FINANCIAL HEALTH OF LOCAL GOVERNMENTS: A GENDER APPROACH

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ABSTRACT

In recent years, public sector research has developed a line related to women's participation in government and its effect on public finances. In this vein, this paper attempts to empirically analyzethe effect women's presencein local governments has onmunicipal financial health. For that, we use a sample of the 140 Spanishmunicipalities with more than 50,000 inhabitants during the period 2008-2018 and we create four indicators that refer to cash, budgetary and service-level solvency, as well as a global index that represents the municipal financial health.Our empirical results show that municipalities with a female mayor and with higher percentages of women in the council tend to havehigher levels of these ratios. This supports the view that the entrance of women into the traditionally male-dominated public sphere could benefit governments' financial health.

KEYWORDS: financial health; financial condition; gender gap; women politicians; female participation; local governments.

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1. INTRODUCTION

In recent decades, international organizations have recommended governments to adopt policies that promote gender equality in the political arena. This is due to the fact that female representation and gender equality are key elements in improving the quality of governance (OECD 2014). Many governments worldwide have approved regulations to ensure gender equality and women's access to public leadership and the number of governments that consider gender perspectives in budgeting has been growing in the last two decades (Khan 2014; OECD 2019).Nevertheless,women's participationremains low in Parliaments and public organizations (Inter-Parliamentary Union 2020).

This issue has attracted the attention of public management and political science researchers, resulting in many studies focused on the role of women in governments (Hessami and Lopes da Fonseca 2020). A large part of the literature compares male and female expenditure patterns (e.g., Bolzendahl 2011; Cabaleiro-Casal and Buch-Gómez 2018; Cabaleiro-Casal and Buch-Gómez 2020; Ferreira and Gyourko2014; Funk and Gathmann 2015; Funk and Philips 2019; Hernández-Nicolás, Martín-Ugedo, and Mínguez-Vera2018; Holman 2014a; 2014b; Smith 2014; Slegten, Geys, and Heyndels2019; Slegten and Heyndels 2020; Svaleryd 2009). The literature has also analyzed gender differences in fiscal policies (e.g., Alesina and Giuliano 2009; Lott and Kenny1999; Slegten, Geys, and Heyndels2019), public indebtedness (e.g., Guillamón, Benito, and Bastida2011) and other policies regarding accountability and transparency (e.g., Araujo and Tejedo-Romero 2016; 2018; Bauhr, Charron, and Wängnerud2019). However, the impact of gender on the overall financial health of governments has not yet been analyzed in depth.

Financial health can be defined as the ability of governments to provide public services while satisfying their present and future obligations (CICA 1997; GASB 1987). Many

different indicators can be used to monitor the financial health of local governments (thereafter LGs) and support both managers and politicians when taking timely decisions to avoid financial distress. Monitoring financial health is always essentialbut it is even more important in times of crisis, given that governments must deal with financial difficulties. This is particularly relevant in LGs since they usually have access to limited resources while citizens request more and better public services (Brusca, Manes Rossi, and Aversano2015).

Focusing on LGs, most of the literature has attempted to develop a set of indicators that appropriately represent financial health. There is also an increasing amount of literature which identifies the socioeconomic, demographic, and political determinants that can provoke or accelerate some detrimental financial conditions (Bisogno, Cuadrado-Ballesteros, and García-Sánchez 2017; Brusca, Manes Rossi, and Aversano2015). However, we have hardly found any studiesthat focus specifically on the role of women in the financial health ofLGs. Brusca, Manes Rossi, and Aversano(2015) do not find a statistically significant relationship between the gender ofmayors and municipal financial health. Other papers that use measures related to financial condition as dependent variables, such as the deficit, the compliance with the principles of budgetary stability or the risk of default in LGs (e.g., Avellaneda, Bello-Gomez, and Gomes2022; Balaguer-Coll and Ivanova-Toneva 2021; Cabaleiro-Casal and Buch-Gómez 2021; Navarro-Galera et al. 2017; Navarro-Galera et al. 2020; Rodríguez-Bolívar et al. 2018), also introduce some independent variables related to gender; but the resultsare hardly conclusive.

Then, our paper attempts to contribute to the empirical literature on the influence of the gender of governors on the financial health. Specifically, we test the effect of female mayor and female members in the municipal councilon the financial health of LGs, using a sample of the 140 Spanish municipalities with more than 50,000 inhabitants during the

period 2008-2018. For this purpose, we builda more complex financial health measure than previous cited scholars have employed. This composite indicator is more advantageous than the implementation of several individual indicatorsbecause they are only partial measures of a broader concept (namely, financial health) (Ferreira da Cruz 2016).

Our empirical findings suggest that LGs with a female mayor and with higher percentages of women in the municipal council tend to have better financial health. These results underscore the importance of the role of women in municipal governments, whose vision and management style can have a positive impact on the management and economic and financial situation of these governments. Thus, we contribute to the ongoing debate about gender differences in public management and political sphere, which is still under-analyzed (Holman 2017; Park 2020).

This paper is structured as follows. Section 2 reviews the literature on financial health of LGs. Section 3 includes the theoretical framework on the role of women in governments and the hypothesis development. Section 4 addresses the methodology (sample, model, variables, and technique of analysis). Section 5 shows and discusses the empirical results. Finally, Section 6summarizes the main conclusions, limitations, and future lines of research.

2. FINANCIAL HEALTH OF LOCAL GOVERNMENTS

Financial health (or financial condition) has been defined as the ability of an entity to satisfy its obligations with its available resources (Lorig 1941). Adapting this definition to the public sector, financial health could be understood as the ability of governments to provide public services while satisfying their present and future obligations (CICA 1997; GASB 1987).

