26)*	(1.39)		(0.45)	(2.29)*	(-1.34)	
Burden_finance	-.1175861	-.0111874	-1.334495	-.5080557	-.22492 (-	-.156679	-1.075582
	(-1.55)	(-0.06)	(-1.26)	(-1.85)*	1.47)	(-0.29)	(-0.25)
ITC	-.3401832	-.0374872	-4.654966	-.7029051	-.3888239	-9.157361	-1.357364
	(-2.82)**	(-0.11)	(-1.74)*	(-1.58)	(-1.59)	(-2.00)*	(-1.55)
Pub_grants	.4813223	1.928194	-3.255209	-.0024254	-.1852613	9.200931	1.45681
	(1.79)*	(2.64)**	(-1.21)	(-0.00)	(-0.29)	(2.07)*	(0.93)
_Constant	-2.3765	-2.339857	14.3455	-5.74264	-2.213593	3.65682	-3.20782
	(-2.49)*	(-0.98)	(1.05)	(-1.55)	(-1.15)	(0.57)	(-0.59)
Number of obs.	597	110	61	101	187	77	52
LR chi2(18)	351.22	56.08	62.43	78.31	128.34	82.49	41.89
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007
Log likelihood	-237.75815	-45.989546	-10.067726	-29.414011	-65.445384	-12.070399	-14.945206
Pseudo R2	0.4248	0.3788	0.7561	0.5710	0.4951	0.7736	0.5836

*** Significant above 1 per thousand; ** above 1 percent; * above 10 percent.

Source: own elaboration, survey data

The specific study of each of the 18 variables shows some interesting special features and we are able to contrast these with the results obtained in other researches provided in this work.

- 1- (Age) Age is a significant variable regarding gender discrimination for the entrepreneurs as a whole but, in regional terms, it only shows some significance in the Southern region. As aforementioned, in this case the negative sign would indicate the probability for entrepreneurial men to be older than women.
- 2- (Education) Education or state-regulated training is not a differentiating element taking the sample as a whole. However, it constitutes a differentiating element in two regions: men are more highly trained than women in the Northwestern region, while entrepreneurial women show higher educational levels in the Southern region.
- 3- (Hs_home) One of the most discriminatory variables is the one representing the amount of hours devoted to household chores and childcare, which is significant on a national scale and for each of the regions. As shown in related literature, women tend to devote more time to taking care of their family than men.
- 4- (Experience) Entrepreneurial experience, measured according to the number of years devoted to the activity, is discriminatory. Therefore, it is more likely for men to have more experience than women. In regional terms, East and South show significance, but this is not the case in the remaining four regions.
- 5- (Conc_decisions) The degree of concentration of decisions taken by entrepreneurs is a discriminatory variable which is significant nationally. This indicates that entrepreneurial men concentrate their decisions more so than women. Regionally

speaking, only Madrid and the Northwestern region show some significance in this same sense.

- 6- (Professional) A discriminatory variable by gender in favour of men, though with a low significance, is that of having previously been self-employed before starting an entrepreneurial activity. In regional terms, only the Northwestern region shows the same level of significance.
- 7- (Motiv_enough) Among the reasons for creating a new business, women tend to be less ambitious than men regarding the obtaining of income derived from entrepreneurial activity and are satisfied with a lower amount of income. The Northwestern and Central regions also show some level of significance, which is, in accordance with the abundant literature, reflecting that entrepreneurial women generally try to combine work with household and childcare (.....)
- 8- (S-construction) There is hardly any difference according to gender regarding the activity sector chosen, except for the building sector, where a greater male presence is observed. The Southern and Eastern regions follow the same trends as the whole business structure.
- 9- (Strategic-start-up) At the starting point of the business project, women have a lower degree of freedom or have to overcome more restrictions than men regarding the strategic choice of the location, moment to start up and activity of the initiative to be carried out. Regionally speaking, the Northwestern and Southern regions also show discrimination in the same sense as the overall variable.
- 10- (Family) The number of relatives included in staff tends to be greater in companies managed by women. In regional terms, the same significance can only be observed in the Northwest.
- 11- (Inheritance) It is more likely for entrepreneurial women than for men to start a project as a result of an inheritance, although this variable is not significant. There is no regional discrimination.
- 12- (Women%) This variable, which reflects the proportion of women in the staff, is very significant, being greater in the case of entrepreneurial women than in the case of men. In regional terms, as with the variable regarding the amount of hours devoted to household care (Hs_home), this variable displays a strong discriminatory ability in all regions.
- 13, 14, 15- (Success_service, _quality, _innova) The three variables considered by entrepreneurs (both men and women) that explain to the highest extent their companies' success, show little gender discriminatory ability. The two variables regarding the quality of products and technical innovation and capacity show some significance in favour of entrepreneurial women on a nationwide level. Regionally speaking, the Southern region, Madrid and mainly the Eastern region are the only ones which register some significance.
- 16- (Burden_finance) The variable reflecting the obstacles in accessing entrepreneurial financing is not gender discriminatory. It only seems to show some greater difficulties for men in the Southern region.
- 17- (ITC) There is a clear separation according to gender regarding the variable concerning the use of information and communication technologies by companies,

women using them to a lesser extent than men. This consideration is repeated in the Central and Northwestern regions.

18-(Pub_grants) Finally, the variable regarding government financing received for the creation or consolidation of the company clearly discriminates by gender in favour of entrepreneurial women. Madrid shows a higher significance than the whole nation. The Northwestern region also follows this line.

On the basis of the results of these variables taken individually, we can observe that mainly the Northwestern and Southern regions register a higher differentiation between men and women, following the national behaviour. In contrast, in the Northeast, only two common variables discriminate in the whole of Spain and in all of its regions, that is to say, those more associated to the socio-cultural role of gender. This situation is as expected as the former are economically less-developed and culturally more traditional regions, whereas the Northeast represents one of the most developed regions.

5. Performance and results in women-owned companies

The analysis of economic-financial performance—and therefore, efficiency- of women-owned companies requires a comparison with the analogous companies making up the economy's business structure, regardless of gender. Also to be considered in the period under analysis (2001-2008) is the fact that the behaviour of the economic variables has undergone an important change due to the sharp financial crisis started in 2007 and its rapid effects on real economy. Therefore, it is advisable to examine if this change has also resulted in consequences on the results of women's companies compared with the economic average.

