



# WOMEN MAYORS AND MANAGEMENT OF SPANISH COUNCILS: AN EMPIRICAL ANALYSIS

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*Carmen María Hernández-Nicolás, Juan Francisco Martín-Ugedo,  
and Antonio Mínguez-Vera*

## ABSTRACT

This paper analyzes the relationship between the gender of mayors in Spanish local government and different budget items. It uses a sample of local budgets for 8,112 town councils between 2002 and 2010, totaling 64,361 observations. The Spanish context is characterized by decentralization of public responsibility to a greater extent than in neighboring countries, feeding the debate on the operational efficiency of local government and the importance of gender in public management. Results show that councils with women mayors have lower annual interest and debt repayment obligations and have higher expenditure on security, protection, and social promotion. Thus, the presence of women in politics may serve to improve councils' economic situations, which is necessary not only for social justice but also for economic efficiency. In addition, in councils with more inhabitants, women mayors are more common, but women are less likely to occupy the office for longer periods.

## KEYWORDS

Councils, gender, local budgets, public management, women mayors, System Generalized Method of Moments (GMM)

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## INTRODUCTION

Since the twentieth century, women have been quickly incorporated into community and social action and, more slowly, into the political sphere. While in most countries there is a widespread democratization movement, women tend to be underrepresented in the area of politics. Although a serious problem, it remained invisible to governments, international organizations concerned with development, and society in general until the second half of the twentieth century.

Since 1995, the human development report of the United Nations has incorporated two new indicators to measure inequality between men and women: the Gender Development Index, which measures human development opportunities for women in each country, and the Gender Empowerment Index, which focuses on women's access to key positions. These indices make it possible to identify the position of women in the power structure of each country, especially in legislature and in companies, and examine the opportunities for women to access decision making in certain areas (Iglesia-Caruncho, Jaime, and Castillo 2003). These indices demonstrate that, in all countries, women occupy fewer key positions in business and in parliament.

In the private sector, there has been progress with the establishment of regulations in some countries, including Spain, which set minimum quotas for boards of directors, producing positive discrimination as a result. In addition, in most cases, the presence of women on boards has had a positive effect on the value of the firm (Campbell and Mínguez-Vera 2008; Martín-Ugedo and Mínguez-Vera 2014). In the political sphere, some countries, such as France, Spain, Italy, Portugal, Belgium, and Luxembourg, have passed regulations establishing political parity (40 to 60 percent) in electoral lists (Lovenduski and Norris 1993; Bonomi, Brosio, and Di Tommaso 2013).

The parity movement started in France, culminating with the Parity Act in 2000. The debate on parity gave rise to controversies over the founding principles of the French Republic. Opposing it, orthodox republicans considered that parity would strike a blow against universalism because it groups citizens in categories. The vote for reforms brought an end to the controversy. This gender parity law was first implemented in 2001, which resulted in the proportion of women town councilors rising from 25.7 percent to 47.5 percent in municipalities with more than 3,500 inhabitants.

In spite of this movement, the presence of women at all levels of political power is, on average, lower than that of men around the world (Wittenberg-Cox 2010). However, things are changing quite quickly. As an example, for decades, the Scandinavian countries, Norway, Finland, and, more recently, Sweden, have had the highest proportion of women in politics, as they were among the first countries to establish a balance between women and men in politics. Now, many other countries have similar figures; in 2003, Rwanda was the first country to surpass Scandinavian countries in women's participation in parliament (Dahlerup 2007). Empowering women and promoting gender equality is crucial to accelerating sustainable development. Ending all forms of discrimination against women and girls not only is a basic human right, but also has a multiplier effect across all other development areas.

In Spain, until a few years ago, the majority of the population did not approve of women holding high political office (Centro de Investigaciones

Sociológicas 2008). This, together with the fact that the dictatorial regime of Franco (1939–75) did not promote gender equality,<sup>1</sup> caused the late incorporation of women into the political arena. However, regulations such as *Ley de Igualdad* (the Equality Act) of 2007 are setting a new trend by setting targets for parity in electoral lists. The Equality Act specifies that the nominations of political parties should include at least 40 percent of candidates on electoral lists of each gender, except in councils of fewer than 3,000 inhabitants (5,000 inhabitants for council elections prior to 2011), as well as for islands with fewer than 5,000 inhabitants. This requirement for the presence of women in politics is considered by some researchers – such as Belén Blázquez, Raquel Ojeda, and Susana Ruiz (2006), among others – to be one of the great revolutions.

The deep economic crisis that is affecting the Spanish economy is having a marked effect on public finances. The reduction in tax revenues experienced since 2008, resulting in budget deficits, breaks the upward trend maintained since 1995. The sharp decline in corporate profits and decrease of private consumption are the main causes of the major reduction in tax revenues (Sanz, Romero Jordán, and Barruso Castillo 2009). During this widespread public debt crisis, with political models questioned around the world, the World Economic Forum in Davos in 2010 concluded that women should make a contribution to solving the crisis (Hausmann, Tyson, and Zahidi 2011). The differences in management styles may also produce differences in yields between women and men and may be important in this context (Amanatullah et al. 2010).