At a local level, Groves, Godsey, and Shulman (1981) were pioneers in defining and representing financial health by using solvency as their orientation. They used a large set of ratios to represent levels of cash solvency, budgetary solvency, long-run solvency, and service-level solvency. Later, Greenberg and Hiller (1995) defined financial health as the ability of an entity to preserve the social welfare of citizens with the resources available (sustainability), to adapt to economic and financial changes (flexibility) and to be independent of external financing resources (vulnerability). Subsequently, Wang, Dennis, and Tu (2007) set up an empirical measure of financial condition using government-wide information as required by Statement No. 34 of the Governmental Accounting Standards Board (GASB). It consists of the same four solvency magnitudes proposed by Groves, Godsey, and Shulman (1981), which are expressed through eleven financial indicators.

Zafra-Gómez, López-Hernández, and Hernández-Bastida (2009a) proposed one of the most used approaches to represent financial health in LGs. They merged the orientation of solvency adopted by Wang, Dennis, and Tu (2007) with Greenberg and Hiller's (1995) approach, proposing a definition of financial health based on cash solvency, budgetary solvency (represented by levels of sustainability, flexibility, and vulnerability) and service-level solvency. The most relevant advantage of Zafra-Gómez, López-Hernández, and Hernández-Bastida's (2009a) approach is the creation of a composite index of financial health by assigning points to each LG, following Brown's (1993) model[1]. Later, Cuadrado-Ballesteros, Mordán, and García-Sánchez (2014) and García-Sánchez et al. (2012) updated Zafra-Gómez, López-Hernández, and Hernández-Bastida's (2009a) approach, and we use this model to represent the financial health of LGs.

Other studies have focused on explaining factors that impair financial health, focusing on a wide range of demographic, socioeconomic, and political determinants (for further explanation, see Bisogno, Cuadrado-Ballesteros, and García-Sánchez 2017; Brusca,

Manes Rossi, and Aversano2015). However, the influence of women on the financial health of municipalities has been hardly studied and the results are inconclusive. For instance, Navarro-Galera et al. (2017) and Navarro-Galera et al. (2020) suggest that increasing the proportion of women councilors could help reduce the risk of Spanish LG default, although they do not find that the mayor's gender has a significant effect. Also, for the Spanish context, Balaguer-Coll and Ivanova-Toneva (2021) concluded that the presence of women mayors governing with a high proportion of female councilors (in compliance with the quota law) increases the probability of compliance with regulations on budgetary stability, financial sustainability, and compliance with legal debt limits. Similarly, Avellaneda, Bello-Gomez, and Gomes (2022) found that female mayors are positively associated with fiscal capacity and autonomy. However, Cabaleiro-Casal and Buch-Gómez (2021) concluded that both a female mayor and a greater share of female councilors worsen the fiscal performance of Spanish municipalities.Likewise, Rodríguez-Bolivar et al. (2018) found that Spanish LGs that are governed by a female mayor have a worselevel of financial sustainability; but they found no statistically significant evidence of the percentage of female councilors having an influence on the financial sustainability. Brusca, Manes Rossi, and Aversano (2015) did not find evidence to support a relationship between the gender of mayors and financial condition of Italian and Spanish LGs.

As we observe, all these previous findings are not conclusive. The reason may be that all of them use indicators that represent the financial situation partially. Our study aims to clarify the existing situation in the literature, by using a complex indicator that globally represents municipal financial health.

3. THE ROLE OF WOMEN IN GOVERNMENTS

According to Park (2020), we can expect gender differences in public management which lead governments to perform differently depending on whether the managers are men or

women. Two theories show that the gender of legislators can influence outcomes. First, the citizen candidate model states that candidates have different preferences for public policies depending on the personal characteristics, such as gender, of each incumbent (Besley and Coate 1997; Hessami and Lopes da Fonseca 2020; Osborne and Slivinski 1996). Thus, gender differences may result in diverse approaches to how much and what to spend available funds on (Anessi-Pessina et al. 2016).

Second, the social role theory explains gender differences in behavior through *stereotypes* (Eagly and Wood 2012). Gender stereotypes are learnt from our parents and during socialization (Eccles, Jacobs, and Harold 1990). In general, women are raised to be caregivers and men to be wage-earners, which generates the normative perceptions that are transmitted by the socialization process (Jennings 2007). Women are expected to have greater empathy with and concern for others (Eagly and Johannesen-Schmidt 2001; Eagly and Johnson 1990), greater sense of community and a longer-term outlook (Hamidullah, Riccucci, and Pandey 2015). In addition, they are expected to be more democratic, participatory, collaborative, cooperative, interactional, flexible, multifaceted, less hierarchical than men (Bass and Avolio 1993; Meier, O'Toole, and Goerdel 2006; Merchant 2012), as well as more risk-averse and competition-averse than men (Croson and Gneezy 2009; Suzuki and Avellaneda 2018).

Although much has changed in recent decades, gender *stereotypes* persist (Knudsen and Waerness 2008). Societal expectations influence behavior through social rewards and punishments for conforming or not conforming to these "expected" roles, which may create gender differences (Meyer-Levy and Loken 2015). Such differences between men and women lead them to take different decisions, which affects (among many other things) the way of governing in the public sphere. Some decades ago, Fox and Schuhmann (1999) already stated that women may provide a distinct "voice" in public

management.More recently, Park (2020) found in a meta-analysis a positive impact of female leadership and participation on the performance of public administrations.

Then, personal features that characterize the female stereotype agreeing to the social role theory (Eagly and Johannesen-Schmidt 2001; Eagly and Johnson 1990), may lead women to take decisions that positively affect the performance of public administrations (Park 2020), and accordingly, we propose the following hypothesis:

Hypothesis: Women's participation positively influences municipal financial health.

4. METHODOLOGY

4.1. Sample

The Spanish public sector is divided into three levels: Central, Regional (17) and Local (8,131) administrations. The relationship among them is based on competences, not hierarchy.