In this section, the existing entrepreneurial differences according to gender are explored from a regional perspective, before and after 2007, and monitored in greater detail according to the size and the activity of the companies. This allows us to draw conclusions on the different performances registered by the typologies considered regarding their evolution and tendencies within the expansive period of Spanish economy and on the magnitude of the impact of the crisis and breaking-off of previous entrepreneurial behaviours. In order to do so, the starting point is the analysis of five economic-financial indicators, differentiating between six regions made up according to NUTS-1 (Madrid, Centre, South, East, Northwest y Northeast) (Figure 2) and further divided into four sizes (microenterprise, small, medium and large businesses) and seven sectors (agriculture, extractive industries, traditional and intermediate manufacturing, advanced manufacturing, construction, commercial distribution and rest of services). Table 5 is a numerical summary of Figure 2 showing the average of each indicator and region in the period between 2001 and 2007 and in 2008.

The trend is analysed by calculating the annual average variation from 2001 to 2007 and the variation occurring between 2007 and 2008 (Table 6). Moreover, the average of the differences registered by the values of the indicators of women's companies and the region as a whole is relativised with regard to the average of the values registered by the latter (Table 7). This is carried out in order to check the positioning of the group of women compared to that of the total. Finally, the significance of the differences between regions is evaluated using various statistical tests (Table 9).

Figure 2. **Indicators of efficiency by regions, whole economy and entrepreneurial women, 2001-2008**

FIGURE 2

Source: own elaboration, SABI data

Table 5. Regional indicators of entrepreneurial efficiency, whole economy and group of women (2001/07 average and 2008)

	Econ. Profitability (%)				Fin. Profitability (%)				EBITDA/Total assets (%)				EBITDA/Turnover (%)				Productivity (€/worker)				
	Whole economy		Women		Whole economy		Women		Whole economy		Women		Whole economy		Women		Whole economy		Women		
	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	
Regions (Nuts-1):																					
Madrid	2.6	1.8	2.3	1.0	9.5	6.5	7.9	5.1	4.8	4.0	4.5	3.0	3.7	3.7	4.1	1.8	27030	30000	25738	26500	
Centre	4.0	3.3	3.7	3.5	9.9	7.4	9.8	7.4	7.1	5.9	6.5	5.6	5.0	4.7	4.8	5.0	23522	27375	21579	26375	
South	3.6	2.6	3.3	1.6	10.9	5.9	9.6	4.0	5.9	4.5	5.5	2.9	4.2	3.9	4.2	3.1	22671	25300	20674	22600	
East	4.4	3.0	4.2	2.2	10.9	6.0	10.5	6.0	7.4	5.3	7.3	5.1	5.1	4.0	4.9	4.0	27340	28908	25889	26667	
Northwest	3.9	3.1	3.7	2.6	9.4	5.5	8.7	7.3	6.8	5.6	6.2	4.4	4.6	3.6	5.1	3.3	22401	24667	20707	21333	
Northeast	3.7	2.8	3.6	2.6	10.0	5.4	9.3	3.5	7.4	6.1	6.8	6.4	5.0	4.3	5.0	3.6	31731	36857	29399	33556	

Source: own elaboration, SABI data

Table 6. Indicators of efficiency, whole economy and group of women, by regions (NUTS-1), size and sector, 2001-07 and 2007-08 (Annual average variation, in %)

	Economic profitability				Financial profitability				EBITDA/Total assts				EBITDA /Turnover				Productivity				
	Total		Women		Total		Women		Total		Women		Total		Women		Total		Women		
	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	2001/07	2007/08	
Regions (NUTS-1):																					
Madrid	-2.7	-37.2	1.9	-66.8	-0.5	-34.3	2.7	-36.3	-1.8	-22.8	2.5	-47.9	0.0	-12.7	6.3	-69.7	4.9	-10.6	6.0	-21.9	
Centre	-3.4	-20.5	-4.0	-4.7	0.0	-34.2	-3.5	-19.4	-1.8	-17.9	-1.9	-14.3	-0.8	-10.4	0.3	-6.3	4.2	-2.2	4.7	-4.7	
South	-8.7	-11.8	-9.7	-36.0	-6.4	-36.2	-11.3	-40.1	-6.3	-7.4	-7.8	-28.8	-2.8	-2.3	-1.4	-23.3	3.0	-1.2	5.8	-5.8	
East	-3.4	-29.0	-2.7	-49.7	-3.2	-44.7	-4.3	-34.8	-2.8	-27.1	-2.0	-29.9	-0.1	-25.4	1.8	-27.8	4.2	-9.0	6.6	-16.6	
Northwest	-4.8	-11.7	-8.6	-9.7	-0.7	-43.4	-3.3	-9.0	-4.1	-7.3	-6.4	-3.9	-3.0	-14.4	-2.3	-25.5	2.8	-1.2	1.3	-2.3	
Northeast	-4.2	-29.2	-4.4	-25.0	-3.5	-46.1	-2.0	-61.1	-2.1	-19.5	-2.2	-10.8	0.9	-23.7	2.8	-43.4	3.6	-2.4	3.7	-1.3	
Size:																					
Microenterprise	-3.8	-32.8	-6.7	-49.7	-1.7	-43.6	-6.5	-34.4	-0.3	-26.1	-2.2	-27.0	1.0	-21.5	1.7	-50.1	5.0	-8.9	3.6	-16.7	
Small	-3.2	-21.3	-5.3	0.8	-1.6	-47.1	-3.5	-27.5	-2.0	-12.9	-0.6	-10.7	0.1	-9.5	0.9	-16.6	2.8	0.4	3.5	0.4	
Medium	-3.1	-9.9	-1.0	-12.5	-1.9	-26.9	-1.8	-34.3	-1.8	-10.0	0.0	-17.5	-0.6	-5.9	1.1	-17.7	2.3	0.8	2.0	-0.9	
Large	-1.5	-6.0	1.7	1.4	0.0	-22.0	4.6	-43.1	-0.8	-5.6	1.3	-9.3	-0.3	-6.6	0.4	15.4	2.3	4.7	3.1	-4.4	
Sector:																					
Agriculture	-9.8	38.4	-1.1	35.0	-4.8	-10.6	0.2	-49.6	-4.8	13.9	-1.4	-13.3	-3.6	15.6	1.5	-3.8	2.4	-3.6	2.3	-8.3	
Extractive industries	-1.8	-17.3	2.2	-27.7	1.0	-45.1	2.2	-47.2	-0.6	-15.3	-0.1	-5.8	-1.9	-0.9	-1.1	3.7	3.4	1.5	2.7	-3.1	
Trad. manufacturing	-4.4	-24.1	-5.0	-26.6	-4.1	-44.0	-9.2	-25.4	-2.2	-14.0	-3.8	-11.3	0.3	-9.7	2.4	-13.0	3.3	-1.4	4.6	1.5	
Adv. manufacturing	-3.9	-24.5	-4.6	-19.6	-3.7	-35.0	-5.6	-33.9	-3.2	-14.1	-3.6	-15.6	-1.4	-12.6	-1.5	-22.5	3.2	-4.3	3.2	-6.3	
Construction	-4.0	-20.1	-3.6	-50.7	-4.3	-34.7	-3.6	-39.7	-2.5	-12.6	-4.2	-51.3	2.2	-13.7	2.8	-49.1	4.8	-1.7	3.7	-11.0	
Commercial distrib.	-3.7	-17.2	-5.5	-24.8	-2.8	-33.0	-4.0	-32.8	-2.3	-10.9	-3.1	-14.9	0.0	-12.0	0.2	-22.4	3.0	-2.9	1.9	0.2	
Rest of services	-2.5	-26.4	-0.5	-34.7	0.9	-37.0	-2.1	-20.8	-1.1	-24.7	3.1	-27.2	0.6	-25.0	1.2	-23.4	3.7	-7.5	5.4	-15.0	