Therefore, this paper takes on the relevant task of extending to politics the study of the influence of gender on different variables related to management. Specifically, one of the objectives is to analyze whether councils with women mayors have lower annual interest and debt repayment obligations (one of the most important problems in the Spanish public sector). Cuts in the public sector usually have an initial impact on security, protection, and social promotion expenditures. For this reason, we also test the relationship between the gender of the mayor and these types of expenditures. Finally, we analyze the determinants of the presence of a woman as mayor on Spanish councils.

In Spain, in recent years, the decentralization of public responsibility has grown rapidly, fueling debate about the operational efficiency of local government. This work presents several contributions to this debate, using the lens of gender. First, it provides empirical evidence of the association between a woman mayor and various items in public budgets. It also studies the determinants of women mayors in Spanish councils. Most previous evidence in political science and economics has focused on the national level rather than the sub-national level. To the best of our knowledge, there are only two previously published papers that focus on the first topic examined in this study (Chattopadhyay and Duflo 2004; Ferreira

and Gyourko 2014), and two other papers focusing on the determinants of the representation of women at the subnational level (Smith, Reingold, and Owens 2012; Sundström and Stockemer 2015). However, the contexts of these works are quite different from the Spanish one. Chattopadhyay and Duflo (2004) examine India, where, since the mid-1990s, one-third of council mayor positions have been reserved for women. Smith, Reingold, and Owens (2012) and Ferreira and Gyourko (2014) study the United States, where there is no law promoting the active participation of women in the political arena. Sundström and Stockemer (2015) study different countries and focus on local councilors, but not on mayors.

The second contribution of this study comes from the empirical side. This paper makes an important effort to control the heterogeneity and endogeneity problems using the System Generalized Method of Moments (GMM) technique. In addition, the focus is on Spain, where there is an ongoing debate following the legislative changes aimed at increasing the presence of women in politics.

The results show that councils run by women tend to have lower annual interest and debt repayment. They also have higher expenditures on security, protection, and social promotion. Moreover, the presence of women mayors is more likely in councils that serve the largest number of inhabitants. Finally, women are less likely to be in office for longer periods.

## THEORY AND HYPOTHESES

The election of women to positions of political responsibility is important for several reasons. Arancha Elizondo (2008) highlights four. First, democratic legitimacy requires the presence of women in politics. One of the basic principles of democracy is that all groups in society participate in the collective decision making. Second, the integration of women in positions of responsibility is required to take advantage of the human capital that was previously being wasted. Third, it has been argued that representation of a group can only be undertaken by members of the same group; thus, women should be present in the political institutions to defend their interests and priorities. Finally, women develop a different political culture, and, therefore, their inclusion in positions of responsibility may be relevant. However, there are other reasons justifying the relevance of this topic. One important reason is that women, due to their lower economic resources and their higher poverty level, have different social and economic needs. Thus, the provision of some specific public services, such as medical care, housing, transportation, and education, is particularly important for women (Rehavi 2008).

The Global Summit of Women, held in Beijing in 1995, set the goal of democratic parity by 2005. The target was that the effective access of women

to the level of political decision making should be 50 percent. However, a study by the Inter-Parliamentary Union (IPU; 2010) points out that women occupy only 18.8 percent of the seats in the parliaments of the world. Despite the recommendation of the Council of Europe in 2003 to establish a balanced participation of men and women with women's participation of at least 40 percent, only 36 percent of the fifty Spanish members of the European Parliament were women after the 2009 elections. However, after the 2014 European elections, the recommendation of the Council of Europe was accomplished, and 41 percent of the fifty-four members of the European Parliament representing Spain were women.

Across Europe, women occupy 21.4 percent of the seats in the legislative chambers. This figure is 42 percent in the Nordic countries and below 15 percent in countries such as Ireland, Hungary, and Romania. Spain, with 36.6 percent, is ranked thirteenth in the world (Gutiérrez-Rubí 2008; Instituto Nacional de Estadística e Instituto de la Mujer 2011).

In Spain, the Equality Act was passed by the Parliament on March 15, 2007, and thus was compulsory for the council elections that took place on May 27 of that year. This act sets a minimum of 40 percent for each gender on political candidacy lists, except in councils of fewer than 3,000 inhabitants (5,000 inhabitants for council elections prior to 2011), as well as for islands with fewer than 5,000 inhabitants. Shortly afterward, the parliamentary elections on March 9, 2008 produced the first balanced parliament in Spanish history

As we will explain next, we argue that the increasing presence of women in politics, in part due to gender equality acts, will exert an influence on political outcomes. However, some previous studies focusing on gender have considered the bi-directionality and causal relations of the relationship between gender and some other variables. An example is the study of gender and the quality of government outcomes (corruption), where some studies, such as Hung-En Sung (2003), for ninety-nine countries, and Aksel Sundström and Lena Wängnerud (2013), for eighteen European countries, go further in their analysis than the studies developed by David Dollar, Raymond Fisman, and Roberta Gatti (2001) for over 100 countries, and Anand Swamy, Stephen Knack, Young Lee, and Omar Azfar (2001) for forty-three countries around the world, which only considered that greater representation of women leads to lower levels of corruption. As explained later, in this study, the methodology employed takes into consideration this problem by explicitly considering endogeneity.