Spanish municipalities are governed by a mayor (the head of the executive branch), a municipal council (the legislative branch), and a professional administration. Local elections take place every 4 years and are based on a proportional representation system. After the elections, the municipal council is formed, and its members vote to elect the mayor. The mayor is elected from among members of the council and should be the head of their party's electoral list. Once the mayor is elected, he/she forms the local government with the councilors of the municipal council who are members of his/her party. However, if the mayor's party has not received the majority of votes and he/she can govern in coalition, the government includes councilors belonging to other political parties. Electoral lists of every political party should include at least 40% male and 40% female candidates (except municipalities with fewer than 3,000 inhabitants), according to Organic Law 3/2007 of March 22 for the effective equality of women and men. Thanks

to this law, the number of women in Spanish LGs has increased in the last decade, but there is still a long way to go before the number of men and women governing Spanish municipalities is equal. According to Cuadrado-Ballesteros, Guillamón, and Ríos (2022) and Ríos, Guillamón, and Cuadrado-Ballesteros (2022), the percentage of women in top positions in LGs is below 30%, and the percentage of female councilors is between 40-45%.

Local Entities have a limited their expenditures and must meet the purposes set out in their annual budget, which must be approved by the council. Local expenditures are mainly intended to provide certain public services based on the number of inhabitants and, in any case, those of public lighting, cemetery, waste collection, street cleaning, domestic drinking water supply, sewerage, access to population centers and paving of public roads. Expenditures must respect the limits and the phases of execution of the budget, which appear in the State of liquidation of the budget of expenditures and allow to know the bodies that have made the expense, the aims, and objectives of the expenditures, considering its classification by programs, as well as its economic nature, through the economic classification. Sometimes, local public services are not directly provided by the local administration, but by other decentralized agencies[2], like public companies, autonomous organizations, business entities, public foundations, and consortiums. Although they ultimately depend on the LGs, their budgets and financial statements are not consolidated in the local budgets, which refer exclusively to municipalities.

Local governments need sufficient resources to be able to finance their expenditures. The second article of the Local Government Regulatory Law setsthe main financial resources of LGs: income from assets; local taxes (which are, mainly, the Real Estate Tax -IBI-, the Economic Activities Tax -IAE-, and the Mechanical Traction Vehicle Tax -IVTM-);

participations in the State and autonomous community taxes; subsidies; public prices; credit operations; and sanctions within the scope of its powers. These resources are grouped into non-financial and financial revenues, and within the former, current, and capital revenues. According to Ministry of Finance and Public Function (2021), the Real Estate Tax, current transfers from the General State Administration and rates (provision of public services, development of competition activities local use and private use or use of the public domain) are the main sources of income for the municipalities.

In addition, according to the Local Government Regulatory Law, local entities must determine the imposition and abolition of their taxes and approve the corresponding ordinances that regulate them. They cannot create new taxes, although they can establish public rates and fees for the use of public goods and services, with some exceptions (water supply in public fountains, lighting and cleaning of public roads, and civil protection). However, Title II of Chapter II of the aforementioned Law establishes certain limits and conditions when determining the taxable event, exemptions, taxpayers, quotas and tax rates, and other characteristics of the tax system, etc.

Of the 8,131 Spanish municipalities, we selected all of those with a population of more than 50,000 inhabitants[3], which represent nearly 53 percent of the Spanish population. This resulted in a sample of 140 LGs that were studied during the period 2008-2018. The decision to focus on the largest municipalities was taken for different reasons. Firstly, these LGs are obliged to provide the greatest number of public services to citizens[4] so the results will consider more services than those that would be included in a sample using smaller municipalities. Secondly, in small municipalities, management is much more informal and is performed by a "non-professional" mayor, while the electoral incumbents in large municipalities are professional politicians (Cuadrado-Ballesteros, García-Sánchez, and Prado-Lorenzo 2013a). Thirdly, the available information and reliability of

the data are greater than in smaller areas, so the analysis will have greater scope and impact. Finally, the accounting model used by LGs with large populations (regulated by Order HAP/1781/2013) is considerably completer and more detailed than the simplified version used by small municipalities.

Spanish LGs context is appropriate for addressing the aim of this study because they have autonomy to manage expenditure and revenue and then their decisions affect the municipal financial health. In addition, several reforms have been implemented, on the one hand, to control financial health and, on the other hand, to improve gender equality. For instance, the Royal Decree-Law 20/2012 reformed the fiscal system to ensure financial stability, and the Organic Law 2/2012 ensures good financial health, dealing with budgetary stability, financial sustainability, and efficiency. For their part, as stated above, the Organic Law 3/2007 of March 22nd for the effective equality of women and men states that at least 40% of political party nominees on electoral lists should be of each gender (except for municipalities with fewer than 3,000 inhabitants).

Our dataset also includes political, socioeconomic, and financial factors. All the data were retrieved from the Spanish Home Office, the Spanish National Statistics Institute and the Spanish Ministry of Finance.

4.2. Model and variables

In order to test the hypothesis presented in the previous section, the following equations will be estimated:

$$FH_{it} = \beta_1 D.women_{it} + \beta_2 Women_{it} + \beta_3 Population_{it} + \beta_4 Dependency_{it} + \beta_5 Debtpc_{it} + \beta_6 Unemployment_{it} + \beta_7 Right_{it} + \beta_8 Strength_{it} + \beta_9 Elections_{it} + \varepsilon_{it} + \eta_i \quad \textbf{(1)}$$

$$Cash_{it} = \beta_1 D.women_{it} + \beta_2 Women_{it} + \beta_3 Population_{it} + \beta_4 Dependency_{it} + \beta_5 Debtpc_{it} + \beta_6 Unemployment_{it} + \beta_7 Right_{it} + \beta_8 Strength_{it} + \beta_9 Elections_{it} + \varepsilon_{it} + \eta_i \quad \textbf{(2)}$$

$$Budgetary_{it} = \beta_1 D.women_{it} + \beta_2 Women_{it} + \beta_3 Population_{it} + \beta_4 Dependency_{it} + \beta_5 Debtpc_{it} + \beta_6 Unemployment_{it} + \beta_7 Right_{it} + \beta_8 Strength_{it} + \beta_9 Elections_{it} + \varepsilon_{it} + \eta_i \quad \textbf{(3)}$$

$$Service_{it} = \beta_1 D.women_{it} + \beta_2 Women_{it} + \beta_3 Population_{it} + \beta_4 Dependency_{it} + \beta_5 Debtpc_{it} + \beta_6 Unemployment_{it} + \beta_7 Right_{it} + \beta_8 Strength_{it} + \beta_9 Elections_{it} + \varepsilon_{it} + \eta_i \quad \textbf{(4)}$$

In the four equations, subindices *i* and *t* refer to each LG and year, respectively; β are the parameters to be estimated; ε_{it} is the classical disturbance term; and η_i refers to unobservable heterogeneity.