Source: own elaboration, SABI data

In the analysis of the **whole economy**, companies belonging to the region of Madrid show the lowest economic profitability (between 3.5 and 2.9 percent, with an average of 2.6) for the period 2001 to 2007, while companies in the Southern region register a more decreasing trend, with an annual average rate of 8.7 percent (Figure 2, Table 5 and Table 6). However, Madrid is the region where this profitability drops the least within the period under analysis. The rest of regions register closer values to each other and more homogeneous behaviours, although the Eastern region obtains the greatest economic profitability rates (between 5.4 and 4.3 percent, with an average of 4.4). In 2008, the effect of the crisis causes a fall in this indicator of between 11.8 percent in Southern and Northwestern regions and 37.2 percent in Madrid.

Financial profitability and EBITDA over turnover are the indicators that register closer values among regions and show the greatest stability within the 2001-2007 period, with slight variations in some of them of between -1 and 1 percent. However, the Southern region stands out from the others as profitability drops 6.4 percent and EBITDA 2.8 percent. Furthermore, these levels of financial profitability do not register great differences between regions when the crisis began. The differences between regions are slightly more pronounced regarding EBITDA over turnover; more specifically, it is worth highlighting that Madrid and the Southern region are those that generate the lowest financial flows, while the Eastern region generates the highest. In 2008, there is a notable fall in financial profitability, which varies from 34 percent in the Central region and Madrid to 46 percent in the Northeastern region. EBITDA over turnover also registers a sharp drop, although by a smaller percentage and more heterogeneously: it is slightly higher than 2 percent in the Southern region and, on the other side, it drops down to 25.4 percent in the Eastern region. However, EBITDA over total assets confirms the lesser capacity of generating liquid funds of companies located in Madrid and the Southern region, compared to that of the Eastern and Northeastern regions, which is the greatest.

In the expansive stage, productivity grew annually at a rate between 2.9 (Northwest) and 4.9 (Madrid), registering values higher than 4 percent in the Eastern and Central regions. Companies with the highest productivity are those located in the Northeastern region, and companies showing the lowest levels of productivity are those in the Southern and Northwestern regions. Productivity has been negatively affected by the crisis in all regions, especially in Madrid and the Eastern region, which have decreased more than 9 percent in just one year.

Regarding the group of **entrepreneurial women**, the most noticeable fact is that, when examining the indicators in the period between 2001 and 2007, Madrid registered positive annual average rates, whereas in the rest of regions these are always negative, except for EBITDA over turnover in the Central, Eastern and Northeastern regions. In other words, opposite to the decreasing trend of the indicators of profitability and EBITDA of the whole economy and the group of women, Madrid's women-owned companies show the reverse trend and actually improve their position during the period in question. However, this improvement of positioning ceases from 2007 due to the effect of the crisis on efficiency indicators, which is more severe in this region. In fact, in this period, the greatest falls regarding the indicators of economic profitability (-66.8 percent), EBITDA over total assets (-

47.9 percent), EBITDA over turnover (-69.7 percent) and productivity (-21.9 percent) are registered. Although the fall in financial profitability is not the highest, its value reaches 36.8 percent, and only the Southern and Northeastern regions show higher values.

It can be inferred from the aforementioned that, in regional terms and for the period between 2001 and 2007, women-owned companies clearly register worse results than the whole economy average, except for EBITDA over turnover, which is better in three out of the six regions –Madrid, South and Northeast- (Table 7). Globally, the sharp fall in 2008 has had a worse effect on women-owned companies than on those of the whole economy. Thus, their productivity and economic profitability have decreased in all regions (apart from the Central region, which relatively improves), EBITDA has decreased in four regions and has relatively increased in just two, and financial profitability has decreased in the same amount of regions in which it has relatively increased.