### **Influence of gender on political outcomes**

According to Anthony Downs (1957), the preferences of politicians should have no impact on policy outcomes. His “median voter theorem” assumes

that the parties' sole objective is to win elections. In a two-party system and considering full information, there should be a complete convergence of policies. Extrapolating this argument to gender leads to the conclusion that both women and men should converge to make the same decisions. That is, they should both seek to position themselves in support of the preferences of the median voter. However, the models developed by Alberto Alesina (1988) and Timothy Besley and Stephen Coate (1997), as well as later empirical evidence (Besley and Case 2003; Lee, Moretti, and Butler 2004) showed that if candidates care about specific outcomes and they cannot credibly commit to moderate policies, then there will be a divergence in the policies implemented. Thus, if women have different preferences from men, they will implement different policies.

In this context, the presence of women can improve decision making since they offer unique perspectives, experiences, and work styles compared to their male counterparts (Daily and Dalton 2003). It has also been argued that women have compassionate attitudes and are mainly concerned for the welfare of other people (Wittenberg-Cox 2010). In addition, numerous investigations have noted that women are more risk averse (see Collette and Aubry [1990] for Canada; Jianakoplos and Bernasek [1998] for the US; Orser, Riding, and Manley [2006] for Canada; Borghans et al. [2009] for the Netherlands). This difference can lead to different decisions on indebtedness.

In Spain, local public administration has been significantly affected by the decline in economic activity. The reasons for this impact include: (1) the structure of the Spanish system of distributed powers between levels of government, which often generates a large amount of local spending to finance non-mandatory powers or improper expenditure in response to pressure from citizens on the closest level of government, or simply due to the pressure arising from the electoral process; (2) the small size of many Spanish municipalities, which often means they have fewer resources (Balaguer Coll, Prior Jiménez, and Vela Bargues 2003); (3) the inadequacy of resources allocated by the laws regulating local government; and (4) the impact on local public accounts of the fall in real estate activity.

As a result, in recent years, several countries in the European Union, including Spain, have limited borrowing by public institutions, especially by local government. There are two main reasons for limiting borrowing (Monasterio Escudero 1996): intergenerational equity, to prevent the current population enjoying services for which the financial burden is transferred to future taxpayers, and preserving the financial balance, meaning that revenues match expenses.

In 2001, the Spanish Government approved the Ley General de Estabilidad Presupuestaria (LGEP; General Law of Budgetary Stability), in response to the Stability and Growth Pact agreed on at the Amsterdam European Council in June 1997, which limits the use of the public deficit as

an instrument of policy in the Economic and Monetary Union. According to this law, which came into effect on January 1, 2002, the borrowing of local government is prohibited, except in special circumstances. Local governments may only incur annual deficits if they have a financial plan approved by a plenary meeting of the local government, and submitted to the Ministry of Finance, which is responsible for monitoring the actions included in the plan. Subsequent laws have made minor reforms to this system, but with the same objective.

This law can seriously affect the capacity of local government to invest. In addition, it disproportionately affects certain local authorities over others. The limits especially penalize municipalities with a small stock of capital, where investment has been historically low, as well as local governments with lower fiscal capacity or higher expenditure needs (Castells, Esteller, and Solé 2002). However, the financial burden has risen greatly together with total debt in large local governments after 1998. This means that the LGEP of 2001 has had only limited effect.

As noted above, women consider risk, such as the possibility of loss, much more carefully than their male colleagues (Olsen and Cox 2001). In addition, their preference for management by consensus reduces the number of risky decisions (Ferrary 2009). In business, companies managed by women have a lower level of indebtedness (Carter and Shaw 2006). In addition, as most Spanish cities are small, with limited fundraising capacity, management by risk-averse women mayors means that councils depend on their own resources, minimize dependence on external resources, spend less, and reduce investment, making them more resistant to economic crises.

The local budget heading represented by annual interest and debt repayment includes all the expenditure made by local authorities on annual interest and debt repayment. This heading also covers forecasts for the repayment of deposits and bonds, which had been made in favor of the local authority. In addition, the Real Decreto-ley 20/2011, de 30 de diciembre, de Medidas Urgentes en Materia Presupuestaria, Tributaria y Financiera (RDL 20/2011; December 30, Legislation of Urgent Measures in Budgetary, Tax, and Financial) prohibits resorting to credit operations, making the forecast of this resource irrelevant and reducing estimated losses.

In response to the economic crisis, several studies of the leadership styles of men and women have suggested that different management of councils will result in different treatment of various items. Thus, women, characterized by their prudence (World Bank 2011), estimate forecasts on the basis of the worst-case scenario, and this has a significant impact on the budget for income from financial assets (income from alienation of debt, actions and obligations, repayment of loans, and repayment of deposits).



We present the following hypothesis on the basis of the above-mentioned arguments:

Hypothesis 1 (H1): Councils with women mayors have lower annual interest and debt repayment obligations.

Gender equality makes public services more ethical, as part of the model of a good society and a renewed spirit of public service (Connell 2006). Women's management in politics may incorporate new features that have a positive impact on overcoming the crisis in public accounts. Women seek the welfare of the group (Wittenberg-Cox 2010), so they develop services to improve the lot of citizens, and they attach more importance to equality, facilitating communication, and citizen participation.