The dependent variables represent financial health through different ratios that are aggregated to create a global index. This approach has been extensively adopted in the literature (e.g., Brown 1993; Cabaleiro-Casal, Buch, and Vaamonde 2013; Cuadrado-Ballesteros and Bisogno 2019; Cuadrado-Ballesteros, Mordán, and García-Sánchez 2014; Cuadrado-Ballesteros et al. 2019; García-Sánchez, Mordán, and Cuadrado-Ballesteros 2014; Kloha, Weissert, and Kleine 2005; Zafra-Gómez and Muñiz-Pérez 2010; Zafra-Gómez, López-Hernández, and Hernández-Bastida 2009b; 2009a). Although using composite indicators has drawbacks, as Bird et al. (2005) and Hendrick (2004) enumerated, using individual ratios (e.g., Citro et al. 2021; Hendrick 2004; Maher and Deller 2011; Ross, Yan, and Johnson 2015; Santis et al. 2020; among others) can be difficult to manage and excessively costly in terms of time. The results of this method are also difficult to convey (Brown 1993). Using a composite indicator is more advantageous

and facilitates comprehension and communication better than adopting several single indicators (Kloha, Weissert, and Kleine 2005). Furthermore, single indicators are merely partial measures of a broader concept of performance of something as complex as the financial situation of LGs (Ferreira da Cruz2016).

Concretely, this study uses the extended approach of Zafra-Gómez, López-Hernández, and Hernández-Bastida (2009a), who merged the solvency orientation taken by Wang, Dennis, and Tu (2007) with Greenberg and Hiller's (1995) view. In particular, the financial condition of LGs is represented by three dimensions: (i) Cash solvency, which is the capacity of the government to generate enough cash to fulfil financial obligations in the short run; (ii) Budgetary solvency, which refers to the ability of governments to generate enough income to pay for expenses without incurring in deficit; and (iii) Service-level solvency, which is the capacity of governments to provide the level of public services necessary to maintain social well-being for citizens.

Each dimension is represented by one or more ratios, as indicated in Table 1. So, firstly, we calculated each ratio for each LG in each year. Secondly, these ratios are aggregated by following the aggregation process proposed by Zafra-Gómez, López-Hernández, and Hernández-Bastida (2009a), which was updated by Cuadrado-Ballesteros, Mordán, and García-Sánchez (2014). More concretely, for ratios that are positively related to financial conditions (CSI, NSI, CEI and FRI), 1 point is assigned to sample observations that show values of ratios higher than the 75th percentile; 0.5 points are given if the value is between the 50th and 75th percentile; 0.25 points are assigned if the value is between the 25th and the 50th percentile; and 0 points are given if the value of these ratios is lower than the 25th percentile. For ratios that are negatively related to financial conditions (NFBRI, FCII, NDI, CFII and FII), the assignment of values is the inverse. That is, 1 point is assigned to sample observations that show values of ratios higher than the 25th percentile;

0.5 points are given if the value is between the 25th and 50th percentile; 0.25 points are given if the value is between the 50th and the 75th percentile; and 0 points are allotted when the value of these ratios is lower than the 75th percentile.

Consistently, from the value of each ratio, a score for each LG in each year has been obtained. Thus, if financial condition is represented by nine ratios, there will be nine scores, depending on the value of each ratio. Finally, we add up the scores of each ratio according to the classification in Table 1, creating four variables: *Cash*, *Budgetary* and *Service*, which represent cash, budgetary and service-level solvency, respectively; and *FC*, which is the global index.

Returning to the equations, the independent variables representing the presence of women in LGsare expressed through two indicators (Cuadrado-Ballesteros, Guillamón, and Ríos2022): *D.women* and *Women*. The former is a dummy variable that takes the value of 1 if the mayor is a woman and 0 otherwise. The latter is the percentage of female members in the municipal council, including the mayor. This is the most common way to represent female representation in LGs in the literature (Araujo and Tejedo-Romero2016; 2018; Balaguer-Coll and Ivanova-Toneva 2021; Cabaleiro-Casal and Buch-Gómez 2018; 2020a; 2020b; Funk and Philips 2019; Hernández-Nicolás, Martín-Ugedo, and Mínguez-Vera 2018; Holman 2014b; Smith 2014; Suzuki and Avellaneda 2018).

Finally, to isolate the impact of gender on financial health, all the equations control for the effect of the following socioeconomic and political factors whose influence on financial health has been evidenced in the literature (Bisogno, Cuadrado-Ballesteros, and García-Sánchez 2017):the number of inhabitants (*Population*) and percentage of dependent population (*Dependency*), which is the proportion of inhabitants over 65 and under 16 years old; the level of indebtedness (*Debtpc*) in per capita terms; the unemployment rate (*Unemployment*); the government's political ideology represented by

a dummy variable (*Right*), which takes the value 1 for right-wing governments and 0 otherwise; political strength (*Strength*), which is represented by a Herfindahl index[5] and takes values between 0 and 1, from the lowest to the highest levels of concentration (i.e., from the highest to the lowest levels of fragmentation); and the number of years remaining until the next election (*Elections*).