Table 7. Positioning of the group of women compared to the whole economy (*)
(By regions, sizes and sectors), 2001-07 period and 2008, in percentage

	Econ. profitability		Fin. profitability		EBITDA/Total assets		EBITDA/Turnover		Productivity	
	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008	2001/07	2008
Regions (Nuts-1):										
Madrid	-11.5	-46.9	-17.6	-20.5	-6.9	-25.8	11.4	-51.6	-4.8	-11.7
Centre	-7.6	5.2	-0.7	0.4	-8.5	-5.1	-4.5	6.0	-8.3	-3.7
South	-9.0	-37.3	-11.9	-32.3	-6.8	-36.7	0.3	-21.3	-8.8	-10.7
East	-3.9	-27.7	-3.9	1.2	-2.1	-2.9	-3.0	0.0	-5.3	-7.8
Northwest	-5.0	-15.6	-7.3	32.4	-9.2	-20.4	-8.1	10.2	-7.6	-13.5
Northeast	-3.7	-5.4	-6.8	-36.3	-7.9	5.6	0.9	-16.4	-7.4	-9.0
Size:										
Microenterprise	1.0	-36.3	-14.6	-18.2	-0.1	-9.6	10.6	-32.2	-6.5	-18.0
Small	-3.1	9.4	-9.2	8.0	3.2	7.2	5.0	3.0	-7.2	-5.7
Medium	-2.7	3.1	-15.5	-17.1	2.8	0.2	-14.0	-18.4	-21.2	-22.7
Large	9.0	22.6	5.4	-28.9	2.5	8.0	-2.5	25.7	-23.6	-23.2
Sector:										
Agriculture	-38.7	-17.9	-29.1	-48.3	-15.9	-37.5	8.7	25.3	-4.5	-3.9
Extractive industries	9.1	8.0	4.7	4.7	3.6	6.4	2.9	5.0	-2.9	-10.7
Trad. manufacturing	-12.7	-21.3	2.0	1.5	-14.9	-24.7	-10.7	-9.7	-6.1	0.9
Adv. manufacturing	-4.9	6.4	0.1	0.1	1.5	-1.1	1.6	-9.1	-6.3	-4.0
Construction	-19.1	-49.2	-8.9	-29.5	-17.9	-115.0	4.2	-41.4	2.6	-4.6
Commercial distrib.	-7.2	-14.6	-16.4	-15.0	-2.1	-6.0	1.0	-9.3	-11.0	-13.0
Rest of services	12.8	4.2	-7.0	-14.4	-0.4	8.9	20.7	20.8	-6.4	-6.7

(*) This magnitude is the result of subtracting the value of the averages of the indicators of the whole economy from the value of the averages of the efficiency indicators of the group of women, divided by the value of the averages of the indicators of the whole economy.

Source: own elaboration, SABI data

However, this regional view is confirmed by the behaviour of the companies according to their size or the activity sector in which they operate, by using representative samples of both segmentation criteria. In this regard, Table 8 shows the participation of each sector and size in the whole economy and in the group of entrepreneurial women, as well as the percentage represented by the latter in each sector and size.

On the basis of the data shown in Table 8, we can observe the overrepresentation of women-owned enterprises not only in the sector of microenterprises (21.1 over 19.2 percent of the average), but also in the services sector –except for commercial distribution- (32 over 19.2 percent of the average). This situation has been widely studied in literature, for example, research regarding the predominance of small sizes by Haynes and Haynes (1999), regarding the preference for the services sector by Carter

(2000) and Verheul (2005), and regarding these two aspects by Tigges and Green (1994) and Verheul and Thurik (2001).

Generally speaking, the higher the business size and the need for capitalisation (and/or productivity) required by the most advanced activity branches, the lesser the relative presence of female entrepreneurs. For example, those women owning medium-sized enterprises represent approximately half the economic average and those whose activity sector is advanced manufacturing represent less than one third. Some of the reasons justifying this are that the choice of certain sectors, such as the industrial sector, gives rise to a less favourable positioning (Loscocco et al., 1991) and that women tend to manage companies based in the services sector or in branches of traditional industry, such as the textile setor (Clark and James 1992; Coleman and Robb, 2009).

Table 8. **Participation by size and sector over the total of companies and women enterprises**
(in percentage)

Size	Enterprises	Women	b/a
	(a)	enterprises (b)	
Microenterprise	74,8	82,0	21,1
Small	21,5	16,2	14,5
Medium	3,1	1,6	10,0
Large	0,6	0,2	6,9
Total	100,0	100,0	19,2
Sector			
Agriculture	2,5	1,2	9,0
Extractive industries	0,7	0,2	4,5
Traditional manufacturing	12,4	8,4	13,0
Advanced manufacturing	3,1	1,0	6,4
Construction	16,1	8,2	9,8
Commercial distribution	26,5	16,1	11,7
Rest of services	38,8	65,0	32,2
Total	100,0	100,0	19,2

Source: own elaboration, SABI data

In companies managed by women, a direct relationship is evident between **business size** and efficiency indicators, which lessens in the case of medium companies. In fact, microenterprises register the lowest values; large enterprises, the highest; and small and medium-sized offer intermediate value between them and sometimes large enterprises². Between 2001 and 2007, the indicators broken down into sizes show (Table 6) the same decreasing trend as in the regions, except for productivity, which is increasing, and EBITDA over turnover, which is more even. The effects of the crisis since 2007 are again reflected in the indicators, which gives rise to high negative variations reaching values of around 50 percent in the indicators of economic profitability and EBITDA over turnover of microenterprises. Unlike the whole economy, the productivity of companies managed by women has been negatively affected by the effects of the crisis, and microenterprises' productivity has dropped twice as much as the rest of the economy's.

As is demonstrated in Table 7, the profitability and productivity of women-owned companies for the 2001-2007 period register lower values than the economic average, except for large companies, where profitability is higher. These results support the conclusions reached by Hisrich and Brush (1983), Cuba et al. (1983), Longstreth et al. (1987), Brush (1992), Rosa et

² This evidence is extracted from a wider research regarding entrepreneurial activity in Spain (García-Tabuenca, Crespo-Espert and Pablo-Martí, 2010), within which this study is in keeping with.

al. (1996), Ehlers and Main (1998), Watson (2002) and Coleman and Robb (2009), stating that companies managed by women register worse performances in most of the quantitative indicators, although this behaviour is conditioned by the sector and size in which they operate.

EBITDA register a better position in companies owned by women than in the overall average, although EBITDA over total assets of microenterprises and EBITDA over turnover of medium- and large-sized enterprises are lower than those of the whole. The effects of the crisis since 2007 have been heterogeneous in both groups. The most notable conclusion is that the indicators of small women's companies have decreased by a lesser proportion than the ones belonging to the whole economy, apart from EBITDA over turnover which, although it has registered a drop, is still better. In the other small sizes (micro and medium), the effects of the crisis have generally caused a decrease in efficiency in comparison with the whole economy. That is to say, the crisis has had an influence on the improvement of positioning of small women's companies compared to the whole economy and on the worsening of the remaining two sizes of small and medium-sized enterprises.