Political theory gives a preeminent place to the local institutions where citizens acquire the basic principles of democracy, participating in the solution of local problems and restricting the interference of centralized power. For this reason, the municipality constitutes a space of opportunity for women to develop their communities, improving the living conditions of citizens and gaining positions in decision making (Vázquez 2010). Women mayors also facilitate communication and encourage the participation of citizens in decision making more than men (Fox and Schuhmann 1999). Federación Española de Municipios y Provincias (FEMP; 2009) found that in Spanish councils, councilors occupying executive positions in most areas are men; except in some specific areas, such as social services and health, where more women councilors occupy executive positions.

In a time of increasing poverty, social aid can help alleviate the situation. However, due to the economic crisis, there have been many budget cuts in the Spanish public sector. For example, from 2009 to 2011, these budgets have been reduced by almost 5 percent (Guillén et al. 2012)

Several surveys show that women (more than men) prioritize spending on children, poverty, social welfare, healthcare, reducing wealth inequality, jobs provision, and maintaining social programs (Carpini and Fuchs 1993; Thomas and Welch 2001). This evidence is congruent with the Citizen Candidate Model. Previous evidence at council level has already shown that women have different attitudes related to those topics. For example, Chattopadhyay and Duflo (2004) show that councils with women mayors have better provisions of public goods such as health and sanitation services. In another example, Kathleen A. Bratton and Leonard P. Ray (2002) find that local councils with higher representation of women tend to be better at providing childcare. Another item of the local budgets compatible with this attitude of women is spending on security, protection, and social promotion.

On the basis of the above arguments, we advance a second hypothesis:



Hypothesis 2 (H2): Councils with women mayors spend more on safety, security, and social promotion.

### **Determinants of women mayors**

Arguments provided by different authors lead to the so-called “desirability hypothesis.” Following this theory, the less desirable and the less important the office, the more likely that women will hold it (Welch and Karnig 1979). That is, it is argued that executive positions with higher salaries, fewer seats, greater responsibilities, and longer terms are more rewarding, and thus more attractive, and will be more strongly contested by men. Faced with the likelihood of more competition from men, women find other seats more attainable. We observe that this theory is based on some common stereotypes. Some authors argue that men are mainly assertive in their pursuit of control, confident, and more aggressive, ambitious, dominant, forceful, independent, and prone to act as leaders (Deaux and Lewis 1984), and thus, they are more likely to attain the most attractive positions.

Initially, considering the desirability theory, researchers speculated that women would be more likely to gain public office in smaller municipalities where the positions carry less prestige and invite less competition from men (Karnig and Walter 1976; Rodriguez Moya and Gago García 2015). Yet most studies have found that larger municipalities are more conducive to women’s representation (Karnig and Walter 1976; Welch and Karnig 1979; Trounstein and Valdiní 2008; FEMP 2009).

There are many different arguments that might suggest that women are more likely to be mayors in larger cities. For example, women in urban areas tend to be more emancipated (Chulvi Ferriols 1999) and more involved in paid work activity (Del Río and Alonso-Villar 2007). They also tend to have more education (Fernández Aguerri 2002) and fewer sociological impairments (Silván 1991; Rodriguez Moya and Gago García 2015). Furthermore, discrimination against women is often lower in urban areas (Silván 1991). For these reasons, the representation of women is likely to be more equal in large councils.

Following previous evidence and most arguments, we propose Hypothesis 3:

Hypothesis 3 (H3): Councils with large populations are more likely to have women mayors.

The representation of women in a country, region, or council may be affected by the number of years that men and women have experienced equal political representation (Ruedin 2012). Many studies include the number of years that men and women have experienced equal political representation in their models in an attempt to explain the variance in women’s representation cross-nationally, generally measured in the number of years since the introduction of women’s suffrage (Kenworthy

and Malami 1999; Fallon, Swiss, and Viterna 2012). In the Spanish case, both women and men could exercise their political rights at the same time after Franco's death in 1975, but as highlighted in the introduction, women suffered clear discrimination in different fields, including labor relations, over a period of almost forty years. In addition, the Spanish mentality did not change very quickly, and until a few years ago, the majority of the population did not approve of women holding high political office (Centro de Investigaciones Sociológicas 2008).

The discrimination against women that has previously been highlighted is being overcome to some extent due to the Equality Act of 2007. Given that this law passed relatively recently, it is to be expected that mayors who have been in office for a longer time are more likely to be men rather than women. Previous descriptive evidence seems to support this shorter tenure of women in Spanish councils (FEMP 2009).

Thus, following previous arguments, we put forth Hypothesis 4:

Hypothesis 4 (H4): Mayors who have been in office for a long time are more likely to be men.

Some recent papers have explicitly considered the possibility that a community's political ideology may influence the presence of a woman mayor or women councilors (Smith, Reingold, and Owens 2012; Sundström and Stockemer 2015). Based on different arguments, they hypothesize that in geographical areas with socialist, social democrat, green parties, and, in general left and center-left electorates, the probability of women getting political positions is higher than in areas with conservative, right, and center-right electorates.