4.3. Technique of analysis

Equations (1) to (4) have been estimated by using two estimators for panel data models. Firstly, considering that the dependent variables (financial condition indicators) range between two values (i.e., they are left- and right-side limited), the Tobit estimator is appropriate here. It considers the censure of the dependent variables; however, the disadvantage of this method is that endogeneity problems cannot be controlled. Endogeneity appears in the four equations for three reasons (Wooldridge 2010): (i) the use of proxy indicators to represent unobservable variables like financial health, which results in measurement errors that may be correlated with some explanatory variables; (ii) results could be additionally controlled by other factors (e.g., population density, income or GDP, deficit situation, etc.), but they are omitted because they are highly correlated with other control variables so they would introduce multicollinearity problems; and (iii) the financial situation in a specific year could be affected by the financial situation of the previous year, so equations (1) to (4) may be modelled as AR (1), which generates reverse causality and introduces endogeneity problems.

Therefore, in addition to the Tobit estimator, this study uses the two-step system estimator of Arellano and Bover (1995) and Blundell and Bond (1998), which is based on the Generalized Method of Moments (GMM) and was implemented in Stata by Roodman (2009). This estimator fits well with the heteroscedasticity and serial correlation problems

that appear in the four equations[6], and it also removes endogeneity though instrumental variables. Concretely, the instruments are the lagged values of the independent and control variables. It has been demonstrated that these instruments are uncorrelated with the error term (Arellano and Bond 1991). Concretely, instrument validity is checked by: (i) the Arellano-Bond test for AR(2) in first differences under the null hypothesis of no serial correlation between the error terms; and (ii) the Hansen test of over-identification restrictions under the null hypothesis that the over-identifying restrictions are valid. The results of these tests are shown at the bottom of the Tables of results.

5. RESULTS

5.1. Descriptive analysis

Table 2 shows the descriptive statistics of the previously described variables. As can be observed, the mean value of FH is 3.73 (on a scale of 0–9, with a higher level indicating good financial health); this could be interpreted as a situation of warning. Nevertheless, there are important differences among LGs in terms of the minimum and maximum values: the lowest *FH* value is 0.25 for Parla in 2012 and Badalona in 2011; and the highest value is 8.5 for Estepona in 2013. Figure 1 shows the evolution of this indicator between 2008 and 2018: levels of *FH* decrease between 2008 and 2011 (crisis period), then they increase until 2013 and decrease again in 2014. From that moment, values tend to increaseslightly. The three-component evolution of *Budgetary* is very similar to the evolution of *FH*, while *Service* is generally constant over the whole period.

Regarding the gender variables, the mean value of *D.women* suggests that 23.79% of LGs in the sample have a female mayor and the mean value of *Women* indicates that about 42.65% of the council members are women. However, there are large differences in the sample, as the maximum and minimum values suggest. Concretely, Paterna is the municipality with the highest percentage of women in the government (60% after the

2007 elections); while Alcoy is the municipality with the lowest percentage (25.93% after the 2007 elections). In general, female representation in Spanish LGs has been growing, as can be seen in Figure 2. The percentage of LGs with female mayors was 19% in 2008, rising to 29% in 2015; while the percentage of female councilors was 42% in 2008, increasing to 44% in 2016.

Returning to Table 2, we can see the average size of the largest Spanish municipalities (172,131 inhabitants), with Madrid being the largest. The proportion of the dependent population (young and old people) is about 11.9%, although this percentage rises to 38.33% in Torrevieja due to the large number of old people living there, and it falls to 0.24% in Arona. The mean value of unemployment is 18%, with Sanlúcar de Barrameda as the municipality with the highest rate of unemployment (43.48%), and Pozuelo de Alarcón is the municipality with the lowest unemployment rate (3.99%). The level of indebtedness is 635.70€ per inhabitant, although it rises to 3,880.90€ in Jaen. Regarding political factors, the mean value of *Right* suggests that 55.45% of the observations in the sample have a right-wing government, although the governments are relatively fragmented since the Herfindahl index (*Strength*) shows a mean value of 0.35, ranging from 0 (maximum fragmentation) to 1 (maximum concentration).

Table 3 shows the bivariate correlations between the independent and control variables of the four equations to look for the existence of multicollinearity problems. In general, most of the correlations are not high so all of them can be entered together in the model.

5.2. Explanatory analysis

Table 4 and 5 show the results for the four equations by using the Tobit estimator and the GMM estimator[7], respectively. *D.women* is not statistically relevant in explaining any of the financial health indicators in Table 4, but it is relevant in most equations of Table 5.

All the significant coefficients are positive, which means that municipalities with female mayors tend to have better financial health than those governed by male mayors. Regarding the variable that represent the percentage of female councilors (*Women*), in both tables it is statistically relevant in most of the equations, positively affecting the most of financial health indicators. This means that municipalities with more women in governments tend to have better financial health.

These findings are according to the proposed hypothesis, that is, women's participation in LGs positively influences the municipal financial health. Firstly, based on these results, we can expect differences in the financial situation of LGs according to the gender of the council's members, which is corroborate the conclusion of Park (2020). This suggests that the (financial) decisions of LGs depend on the personal characteristics of the members, like their gender, which contributes to support the citizen candidate model (Besley and Coate 1997). Our findings are according to Anessi-Pessina et al. (2016), who concluded that gender differences may result in diverse approaches to how much and what to spend available funds on.

Secondly, these gender differences may be explained by the existence of gender stereotypes, as the social role theory proposes (Eagly and Wood 2012). According to this theory, women are expected to have greater empathy and concern for others (Eagly and Johannesen-Schmidt 2001), a greater sense of community, and a longer-term outlook (Hamidullah, Riccucci, and Pandey 2015). So, the positive effect that we have found may be due to these personal characteristics that lead women to take decisions that positively affect municipal financial health. Our findings are according to Park (2020), who concludes that the presence of women positively influences the performance of public administrations.