Taking into consideration the **sectorial element**, companies managed by women (Table 7) generally maintain the same disadvantageous position described above. They show less economic profitability in all sectors, except for extractive industries; less productivity, except for the construction sector, and less financial profitability, except for the industrial sector (extractive and manufacturing industries); only some exceptions can be observed in the EBITDA. The crisis has not changed this unfavourable behaviour, although it has caused a different impact depending on the sectors and indicators. The negative effect on economic profitability is significant.

Lastly, as already mentioned in Section 3 (Sources and methodology), the differences in these behaviours, graphically observed in the efficiency indicators of the various groups of companies and regions, are now confirmed using the Kruskal-Wallis, Brown-Forsythe and Tamhane statistical tests. Table 9 shows the results obtained from these tests –whole economy and group of women entrepreneurs-, as well as the previous necessary tests (Kolmogorov-Smirnov and Levene) regarding normality and heterocedasticity of data distribution.

The result of the Kolmogorov-Smirnov test indicates that the hypothesis of normality cannot be admitted, and the Levene test indicates that the homocedasticity hypothesis does not apply, as the variances are not equal. The Kruskal-Wallis and Brown-Forsythe tests show that there are statistically significant differences in all the values taken by the indicators analysed among the regions under consideration. Such differences, of a generic nature (i.e. there is one or several different behaviours of one or several regions), are specified by multiple comparisons by pairs provided by the Tamhane test. This test confirms the significant differences by NUTS-1 regions, particularly the cases of Madrid and the Eastern region regarding the EBITDA and profitability indicators, and Northwest and Northeast and South regarding productivity.

Table 9. Differences in efficiency indicators behaviours by NUTS-1 regions. Statistical tests. (Whole economy and women entrepreneurs), 2001-2008

Statistical Test /Economic Financial Indicators	Economic profitability	Financial profitability	EBITDA/ Turnover	EBITDA / Total assets	Labour Productivity
Normality Test, Kolmogorov - Smirnov	0.00*	0.00*	0.00*	0.00*	0.00*
Test of Homogeneity of Variances, Levene statistic	0.00*	0.00*	0.00*	0.00*	0.00*
Test of Equality of Means, Kruskal-Wallis	0.00*	0.00*	0.00*	0.00*	0.00*
Robust Test of Equality Means, Brown-Forsythe	0.00*	0.00*	0.00*	0.00*	0.00*

*Significance level of 0.05

Source: own elaboration and SABI data

The following conclusions can be drawn from the aforementioned: a) the regions registering the best and worst entrepreneurial performances, b) the trend marked by the indicators, c) the relative positioning of women's companies compared to the economic average. Furthermore, it demonstrates the effect of the crisis since 2007 on the three aforementioned aspects in 2008.

- a) The results of the indicators by regions, as well as their statistical verifications, in the 2001-2007 period –for both the whole economy and the group of women-, show that the Eastern region and Madrid are the regions with the best and the worst performance, respectively. However, the Northeastern region registers the best productivity values and the Northwestern and Southern regions register the worst values. Madrid and the Eastern region, after the Northeast, show similar levels of productivity. In 2008, because of the crisis, all the indicators of the regions decrease significantly and there are some changes of position between regions.
- b) Profitabilities and EBITDA register a decreasing trend (measured by the annual average variation), with a sharp fall in 2008, and productivity maintains an increasing trend throughout the period, with some falls towards the end. The Southern region shows the most decreasing trend regarding profitabilities and EBITDA and registers, together with the Northwestern region, the lowest increasing trend regarding productivity.
The evolution of the indicators in the Madrid group of women deserves special reference, as it marks a different trend from the rest: contrary to the decreasing trend in all regions, the annual average variation in this region is positive, and this implies an improvement in its relative positioning. This improvement stopped abruptly in 2008 and the indicators, except for financial profitability, suffered the greatest falls after the starting of the crisis.
- c) During the period from 2001 to 2007, the performance of women's companies compared to the whole economy is practically worse in all indicators and regions; only the Southern, Northeastern and Madrid regions show a better relative situation regarding EBITDA over turnover. In 2008, because of the crisis, the relative positioning of women's companies compared to the whole economy worsened to a great extent, except for the Central region, where all the indicators improved, and the

Eastern and Northwestern regions, where financial profitability and EBITDA over turnover improved (Table 5).

Finally, according to business sizes, microenterprises show the worst indicator values and large companies show the best ones. The crisis improved the positioning of small women's companies and worsened that of the other two small sizes. These worse results registered by women's companies are confirmed by the sectorial analysis, although some isolated cases exist.

6. Conclusions and discussion framework

This research is based on the different models of entrepreneurship observed territorially in the Spanish economy –with significantly greater rates in Madrid, Eastern and Northeastern regions compared to those of the Central, Northwestern and Southern regions-, in order to adopt a regional approach to analyse the features and performance of women's entrepreneurial activity. This approach is confirmed by the results obtained.

Entrepreneurial activity in the economy is extremely heterogeneous, both from a theoretical and empirical viewpoint or from micro- or macro-economic approaches. Its empirical analysis has been carried out in literature in an aggregated manner and also to a less aggregated extent, such as to sectors, to different business sizes or to regions. The consideration of gender in these approaches started to gain ground in the 1980's. Since Eleonor Schwartz launched this new field of investigation, the main topics analysed have been the following: features and motives of women when facing up an entrepreneurship, leadership style, decisions made regarding the strategic choice when undertaking entrepreneurship, obstacles found and financing standards adopted and, finally, the performance and results obtained by their initiatives. With some discrepancies, academic research as a whole agrees that there are differences between entrepreneurial women and men regarding the aforementioned topics.

In an attempt to differentiate this research from assessments linked to gender, it provides some support regarding these aspects, contrasting them with the main contributions made by literature, which has been exhaustively revised. In order to do so, the data obtained from a specific survey conducted to a representative sample of entrepreneurs of both genders and the accounting data of samples of companies were analysed from an economic-financial perspective. By using an econometric analysis, the information provided by the survey has enabled us to characterize the features of entrepreneurial women and their companies, differentiating them from those of men. The economic-financial analysis has allowed us to define the behaviour of entrepreneurial results of the group of women compared to the economic average.