Among the arguments they provide, there are two that we consider fit particularly well in the Spanish case. On the one hand, socialist, social democratic, and green parties are generally receptive to groups traditionally excluded from the circles of power, including women (Matland and Studlar 1996; Htun 2005). On the other hand, political parties to the left show higher representational responsiveness, which involve a higher share of recruited women to seats of power and policy responsiveness that entails more attention to issues of concern to women (Caul 1999; Krook and Childs 2010).

Previous evidence seems to support these arguments. For example, Jean Yule (2000) found that in British local councils, the Labour Party is more supportive of women's upward mobility than conservative counterparts. Meg E. Rincker (2009) arrived at similar conclusions about Polish local institutions.

In the case of Spain, there is an additional argument for expecting larger representation of women in geographical areas with left and center-left electorates: the Equality Act was promoted by the Socialist Party, and it had 192 positive votes and 119 abstentions. All the abstentions came from the Spanish People's Party (center-right wing party).

Thus, according to previous arguments, we formulate the Hypothesis 5:  
Hypothesis 5 (H5): Women mayors are more likely than men mayors to be members of left or center-left parties.

## SAMPLE, DATA, AND METHODOLOGY

### **Sample**

The sample and the data were obtained from the website of the Ministry of Finance and Public Administration. More specifically, the financial data (expenditures, revenues, budget items, etc.) were obtained from the 2014 website of the Secretaría del Ministerio de Administraciones Públicas (Secretary of the Ministry of Finance and Public Administration). Financial information is published from the year 2002, which is the first year of the sample. We obtained the data relative to the mayor (gender, age, years in office, and political affiliation) from the 2014 local website of the Subdirección General de Administración (General Subdirectorate for Local Administration), which is part of the Ministry of Finance and Public Administration.

### **Data and methodology**

Data relating to mayors (gender, political affiliation, and year in which she or he began to serve as mayor) were provided by the Dirección General de Coordinación con las Comunidades Autónomas y Entidades Locales (General Direction of Coordination with Autonomous Communities and Local Governments), which is a subsidiary of the Ministerio de Hacienda y Administraciones Públicas. This information does not include personal data due to the Data Protection Act. The sample, composed of local budgets, covers the years 2002 to 2010 for 8,112 Spanish councils.

The explanatory variables considered, described above, are as follows: the annual interest and debt repayment ratio, calculated as the total interest payments and debt amortization divided by total expenditure and multiplied by 100 (AIDR) and the annual interest and debt repayment per capita (AIDPC). Finally, we include the spending on security, protection, and social promotion ratio as total spending divided by total expenditure, and multiplied by 100 (SSER) and the total spending on security, protection, and social promotion per capita (SSEPC).

A dummy variable (WOMAN) is used, which takes the value 1 when the mayor is a woman, and 0 otherwise. The control variables are the following: the logarithm of the number of inhabitants in the council (LPOP) and the logarithm of the number of days the mayor has been in the post (LPOST).

The analysis also includes a series of dummies (CV), which take the value 1 when the mayor belongs to the political party represented by this variable, and 0 otherwise. The analysis includes twelve different political parties, but the tables of results only show the findings related to the three main political parties – specifically the variables PSOE (dummy, which takes the value 1 when the mayor belongs to the Partido Socialista Obrero Español [Socialists], and 0 otherwise); PP (dummy, which takes the value 1 when the mayor belongs to the Partido Popular [Spanish People’s Party], and 0 otherwise); and IU (dummy, which takes the value 1 when the mayor belongs to Izquierda Unida [Communists and Ecologists], and 0 otherwise).

To analyze the influence of the presence of a woman mayor on the different variables analyzed, the following equation is estimated:

$$VBLE_{it} = \beta_0 + \beta_1 WOMAN_{it} + \beta_2 LPOP_{it} + \beta_3 LPOST_{it} + \sum_{j=4}^{15} \beta_j CV_{jit} + \psi_t + \eta_i + \varepsilon_{it} \quad (1)$$

where VBLE symbolizes the different variables included in the analysis and defined above: AIDR, AIDPC, SSER, and SSEPC. CV includes the dummies relating to political parties. The other variables have already been specified. Finally, the terms  $\psi_t$ ,  $\eta_i$ , and  $\varepsilon_{it}$  symbolize the impact of time, individual effect, and random effect, respectively.

The model is estimated using a panel data methodology, applying the GMM (Arellano and Bover 1995; Blundell and Bond 1998). This procedure makes it possible to control, first, for individual heterogeneity, introducing an individual effect like council characteristics (Himmelberg, Hubbard, and Palia 1999) and, second, for macroeconomic effects on the dependent variable using the time dummy variables. In addition, GMM estimation resolves the problem of endogeneity that can appear when the independent variables and the dependent variable are determined simultaneously. To remove this bias, this methodology estimates a system of two simultaneous equations, one in levels (using all possible lagged first differences variables as instruments) and the other in first differences with all the possible lagged variables in levels as instruments.

In the final model, the determinants of gender diversity are identified according to the following equation:

$$WOMAN_{it} = \beta_0 + \beta_1 LPOP_{it} + \beta_2 LPOST_{it} + \sum_{j=3}^{14} \beta_j CV_{jit} + \psi + \eta_i + \varepsilon_{it} \quad (2)$$

where WOMAN is the dummy of the gender of the mayor, which takes the value 1 when the mayor is a woman, and 0 otherwise. The other variables

were specified in the previous model. To estimate this model, we used a logit panel data methodology, which is appropriate when the dependent variable is binary.