Furthermore, our empirical results add evidence to previous literature (Balaguer-Coll and Ivanova-Toneva 2021; Navarro-Galera et al. 2017; 2020), which concludes that increasing the proportion of female councilors in Spanish LGs could help reduce the risk of default, as well as increase the probability of compliance with regulations on budgetary stability, financial sustainability, and the legal debt limit. In addition, it is according to Avellaneda, Bello-Gomez and Gomes (2022), who found that female mayors are positively associated with fiscal capacity and autonomy of Brazilian LGs (although not with solvency). However, other scholars have found opposite results; for instance, Cabaleiro-Casal and Buch-Gómez (2021) and Rodríguez-Bolivar et al. (2018), who concluded that a greater share of female councilors worsen the fiscal performance and financial sustainability of Spanish municipalities. The diversity of findings is probably due to the way in which the financial health is represented. Considering that defining and describing this concept is an issue of great debate, here we use well-know and recognized indicators (see Bisogno, Cuadrado-Ballesteros, and García-Sánchez2017), that consider not only the "financial sustainability" and the "fiscal performance", as Rodríguez-Bolivar et al. (2018) and Cabaleiro-Casal and Buch-Gómez (2021) do, but also other aspects that are part of a concept as complex as that of financial condition (e.g., vulnerability, flexibility, service-level solvency, etc.).

Regarding the control variables, *Dependency*is negatively related with *FH* in both tables, which suggests that financial situation is worse in municipalities with more dependent population. Similarly, *Dependency* is also negatively related with *Cash*, *Budgetary* and positively related with *Service*. This means that municipalities with more dependent population tend to show a worse level of cash and budgetary solvency and a higher level of current expenditure by inhabitant. The explanation may be that municipalities with a higher proportion of inhabitants over 65 and under 16 years oldrequire more social and

health services while these citizens contribute less to public financesthan others (Bisogno et al. 2019; Rodríguez-Bolívar et al. 2016).

The variable *Debtpc* is positively related with financial condition indicators, except in explaining service-level solvency. One could expect that a good financial health should be related with a low level of indebtedness because this would suggest that the government may finance the current public policies and public services delivery without using public debt (European Commission 2012; 2016). However, our findings indicate the opposite link, that is, LGs with better financial health tend to show higher levels of indebtedness. This suggests that resources of Spanish LGs are not enough to finance public services and so LGs would resort to public debt as a way of financing. Bisogno et al. (2019) found a similar result for Italian LGs as well.

Regarding *Unemployment*, it is positively related with *FH*, *Cash* and *Budgetary* but negatively related with *Service*. These results are also according to Bisogno et al. (2019), who found a positive link between unemployment and financial health in the Italian context. A possible explanation is that, in Spain, unemployment subsidies are paid by the national government, so unemployment spending probably does not affect the level of solvency of LGs.

Concerning political factors, *Right* positively impacts on the dependent variables (although it is not statistically relevant in the fourth equation). This positive link suggests that financial health is better in municipalities governed by right-wing governments, which is according to previous findings obtained by García-Sánchez, Mordán, and Prado-Lorenzo (2012) and García-Sánchez, Mordán, and Cuadrado-Ballesteros (2014). *Strength* negatively impacts on the dependent variables, except in the fourth equation, where it has a positive coefficient. These findings suggest that more concentrated governments tend to show worse cash and budgetary solvency but bettercapacity to provide public services

that maintain social well-being of citizens (service-level solvency). Finally, *Elections* have positive coefficients, indicating that financial health is better in the year that an election is held, contrary to previous findings by García-Sánchez, Mordán, and Cuadrado-Ballesteros (2014), who used an older sample of LGs in Spain.

6. CONCLUDING REMARKS

In recent years, governments have become more aware of the need to incorporate women in governance. There is also a proliferating line of research that analyses the role of women in government and the effects of their increased participation. To extend this previous literature, our paper aims to test the influence of women on the financial conditions of LGs by using a complex financial health measure. For this purpose, we use a sample of the 140 Spanish municipalities with more than 50,000 inhabitants during the period 2008-2018.

The empirical results suggest that municipalities with more women in governments (a higher percentage of female members in the municipal council) tend to have better financial health.Furthermore, municipalities with a female mayor generally have better financial health than those governed by male mayors.These findings are in accordance with Balaguer-Coll and Ivanova-Toneva (2021), Navarro-Galera et al. (2017), Navarro-Galera et al. (2020), who concluded that the presence of women in LGs in Spain improves the financialsituation of their municipalities. These studies used individual ratios to represent financial health, whereas we have used a composite indicator to represent the financial condition of LGs in Spain. Single indicators are merely partial measures of a broader concept; that is, of something as complex as financial performance (Ferreira da Cruz 2016). Therefore, using composite indicators is more advantageous and easier to understand than adopting several single indicators (Kloha, Weissert, and Kleine 2005).

Thus, our findings support the relevance of ensuring women's participation in public administrations, which have historically been male-dominated organizations (Mastracci and Bowman 2015). Beyond the moral "obligation" to promote equal opportunities for women, we can conclude that women's participation in LGs could improve the financial situation of these municipalities. Considering the gender stereotypes proposed by the social role theory (Eagly and Wood 2012), it could be expected that the personal characteristics of female councilors cause LGs to behave more responsibly and promote actions that improve the financial situations of their municipalities.

These findings are very relevant, especially in the current coronavirus crisis, which has put great pressure on governments to cover citizens' needs under difficult financial restrictions. Beyond other mechanisms to recover or maintain good financial health, women's participation in governments seems to provide 'fresh air' and new points of view in a traditionally male-dominated context. Indeed, one of the key elements of the modernization of European societies (including Spanish society) during the 20th century has been the incorporation of women in the political arena (Nielfa Cristóbal, Ruiz Franco, and del Moral Vargas 2020). Although some things have changed in recent years, gender stereotypes persist (Hentschel, Heilman, and Peus2019) because society continues orienting girls and women towards specific values, like cooperation, collaboration andcaring for others. These personal characteristics (which are not stereotypically male) could help to bring the two features of a public administration together: caring for citizens and caring for finances. Therefore, women's participation in governments is essential not only to ensure gender equality today, but also to ensure good financial health.