The econometric analysis has provided a selection of 18 variables (out of more than 150 obtained from the survey) which, when isolated from the effect of the rest, have more gender-discriminating power. The greater differentiation between the group of men and the group of women mainly arises, both national and regionally, in two variables more associated with the socio-cultural role of gender: time devoted to household chores and childcare, and the choice of staff with greater female presence. In the Northeastern region, where some of the greatest economic developments can be seen, differences of gender are lower, and this is the reason

why only these two variables are significant. On the contrary, the Northwestern and Southern regions, with lower economic development and which are more traditionally orientated, show a higher number of significant variables.

The economic-financial analysis reveals that the different behaviours of the Northeastern region compared to those of the Northwestern and Southern regions are repeated in the values registered by the analysed companies' productivity. Therefore, the Northeastern region shows the greatest productivity and the other two register the lowest. The Eastern region and Madrid are situated between both positions regarding their differences in gender and labour productivity, and these are the regions showing the best and worst performances for the other indicators evaluated. The results from Madrid are conditioned by the high concentration of microenterprises which, according to this research, show the worst results. In fact, the Northeast, the East and Madrid, regions which have historically shown the greatest economic dynamism and, nowadays, register the lowest gender differences regarding entrepreneurial activity, have the greatest rate of entrepreneurship.

These results justify the importance of the regional approach used in the research with respect to the relationship between differentiation by gender, rate of entrepreneurship and entrepreneurship performance, which is analogously reflected in productivity and, except for Madrid—because of the mentioned reason regarding business size-, in profitabilities and cash-flow generation. This configuration of regional positioning did not change significantly after receiving the impact of the recent crisis.

Within this regional context, the performance of women-owned companies is worse compared with the whole economy, taking into consideration all the indicators and regions. Furthermore, this decreases considerably in 2008, after the beginning of the crisis, throughout the whole country, except for certain indicators in particular regions.

Note 1:

Consequently, a recursive model defined by two equations is established. The first is used to estimate the rate of estimated entrepreneurship of each region:

$$E_{i,t} = \alpha + \beta_1 \cdot E_{i,t}^* + \beta_2 \cdot U_{i,t} + \beta_3 \cdot S_{i,t} + u_{1;i,t} \quad [1]$$

where, the variables being considered are:

$E_{i,t}$: Rate of estimated entrepreneurship of each Spanish NUTS-1 i at moment t.

$E_{i,t}^*$: Rate of estimated optimum entrepreneurship of each Spanish NUTS-1 i at moment t.

$U_{i,t}$: Rate of unemployment of each Spanish NUTS-1 at moment t.

$S_{i,t}$: Ratio of salaries by gross operating surplus of each Spanish NUTS-1 i at moment t.

u_1 : Term of random disturbance of the equation [1]

The second equation is introduced in order to explain the behaviour of the rate of optimum equilibrium. It seems logical to establish that an economy's rate of entrepreneurship is a function of the country's economic development in itself and, more concretely, of the GDP per capita. The chosen formula follows Carree's approach, which expresses the relation in parabolic form, taking logarithmic instead of nominal values, so that:

$$\log(E^*)_{i,t} = \alpha_0 + \delta \cdot \log(GDPpc)_{i,t} + \gamma \log(GDPpc)_{i,t}^2 + u_{2;i,t} \quad [2]$$

where:

GDPpc : Per capita Gross Domestic Product

u_2 : Term of random disturbance in the equation [2]

The model's recursive formulation calculates a primary estimation of the least squares of the rate of equilibrium [2], which, after the verification of the existence of an autocorrelated behaviour in the residuals ($AR(1)$), is corrected by reestimating the model using generalised least squares, introducing this estimation into the equation [1].

References:

- Ahl, H. (2002): *The making of the female entrepreneur: A discourse analysis of research texts on women's entrepreneurship*, Doctoral Dissertation, JIBS Dissertation Series n° 015, Jönköping International Business School.
- Allen, E., Elam, A., Langowitz, N. and Dean, M. (2008): GEM, 2007 Report on women and Entrepreneurship, Babson, The Center for Women's Leadership.
- Audretsch, D. (2005): The Knowledge Spillover Theory of Entrepreneurship and Economic Growth, in G.T. Vinig and R.C.W. Van Der Voort (eds.) *The Emergence of Entrepreneurial Economics, Research on Technological Innovation, Management and Policy*, Volume 9, 37-54, Elsevier Ltd.
- Barberá, E, Sarrió, M. and Ramos, A. (2000): *Mujeres directivas: promoción profesional en España y Reino Unido*, Col·lecció Quaderns Feministes (2), Institut Universitari d'Estudis de la Dona, Valencia.
- Bergström, F. (2000): Capital Subsidies and the Performance of Firms'. *Small Business Economics*, 14, 183-193
- Bird, S. R. and Sapp, S. G. (2004): Understanding the Gender Gap in Small Business Success. Urban and Rural Comparisons, *Gender and Society*, 18, 1, 5-28, DOI: 10.1177/0891243203259129.
- Bonano, Ph. (2000): Women: The Emerging Economic Force, en *Women Entrepreneurs in the Global Economy*, Center for International Private Enterprise (CIPE), <http://www.cipe.org/programs/women/pdf/jalbert.pdf>
- Brush, C.G. and Hisrich, R.D. (1991): Antecedent Influences on Women-owned Businesses, *Journal of Managerial Psychology*, 6 (2), 9-16.
- Brush, C.G. (1992): Research on Women Business Owners: Past Trends, a New Perspective and Future Directions, *Entrepreneurship Theory and Practice*, 16, 4, 5-30.
- Brush, C.G. (1997): Women's entrepreneurship, *Proceedings of the OECD Conference on Women Entrepreneurs in Small and Medium Enterprises*, OECD, Paris.
- Brush, C, G. and Gatewood, E.J. (2008): Women growing business: Clearing the hurdles, *Business Horizons*, 51, 175-179.
- Buttner, E.H. and Rossen, B. (1988): Bank Loans Officer's Perceptions of the characteristics of Men, Women and Successful Entrepreneurs, *Journal of Business Venturing*, 3, 249-258.
- Buttner, E.H. and Rossen, B. (1989): Funding New Business ventures: Are Decision Markers Biased Against Women Entrepreneurs?, *Journal of Business Venturing*, 4, 4, 249-261.
- Buttner, E.H. (1993): Female Entrepreneurs: How Far Have They Come?, *Business Horizons*, 36, 2, 59-65.
- Carree, M.; van Stel, A.; Thurik, R. and Wennekers, S (2002): Economic Development and Business Ownership: An Analysis Using Data of 23 OECD countries in the Period 1976-1996, *Small Business Economics*, 19, 271-290.
- Carter, N.M., Gartner, W.B. and Reynolds, P.D. (1996): Exploring Start-up Events Sequences, *Journal of Business Venturing*, 11, 151-166.
- Carter, N.M., Gartner, W.B, Shaver, K.G and Gatewood, E.J (2003): The Career Reasons of Nascent Entrepreneurs, *Journal of Business Venturing*, 18, 13-19.
- Carter, S. (2000): Improving the numbers and performance of women-owned business: some implications for training and advisory services, *Education and Training*, 42, 4-5, 326-334.
- Carter, S., Shaw, E. and Wilson, F. (2004): Securing a business loan: How women entrepreneurs view banks and how banks view them, Babson College, <http://www.babson.edu/entrep/fer/BABSON2003/XXVI/XXVI-S2/XXVI-S2.html>.