Table 1 presents the statistics that describe the variables used in this study. Of the Spanish mayors in our sample, just 13.40 percent are women – a low level of representation. Many Spanish citizens are center-left, center-right, or nationalist-regionalist. Thus, 74.5 percent of the mayors are from the two majority political parties, which are center-right and center-left, respectively (39.8 percent PP and 34.7 percent PSOE). IU, the third force in politics, represents 1.7 percent.

Table 1 Descriptive statistics

<i>Variable</i>	<i>Mean</i>	<i>Median</i>	<i>Standard deviation</i>
AIDR	3.169	1.912	2.916
AIDPC	34.479	14.706	93.758
SSER	7.450	5.341	7.580
SSEPC	73.500	47.243	118.504
WOMAN	0.134	0.000	0.340
LPOP	6.565	6.347	1.795
LPOST	7.115	7.166	0.230
PSOE	0.347	0.000	0.476
PP	0.398	0.000	0.489
IU	0.017	0.000	0.129

*Notes:* Variables are: AIDR (annual interest and debt repayment divided by total expenditure, as a percentage), AIDPC (annual interest and debt repayment per capita), SSER (spending on security, protection, and social promotion divided by total expenditure, as a percentage), SSEPC (spending on security, protection, and social promotion per capita), WOMAN (dummy variable, which takes the value 1 when the mayor is a woman, and 0 otherwise), LPOP (logarithm of the number of inhabitants in the council), LPOST (logarithm of the number of days the mayor has been in the post), PSOE (dummy, which takes the value 1 when the mayor belongs to the Partido Socialista Obrero Español, and 0 otherwise), PP (dummy, which takes the value 1 when the mayor belongs to the Partido Popular, and 0 otherwise), IU (dummy, which takes the value 1 when the mayor belongs to Izquierda Unida, and 0 otherwise).

## RESULTS

The results of the estimations of Models 1 and 2 are presented in Tables 2, 3, and 4. We analyzed the data using the Stata software package. We present a summary of the results in a non-econometric format in the Appendix.

Table 2 shows that the presence of a woman mayor has a significant negative statistical relationship with the annual interest and debt repayment ratio (AIDR; Model 1) and the annual interest and debt repayment per capita (AIDPC; Model 2). The economic interpretation shows, in

Table 2 GMM estimation of the influence of the presence of a woman mayor on the payments on annual interest and debt repayment

Variable	Model 1: AIDR	Model 2: AIDPC
Constant	0.364 (0.365)	3.390 (4.772)
WOMAN	-0.142** (0.059)	-2.613*** (0.868)
LPOP	0.346*** (0.027)	4.305*** (0.376)
LPOST	-0.045 (0.041)	-0.591 (0.535)
PSOE	0.064 (0.069)	2.184*** (1.020)
PP	-0.044 (0.073)	0.431 (1.026)
IU	-0.047 (0.071)	-0.415 (1.145)
Year dummies	Yes	Yes
$F$	22.32***	21.811***
$z_1$	0.000	0.000
$z_2$	0.000	0.000
$m_2$	-1.11	-0.96
Sargan	0.335	0.531
Instruments	413	414
Councils	7,919	8,112
Observations	56,152	62,574

Notes: \*, \*\*, \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively. Standard errors are in parentheses. For description of variables, please refer to notes to Table 1.

$F$  is  $F$ -test value.  $z_1$  and  $z_2$  are two Wald tests of the joint significance of the reported coefficients and the joint significance of the time dummy variables, respectively (asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationship, probability is shown);  $m_2$  is a second-order serial correlation test using residuals in first differences, asymptotically distributed as  $N(0,1)$  under the null hypothesis of no serial correlation; Sargan is a test of the overidentifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of no correlation between the instruments and the error term, probability is shown.

Model 1, that women spend on average 0.14 percentage points less on annual interest and debt repayment (AIDR) than their men colleagues. In addition, councils with women mayors spend about 2.6 Euros less per inhabitant than councils with men mayors on annual interest and debt repayment (AIDPC; Model 2). So, Hypothesis 1 (H1) is confirmed: councils with women mayors have lower annual interest and debt repayment obligations. We also analyzed the effect of a lagged WOMAN variable. The results do not change substantially. For this reason, we do not present them in this paper.

In terms of the control variables, we obtained the expected results. Councils with more people have more annual interest and debt repayment. It means (according to Miller and van der Meulen Rodgers [2008]), *ceteris paribus*, that a 1 percent increase in the logarithm of the number of inhabitants is associated with an increase of 0.34 percentage points in the annual interest and debt repayment (AIDR; Model 1), and an increase of 4.3 Euros per inhabitant (AIDPC; Model 2). Medium and large councils can raise more revenue from taxes because of the number of inhabitants. They can also resort more to long-term debt, since due to their size, they undertake larger projects that last longer and attract investors (Duchéneau 2001), and hence, more spending on both public and private loans. The PSOE party, *ceteris paribus*, spends about 2.2 Euros more in annual interest and debt repayment (AIDPC) than other parties.