Despite these contributions, this study has some limitations. Firstly, our findings are evidenced for Spanish municipalities with a population of over 50,000 inhabitants. These municipalities have a set of socio-economic and institutional characteristics that may

affect the results. Thus, conclusions and extrapolations should be made cautiously for smaller municipalities and municipalities in other countries, as well, where the institutional and socioeconomic context may be different. In this sense, future studies could be carried out with samples from smaller municipalities or in other contexts. Secondly, we have not considered some personal characteristics of mayors (e.g., education, experience, age, leadership skills, etc.), which may moderate the empirical results. This would also be interesting to study in the future. Thirdly, this study does not consider decentralized organizations, such as public companies, public business entities, public foundations, etc. This is a limitation because they do a considerable business of LGs (Cuadrado-Ballesteros, García-Sánchez, and Prado-Lorenzo 2013b), but local consolidated financial statement and budgets do not include their activity, so it is hardly to consider all these agencies at the same time.

ENDNOTES

[1]Brown's (1993) model always creates fiscally distressed local governments because some of them must occupy the bottom quartiles, although all of the governments are fiscally healthy. To overcome this limitation, the literature has also proposed absolute models on financial health, for instance the model developed by Kloha et al. (2005). This system incorporated a standard value for each indicator as a limit to distinguish good from bad financial health, instead of using comparisons between local governments. In so doing, they assigned points to each local government by using the limit standard value as a benchmark.

[2] In 2023, the total number of decentralized entities in Spain is 5,119, of which 2,428 belong to the local public sector (and the rest belong to other levels that constitute the regional and central public sector). Focusing on the local public sector 50.29% are public companies, 26.35% are autonomous organizations, 1.81% are business entities, 8.19% are consortiums, 9.84% are public foundations, and 2.50% is other types of organizations, like associations and user communities.

[3]The populations of the municipalities ranged from between 50,577and 3,223,334 in 2018 (the last year included in the study).

[4] Article 26 of the Local Government Regulatory Law (*Ley Reguladora de Bases de Régimen Local*) sets out a list of minimum services to be provided by local authorities: public lighting, cemeteries, waste collection, street cleaning, drinking water supply, sewer systems and drains, paving and access to the municipality. Municipalities with more than 5,000 inhabitants must provide all these services and, additionally, parks and green areas, libraries and waste treatment. Municipalities with more than 20,000 inhabitants must provide all these services and, additionally, police and protection services, social services, firefighting services, and sports facilities. Finally, municipalities with more than 50,000 inhabitants must provide all these previous services and, additionally, public transport and environmental protection services.

[5]$Strength = \sum_{k=1}^{n} S_k^2 / (\sum_{k=1}^{n} S_k)^2$, where S refers to the number of councillors from party k, and n is the number of parties in the local government.

[6] Heteroscedasticity and autocorrelation were checked by using the Breusch–Pagan and Wooldridge tests, respectively. The p-values led us to reject the null hypotheses of homoscedastic and no-serially correlated errors at a 95% confidence level. Results are available under request.

[7] Each equation additionally includes the first order lag of the dependent variable as an explanatory variable – i.e., AR (1) – because the GMM estimator allows endogeneity to be controlled. At the bottom of each equation, the p-values obtained from the Arellano-Bond test for AR (2) in first differences and the Hansen test are shown. We cannot reject the null hypotheses for either test at 95%, supporting the validity of the instruments.

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Table 1. Financial condition indicators

Indicator		Definition	Relation to financial health
Cash solvency		**Cash surplus index (CSI)**: Difference between short-term receivables, liquidity, and net short-term liabilities.	+
Budgetary solvency	**Sustainability**	**Non-financial budgetary results index (NFBRI)**: Current budgetary payables and non-financial capital budgetary payables divided by non-financial current budgetary receivables and non-financial capital budgetary receivables.	-
	Flexibility	**Net saving index (NSI)**: Net saving divided by net current liquidated rights.	+
		Financial charge index (FCII): Annual amortisation payment – interest and principal per inhabitant.	-
		Net debt index (NDI): Annual accumulation variation long-term credit operations per inhabitant.	-
	Vulnerability	**Current financial independence index (CFII)**: Current budgetary payables divided by current budgetary receivables except current grants.	-
		Total financial independence index (FII): Budgetary payables divided by budgetary receivables except grants.	-
		Fiscal revenue index (FRI): Fiscal receivables divided by net current budgetary receivables.	+
Service level solvency		**Current expenditure index (CEI)**: Current budgetary payables per inhabitant.	+

Source: García-Sánchez, Mordán, and Prado-Lorenzo (2012); Zafra-Gómez, López-Hernández, and Hernández-Bastida (2009b, 2009a); Cuadrado-Ballesteros and Bisogno (2019)

Table 2. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
FH	3.7317	1.5484	0.25	8.5
Cash	0.3086	0.2061	0	0.5
Budgetary	2.9806	1.3664	0	7
Service	0.4371	0.3697	0	1
D.women	0.2379	0.4259	0	1
Women	42.65	5.31	25.93	60
Population	172,131	311,282	50,098	3,273,049
Dependency	11.8967	14.8969	0.2396	38.3318
Debtpc	635.70	540.70	0.27	3880.9
Unemployment	18.09	7.21	3.99	43.48
Right	0.55	0.49	0	1
Strength	0.35	0.09	0.15	0.66
Elections	1.63	1.06	0	3

Table 3. Bivariate correlations

	D_women	*Women*	*Population*	*Dependency*	*Debtpc*
D.women	1				
Women	0.1123***	1			
Population	0.0853***	0.0533	1		
Dependency	-0.0268	-0.1207***	0.1284***	1	
Debtpc	-0.0337	0.0373	0.1572***	-0.0007	1
Unemployment	0.0142	-0.0522*	-0.0914***	0.2432***	0.1128***
Right	-0.0201	-0.0558*	0.0198	0.1751***	0.0753**
Strength	-0.0235	0.0892***	0.0176	0.3958***	-0.0101
Elections	-0.0139	-0.0195	-0.0009	0.1403***	0.016
	Unemployment	*Right*	*Strength*	*Elections*	
Unemployment	1				
Right	0.1906***	1			
Strength	0.3598***	0.3741***	1		
Elections	-0.0131	-0.0088	0.0701**	1	