- Carter, S. and Shaw, E. (2006): Women's Business Ownership: Recent Research and Policy Developments, Report to the Small Business Service, Reino Unido.
- Carter, S., Shaw, E., Lang, W. and Wilson, F. (2007): Gender, Entrepreneurship, and Bank Lending: The Criteria and Processes Used by Bank Loan Officers in Assessing Applications, *Entrepreneurship Theory and Practice*, 31, 3, 427-44, DOI: 10.1111/j.1540-6520.2007.00182.x.
- Clark, T. and James, F. (1992): Women-owned Businesses: Dimensions and Policy Issues, *Economic Development Quarterly*, 6, 25-40.
- Cole, P.M. (1997): Women in Family Business, *Family Business Review*, 10, 4, 353-371.
- Coleman, S. (2000): Access to Capital and Terms of Credit: A Comparison of Men- and Women-owned Small Business, *Journal of Small Business Management*, 38, 3, 37-52.
- Coleman, S. and Robb, A. (2009): A comparison of new firm financing by gender: evidence from the Kauffman Firm Survey data, *Small Business Economics*, 33, 397-411.
- Cole, R. A. and Wolken, J. D. (1995). Financial services used by small businesses: Evidence from the 1993 National Survey of Small Business Finance. *Federal Reserve Bulletin*, 81 (7), 629-667.
- Cromie, S. (1987): Motivations of Aspiring Male and Female Entrepreneurs, *Journal of Occupational Behaviour*, 8 (3), 251-261.
- Cuba, R., Decenzo, D. and Anish, A. (1983): Management practice of successful female business owners, *American Journal of small business*, 8 (2): 40-46.
- Díaz García, M.C. and Jiménez Moreno, J.J. (2010): Recursos y resultados de las pequeñas empresas: nuevas perspectivas del efecto género, *Cuadernos de Economía y Dirección de la Empresa*, 42, 151-176.
- Ehlers, T.B. and Main, K. (1998): Women and false promise of micro-enterprise, *Gender and Society*, 12 (4), 424-440.
- European Commission (2006). EuropeAid-Evaluation-Guidelines, <http://ec.europa.eu/europeaid/evaluation/methodology/>
- European Commission (2008): *Evaluation on Policy: Promotion of Women Innovators and Entrepreneurship*, DG Enterprise and Industry, http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=3815&user_service_id=1&request.id=0
- García Tabuena, A., Crespo Espert, J.L. and Cuadrado Roura, J.R. (2010): Entrepreneurship, creative industries and regional dynamics in Spain, *The Annals of Regional Science*, DOI 10.1007/s00168-010-0376-6, Springer Berlin / Heidelberg.
- Gatewood, E.J., Brush, C.G., Carter, N.M., Greene, P.G. and Myra, M.H. (2009): Diana: a symbol of entrepreneur's hunt for knowledge, money, and the rewards of entrepreneurship, *Small Business Economics*, 32, 129-144, DOI 10.1007/s11187-008-9152-8.
- Changati, R. and Parasuraman, S. (1996): A Study of the impacts of Gender on Business Performance and Management Patterns in small Businesses, *Entrepreneurship Theory and Practice*, 26(3), Spring, 91-100.
- Grilo, I., Thurik, R., Verheul, I. and van der Zwan, P. (2007): Climbing the entrepreneurial ladder: the role of gender, *ERIM Report Series Research in Management*, ERS-2007-098-ORG.
- Harris, R. and Trainor, M. (2005). Capital Subsidies and their Impact on Total Factor Productivity: Firm-level Evidence from Northern Ireland. *Journal of Regional Science*, 45, 1, 49-74
- Hisrich, R.D. and Brush, C. G. (1983): The woman entrepreneur. Implications of family educational and occupational experience, en *Frontiers in entrepreneurship research*, 255-270. Wellesley, MA: Babson College.
- Hisrich, R.D. and Brush, C. (1984): The woman entrepreneur: Management skills and business problems, *Journal of Small Business Management*, 22 (1), 30-37.
- Hisrich, R. and O'Brien, M. (1981), "The women entrepreneur from a business and sociological perspective", in Vesper, K. (Eds), *Frontiers of Entrepreneurship Research*, Babson College, Wellesley, MA.,
- Hisrich, R.D. and O'Brien, M. (1982): The woman entrepreneur as a reflection of the type of business, *Frontiers in Entrepreneurship research*, pp. 21-39, Babson College.