The  $F$  test shows that the model is valid. The  $z_1$  Wald test indicates the combined statistical significance of the independent variable coefficients, while  $z_2$  reports the joint significance of the time dummies. All tests show significance at the 99 percent level. The  $m_2$  statistic indicates that in all the models there is no second-order serial correlation in the first-difference residuals, showing that the models are not misspecified. Sargan's test shows a lack of correlation between the error term and the instrument used. Figures obtained on these tests confirm the validity of the estimation results.

Table 3 shows that the presence of a woman mayor has a positive and statistically significant influence on spending on security, protection, and social promotion. This result is observed when both the dependent variable is the spending ratio (Model 1) at the 95 percent level and spending per capita (Model 2) at the 10 percent level. From an economic point of view, women mayors spend 0.26 percentage points more on security, protection, and social promotion than men mayors under Model 1, and 2.6 Euros more per inhabitant under Model 2. This supports Hypothesis 2 (H2): councils with women mayors spend more on safety, security, and social promotion.

In terms of the control variables, the larger the number of inhabitants, the larger the social need. Specifically, an increase of 1 percent in the logarithm of the number of inhabitants provokes an increase of 0.83 percentage points in spending on protection and social promotion (Model 1) and an increase of about 16.2 Euros per inhabitant. The proximity of the mayor (Vázquez 2010) means that they are under pressure to resolve the direct needs of the citizens (Bastida Albaladejo and Benito López 2005, 2008), generating more spending under this heading of the budget.

The results shown in Tables 2 and 3 are evidence of a relationship between women as mayors and some municipal spending in Spain. In contrast, Ferreira and Gyourko (2014) do not find a statistically significant effect for US councils. We have not examined the reasons for such differences, but these could be, among other reasons, due to different cultures in the US and Spain, to the fact that in Spain the presence of



Table 3 GMM estimation of the influence of the presence of a woman mayor on safety, protection, and social spending

<i>Variable</i>	<i>Model 1: SSER</i>	<i>Model 2: SSEPC</i>
Constant	2.103** (0.721)	- 48.496*** (8.820)
WOMAN	0.262** (0.121)	2.602* (1.445)
LPOP	0.835*** (0.065)	16.193** (0.833)
LPOST	- 0.149* (0.077)	- 0.850 (0.872)
PSOE	- 0.083 (0.089)	1.366 (1.722)
PP	0.275* (0.157)	2.692 (1.928)
IU	- 0.156 (0.267)	- 2.347 (1.696)
Year dummies	Yes	Yes
<i>F</i>	40.44***	111.65***
<i>z</i> <sub>1</sub>	0.000	0.000
<i>z</i> <sub>2</sub>	0.000	0.000
<i>m</i> <sub>2</sub>	- 1.10	- 0.98
Sargan	0.995	0.395
Instruments	413	414
Councils	7,820	62,401
Observations	53,886	8,112

Notes: \*, \*\*, \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively. Standard errors are in parentheses. For description of variables, please refer to notes to Table 1. See *F*, *z*<sub>1</sub>, *z*<sub>2</sub>, *m*<sub>2</sub>, and Sargan in notes to Table 2.

women in politics has become compulsory, or to the fact that Ferreira and Gyourko (2014) focus on larger councils of more than 25,000 inhabitants.

Table 4 analyzes the determinants of the presence of women mayors on Spanish councils. The results show that the probability of finding a woman directing the council increases with the size of the council, measured by the logarithm of the number of inhabitants, LPOP. Specifically, according to the odds ratio, an increase of 1 percent in the logarithm of number of inhabitants increases the probability of finding a woman mayor by 1.07 times (Model 2). Women mayors are more usual in councils with the largest number of inhabitants, where the diversity of population requires heterogeneous representation. In larger councils, the population can have access to a higher level of education, reducing sexist behavior and increasing the level of tolerance (Elizondo 2008). In addition, the fact that the Spanish Equality Act applies to councils of more than 5,000 inhabitants

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Table 4 Estimated logit of the determinants of the presence of a woman as mayor, WOMAN

<i>Variable</i>	<i>Model 1: Coefficients</i>	<i>Model 2: Odd ratios</i>
Constant	- 2.582*** (0.563)	
LPOP	0.066*** (0.025)	1.069*** (0.026)
LPOST	- 0.303*** (0.074)	0.738*** (0.054)
PSOE	- 0.032 (0.073)	0.968 (0.071)
PP	- 0.254*** (0.076)	0.775*** (0.059)
IU	- 0.353** (0.179)	0.701** (0.126)
Year dummies	Yes	Yes
Time $\lambda_2$	0.000	0.000
Rep $\lambda_2$	0.000	0.000
$\rho = 0$	0.000	0.000
Councils	8,112	8,112
Observations	64,347	64,347

Notes: \*, \*\*, \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively. Standard errors are in parentheses. For description of variables, please refer to notes to Table 1.

Time  $\lambda_2$  is a Wald test of the joint significance of the time dummy variables, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationship, probability is shown; Rep  $\lambda_2$  is a Wald test of the joint significance of the reported coefficients, probability is shown;  $\rho = 0$  is a test of the joint significance of individual effects, asymptotically distributed as  $\chi^2$  under the null hypothesis of no joint significance, probability is shown.

can explain this result. Thus Hypothesis 3 (H3) is supported: Councils with large populations are more likely to have women mayors.