Notes: †, *, **, and *** refers to statistical relevance at 90%, 95%, 99%, and 99.9%

Table 4. Empirical results by using Tobit estimator

	Eq (1) Dep. variable = *FH*		**Eq (2)** Dep. variable = *Cash*		**Eq (3)** Dep. variable = *Budgetary*		**Eq (4)** Dep. variable = *Service*	
	Coef.	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**
D.women	0.0495	0.0962	0.0138	0.0167	0.0442	0.0877	-0.0116	0.0304
Women	0.0884***	0.0040	0.0066***	0.0007	0.0750***	0.0036	0.0057***	0.0016
Population	0.5990†	0.3100	0.0222	0.0247	0.3390	0.2680	0.5890**	0.1970
Dependency	-0.0174***	0.0028	-0.0040***	0.0005	-0.0155***	0.0025	0.0023**	0.0009
Debtpc	0.0887	0.0892	0.0488**	0.0146	0.0262	0.0809	-0.1585***	0.0313
Unemployment	0.0208**	0.0070	0.0031**	0.0011	0.0192**	0.0064	-0.0117***	0.0023
Right	0.3702***	0.0856	0.0283†	0.0153	0.3696***	0.0780	0.0156	0.0268
Strength	-3.0895***	0.4855	-0.4395***	0.0928	-2.9959***	0.4454	0.9518***	0.1492
Elections	0.1790***	0.0269	0.0496***	0.0061	0.1368***	0.0246	0.0061	0.0081
/sigma_u	1.0812***	0.0750	0.0445**	0.0130	0.9286***	0.0650	0.6963***	0.0534
/sigma_e	1.1103***	0.0212	0.2476***	0.0059	1.0183***	0.0195	0.2781***	0.0080
rho	0.4867	0.0365	0.0313	0.0181	0.4540	0.0366	0.8624	0.0185

Notes: †, *, **, and *** refers to statistical relevance at 90%, 95%, 99%, and 99.9%

Table 5. Empirical results by using GMM estimator

	Eq (1) Dep. variable = *FH*		**Eq (2)** Dep. variable = *Cash*		**Eq (3)** Dep. variable = *Budgetary*		**Eq (4)** Dep. variable = *Service*	
	Coef.	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**
AR (1)	0.1899***	0.0161	-0.0506**	0.0165	0.1977***	0.0167	0.1337***	0.0172
D.women	0.4519**	0.1617	0.0175	0.0398	0.3018*	0.1418	0.2173**	0.0622
Women	0.0165†	0.0088	0.0060*	0.0023	0.0315***	0.0055	-0.0051	0.0040
Population	0.0170***	0.0013	0.0010	0.0006	0.0192***	0.0014	-0.0041***	0.0011
Dependency	-0.0036*	0.0014	-0.0020***	0.0004	-0.0038**	0.0013	0.0005*	0.0002
Debtpc	0.0022***	0.0001	0.0583***	0.0038	0.1967***	0.0114	-0.0329***	0.0026
Unemployment	0.0152**	0.0049	-0.0010	0.0014	0.0131**	0.0041	-0.0025*	0.0011
Right	0.2476***	0.0523	-0.0315**	0.0115	0.3613***	0.0377	0.0090	0.0142
Strength	-5.4485***	0.3868	-0.4418***	0.0869	-5.1492***	0.2942	0.4314***	0.0850
Elections	0.1405***	0.0102	0.0384***	0.0026	0.1010***	0.0084	0.0043*	0.0017
Arellano-Bond test for AR (2) in first differences	Pr > z = 0.714		Pr > z = 0.249		Pr > z = 0.825		Pr > z = 0.308	
Hansen test of overid. restrictions	Pr > chi2 = 0.132		Pr > chi2 = 0.093		Pr > chi2 = 0.092		Pr > chi2 = 0.243	

Notes: †, *, **, and *** refers to statistical relevance at 90%, 95%, 99%, and 99.9%

Figure 1. Evolution of financial health indicators in Spanish LGs

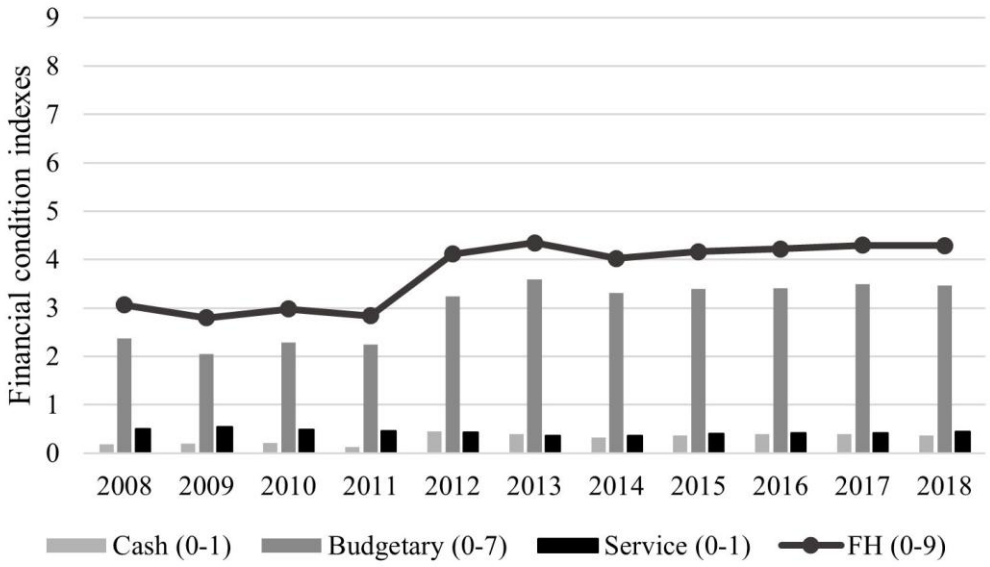

Figure 2. Evolution of women participation in Spanish LGs