- Haynes, G.W. and Haynes, D.C. (1999): The Debt Structure of Small Business Owned by Women in 1987 and 1993, *Journal of Small Management*, 37, 2, 1-18.
- Justo, R., Cruz, C., Castro (de), J. and Coduras, A. (2006): Entrepreneurs' perceptions of success: Examining differences across gender and family status, working paper, WP06-07, Instituto de Empresa Business School, Madrid.
- Kalleberg, A. and Leicht, K (1991): Gender and Organizational Performance: Determinants of Small Business Survival and Success, *Academy of Management Journal*, 34, 1, 36-61.
- Klapper, L. F. and Parker, S.C. (2010): Gender and the Business Environment for New Firms Creation, The World Bank Research Observer, DOI: 10.1093/wbro/lkp032.
- Kolvereid, L., Shane, S. and Westhead, P. (1991): An Exploratory Examination of the Reasons Leading to New Firm Formation Across Country and Gender, *Journal of Business Venturing*, 6, 431-446.
- Loden, M. (1987): *Feminine leadership, or how to succeed in business without being one of the boys*, Times Books, London.
- Longstreth, M., Stafford, K. and Mauldin, T. (1987): Self-Employed Women and Their Families: Time Use and Socioeconomic Characteristics, *Journal of Small Business Management*, 25.
- Loscocco, K. A., Robinson, J, Hall, R.H. and Allen, J.K. (1991): Gender and Small Business Success: An inquiry into Women's Relative Disadvantage, *Social Forces*, 70, 1, 65-83.
- Martínez-Jiménez, R., Hernández-Ortiz, M. J. and (de la) Poza-Pérez, J. (2007): Trayectoria profesional de las hijas en la empresa familiar: de la infancia a la sucesión, *Conocimiento, innovación y emprendedores: camino al futuro*, en Ayala Calvo, J.C. y grupo de investigación FEDRA, Logroño: Universidad de la Rioja.
- Morris, M.H., Miyasaki, N., Watters, C.E and Coombes, S.M (2006): The Dilemma of Growth: Understanding venture size choice of women entrepreneurs, *Journal of Small Business Management*, 44(2), 221-244.
- Muravyev, A., Talavera, O. and Schäfer, D. (2009): Entrepreneur's gender and financial constraints: Evidence from international data, *Journal of Comparative Economics*, 37, 270-286.
- OECD (2004): Women's Entrepreneurship: Issues and Policies, 2nd. Conference of Ministers Responsible for Small and Medium-Sized Enterprises (SMEs), Istanbul, Turkey, <http://www.oecd.org/dataoecd/6/13/31919215.pdf>
- Orhan, M. and Scott, D. (2001): Why women enter into entrepreneurship: an explanatory model, *Women in Management Review*, 16, 5, 232-247.
- Ramos, R., Barberá, E and Sarrió, M. (2003): Mujeres directivas, espacio de poder y relaciones de género, *Anuario de Psicología*, 34, 2, 267-278, Facultad de Psicología, Universitat de Barcelona.
- Rodríguez Gutiérrez, M. J. and Santos Cumplido, F.J. (2008): La actividad emprendedora de las mujeres y el proceso de creación de empresas, *Información Comercial Española*, 341, 117-132.
- Rosa, P., Carter, S. and Hamilton, D. (1996): Gender as a determinant of small business performance: insights from a British study, *Small Business Economics*, 8, 463-478.
- Sabarwall, Sh. and Terrell, K. (2008): Does Gender Matter for Firms Performance? Evidence from Easter Europe and Central Asia, World Bank Working Paper 4705.
- Salganicoff, M. (1990): Women in Family Business: Challenges and Opportunities, *Family Business Review*, III, 2, 123-137.
- Sandberg, K. W. (2003): An exploratory study of women in micro enterprises: gender-related differences, *Journal of Small Business and Enterprise Development*, 10, 4, 408-417.
- Schein, V. (1973): The relationship between sex role stereotypes and requisite management characteristics, *Journal of Applied Psychology*, 57, 95-100.
- Schein, V. (1975): Relationships between sex role stereotypes and requisite management characteristics among female managers, *Journal of Applied Psychology*, 60, 340-344.
- Schwartz, E. (1976): Entrepreneurship: A new female frontier, *Journal of Contemporary Business*, 5(1), 47-76.
- Scott, C.E. (1986): Why more women are becoming entrepreneurs, *Journal of Small Business Management*, 24 (4), 37-44.

- Sexton, D.L. and Bowman-Upton, N. (1990). Female and Male Entrepreneurs: Psychological Characteristic and their role in gender-related discrimination, *Journal of Business Venturing*, 5, 29-36.
- Shane, S., Kolvereid, L. and Westhead, P.(1991). An exploratory examination of the reasons leading to new firm formation across country and gender, *Journal of Business Venturing*, Vol. 6, No. 6, 431–446.
- The Economist, (2010): We did it! The richworld’s quiet revolution: women are gradually taking over the workplace, January 2nd.
- Tigges, L.M. and Green, G.P. (1994): Small Business Success Among Men- and Women-Owned Firms in Rural Areas, *Rural Sociology*, 59, 2, 289-318.
- Tokila, A., Haapanen, M. and Ritsilä, J. (2008): Evaluation of Investment Subsidies: When Is Deadweight Zero? *International Review of Applied Economics* (in press)
- Verheul, I., Wenekers, S., Audretsch, D. and Thurik, A.R. (2002): An Eclectic Theory of Entrepreneurship: policies institutions and culture, in Audretsch, D.B., Thurik, A.R., Verheul, I., and Wenekers, S. (eds.), *Entrepreneurship: Determinants and Policy in a European-US Comparison*, Boston/Dordrecht/London: Kluwer Academic Publishers, 11-81.
- Verheul, I. (2005): Is there a female approach? Understanding gender differences in entrepreneurship, Doctoral Thesis, [Erasmus Research Institute of Management \(ERIM\), http://repub.eur.nl/resource/publication:2005/index.html](http://repub.eur.nl/resource/publication:2005/index.html)
- Verheul, I. and Thurik, R. (2001). Start-Up Capital: Does Gender Matter?, *Small Business Economics*, 16, 329-345.
- Verheul, I., Carree, M. and Thurik, R. (2008): Allocation and productivity of time in new ventures of female and male entrepreneurs, *Max Planck Institute of Economics Group entrepreneurship, Growth and Public Policy*, Jena, Germany.
- Watson, J. (2002): Comparing the Performance of Male- and Female-controlled Businesses: Relating Outputs to Inputs, *Entrepreneurship Theory and Practice* 26, 3, 91–100.
- Westhead, P., Storey, D. and Cowling, M. (1995): “An Exploratory Analysis of the Factors Associated with the Survival of Independent High-technology Firms in Great Britain”, en Chittenden, F., Robertson, M. y Marshall, I. (eds.), *Small Firms: Partnerships for Growth*, London: Paul Chapman Publishing: 63–99.