We find a negative effect of the logarithm of the time in post of the mayor, LPOST, on the dummy indicating a woman mayor, WOMAN (Model 1). The longer the mayor has been in post, the less likely that the mayor is a woman. In this way (Model 2), the increase in 1 percent of the logarithm of the number of days in post reduces the probability that the mayor is a woman by 0.7 times. In this case, the value of the odds ratio is lower than 1, indicating a negative coefficient (Model 1). This may be because the presence of women in politics is new, following the Equality Act of 2007. It is thus logical that most former mayors are men, so Hypothesis 4 (H4) is supported: Mayors who have been in office for a long time are more likely to be men.

The Gender Equality Act was passed in Spain at the initiative of the PSOE and backed by all political parties, except the center-right PP, which

abstained. Because of this sensitivity to equality on the part of political parties of progressive ideology, it is expected that they proposed a greater number of women mayors in their councils. We find that the odds of finding a women mayor are reduced 0.7 times when the winning party is the PP (Model 2). This result is similar for the IU Party (communist ideology).

However, the presence of the PSOE in the government of councils does not influence the likelihood of being ruled by a woman. So, these results do not support Hypothesis 5 (H5): Women mayors are more likely than men mayors to be members of left or center-left parties.

Tests of goodness of fit identify the high explanatory power of all variables (see Wald test and test of Rep  $\lambda_2$ ). In addition, the joint significance of the Wald test and the time dummies,  $\lambda_2$ , validates the use of these variables. These results demonstrate that the inclusion of these dummy variables is important because they accommodate the impact of changes in the macroeconomic environment.

## CONCLUSIONS

Gender and its influence on governance at the local level have captured the attention of researchers. These studies have focused mostly on the management of performance and quality of services provided. However, not enough attention has been paid to the influence of women in the management of local council budgets. This management is very important, especially for small councils with very limited financial resources and heavy dependence on central government financing.

The passing of laws and debates on gender equality in many countries, including Spain, has heightened the relevance of gender studies. Several measures have been taken in Spain to equalize opportunities between men and women in various social aspects. One such law is the Gender Equality Act of 2007, which enforces the right to equal treatment and opportunities between men and women, in all areas of life and, specifically, in the political, civil, labor, economic, social, and cultural spheres. In the political sphere, this act established a 40 percent minimum for candidates of each gender on political lists, producing the first joint government in Spanish history. The implementation of the Gender Equality Act has produced a noticeable change in councils of more than 5,000 inhabitants, as its requirements applied to these councils.

This paper analyzed the association between having a woman mayor and various items in public budgets, based on a sample of 8,112 town councils between 2002 and 2010. It also studied the determinants of women mayors in Spanish councils. In Spain, in recent years, the decentralization of public responsibility has grown rapidly, fueling debate about the operational efficiency of local government. In Spain, public responsibility is decentralized to a greater extent than in neighboring countries.

We found that in the sample examined, the presence of women mayors affects local government so that councils have lower annual interest and debt repayment obligations and greater spending on security, protection, and social promotion. The study also shows that councils with more people are more likely to be managed by women mayors. However, the time the mayor has spent in post decreases the probability that the mayor is a woman. These results suggest that the presence of women in politics is not only a question of social justice, but may also serve to improve the councils' economic situation.

*Carmen María Hernández-Nicolás*  
*University of Murcia, Campus de Espinardo, Murcia, Spain 30100*  
*e-mail: [cm.hernandeznicolas@um.es](mailto:cm.hernandeznicolas@um.es)*

*Juan Francisco Martín-Ugedo*  
*University of Murcia, Campus de Espinardo, Murcia, Spain 30100*  
*e-mail: [juanfran@um.es](mailto:juanfran@um.es)*

*Antonio Mínguez-Vera*  
*University of Murcia, Campus de Espinardo, Murcia, Spain 30100*  
*e-mail: [minver@um.es](mailto:minver@um.es)*

#### NOTES ON CONTRIBUTORS

**Carmen María Hernández-Nicolás** is a professional freelance economist. She holds a PhD in business administration from the University of Murcia, Spain. Her main research interests are gender diversity, corporate finance, and corporate governance. She has published in international journals such as *Economics and Management*.

**Juan Francisco Martín-Ugedo** holds a Diploma of Advanced European Studies from College of Europe, Bruges, Belgium, and a PhD in business administration from University of Murcia. He is currently Associate Professor of Corporate Finance at University of Murcia, Spain. His main research topics are corporate finance and corporate governance. He has published in refereed international journals such as *Journal of Business Finance and Accounting*, *Journal of Business Research*, *Journal of Business Ethics*, and *Feminist Economics*.

**Antonio Mínguez-Vera** is Associate Professor of Financial Economics at the University of Murcia, Spain. He holds a PhD in economics and business from the Technical University of Cartagena, Spain. His main research topics are gender diversity, corporate finance, and corporate governance. He has published in refereed international journals such as *Journal of*

*Business Ethics, International Journal of Human Resource Management, and Feminist Economics.*

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## NOTE

- <sup>1</sup> For example, the Ley de Relaciones Laborales, meaning the “law of labor relations,” which required a husband’s permission for a wife to work for pay, was in force until the end of the dictatorship in 1976.

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