

# Female CEOs, Returns and Risk in Spanish Publishing Firms

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*This study examines the influence of CEO gender on returns and risk for a sample of 2,157 Spanish publishing firms in 2013. The publishing sector is relevant in Spain, in terms of output, because of its positive contribution to the cultural sector's trade balance and also because it plays a key strategic role in a knowledge-based society. Previous evidence suggests that women in senior management position affect the performance of firms and also the level of risk that the firm is exposed to. Our results show that publishing companies whose CEO is female have greater returns. This result is observed when both the return on assets and the return on equity are considered as the dependent variable. When we focus on risk, we find a lower debt level and lower financial leverage when the CEO is a woman.*

**Keywords:** gender; publishing firms; performance; return; risk

## Introduction

Women in leadership positions have become a topical issue in the social domain as well as in the academic field. As a result, over the last few years there has been pressure from society to include women in key posts in firms. For instance, the average number of women sitting on boards of directors has risen throughout Europe, although female representation remains low compared to the USA, and major differences exist between countries (Heidrick and Struggles, 2014).

The impact of women in top management positions has been the subject of many studies. These studies have analysed the impact of having a female in the highest management positions on different aspects of management, such as decision-making (e.g. Nielsen and Huse, 2010), risk-taking (e.g. Jianakoplos and Bernasek, 1998), managing (e.g. Loden, 1985) and environmental policies (e.g. Kassinis *et al.*, 2016). The evidence shows that women can play an important role in labour practices and, consequently, have an impact on company performance (Kesner, 1988; Bilimoria and Piderit, 1994; Daily *et al.*, 1999; Farrell and Hersch, 2005).

Nevertheless, evidence relating to the link between gender and financial performance remains scant (Carter *et al.*, 2010). To our knowledge, as pointed out below, there is very little previous evidence focusing on the influence of the CEO gender on the performance of a company (return and risk) (Jalbert *et al.*, 2013; Khan and Vieito, 2013; Faccio *et al.*, 2016), and no previous evidence addressing this topic in the publishing sector.

The cultural sector in Spain is important for at least two reasons. First is its size, both in terms of its contribution to GDP, 2.5%, or 3.4% if all economic activities linked to intellectual property are taken into account, and of employment, 2.8% of all employment (MECD, 2014a). The second reason is the key strategic role which the cultural sector plays in a knowledge-based society. In such a society, culture based creativity is one of the fundamental cornerstones of innovation and growth (KEA, 2009; Martins and Terblanche, 2003).

Within the broad field that is the cultural sector, our study explores the impact of CEO gender on returns and risk in the publishing industry. This sector represents an average of 1% of national GDP and 38.2% of cultural GDP over the period from 2008 to 2012, according to the Satellite Account on Culture in Spain (MECD, 2014b). There is a 2.8% drop in this figure during that period. In early 2013, the Central Business Register (Spanish acronym – DIRCE, 2013) reported that 8,326

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firms operated in the publishing industry, out of a total of 108,556 in the cultural sector as a whole, which means that publishing accounts for 7.7% of the total. A total of 11% of publishing firms employed more than five workers and a mere 1.9% more than fifty workers. In terms of employment, the publishing sector accounts for 11% of cultural employment (INE, 2013).

One of the characteristics of the Spanish publishing sector is that firms are mainly public or limited companies – 71.9% – compared to 35.6% of firms with that legal status in the cultural sector as a whole (DIRCE, 2013).

From the standpoint of consumption, two points underpin the importance of the Spanish publishing sector. According to Eurostat (2015), with figures related to Spain in 2010, spending on books, newspapers and periodicals accounted for 27.1% of spending on culture. Mean household expenditure on culture in Spain was 884 euro. Reading is the second most important cultural practice, and with 58.7% of the population engaging in it. The first is listening to music, 84.4%, and the third is going to the cinema, 49.1%. (MCU, 2011).

Another key feature of the publishing sector is its crucial role in foreign trade. According to data from the State Agency for Tax Administration, the positive balance of trade in the cultural sector in 2013 was 36.5 million euro, with exports of 703.4 million. The publishing sector's contribution to exports was 522.4 million, the positive balance being 230.4 million. These figures highlight the key role of publishing in the overall balance.

We make a number of positive contributions to the literature. First, this paper adds to the scarce empirical evidence on the topic. Second, the US, where all previous evidence comes from, is considered to be a common law country. In contrast, Spain is a civil law country. Countries under common law systems tend to have more dispersed ownership structures, stronger investor protection, and more effective external control mechanisms, differences that affect corporate governance. Third, as mentioned previously, this paper focuses on the publishing sector. The cultural sector, in which publishing firms are included, plays a key strategic role in a knowledge-based society.

Our results show that publishing companies whose CEO is female have larger returns on assets and larger returns on equity. The results also show that publishing firms whose CEO is female have a lower debt ratio and lower level of financial leverage.

The remainder of the paper is structured as follows. The following section sets out the theory and hypotheses. The sample, data and methodology are described in the third section. Finally, the results and main conclusions are summarized in the fourth and fifth sections, respectively.

## Theory and hypotheses

The context of gender (in)equality has changed dramatically in Spain over the last 40 years. During the dictatorial regime of Franco (1939–1975), women's status was based on a protectionist male-breadwinner model, with women considered basically as housewives and caretakers, with motherhood as their main role (Bustelo, 2016). As an example of this situation, the 'Ley de Relaciones Laborales', the 'law of labour relations', which specified that a husband's permission was a legal requirement for a wife to work, was in force until 1976.

The first democratic elections after Franco died took place in 1977, and shortly after, 1978, the Spanish Constitution was approved, marking the end of the political transition. The Constitution explicitly recognizes the equality between women and men, and was the first step toward eliminating gender discrimination.

Several events in the following years are considered important in the effort to achieve gender equality in Spain. The Socialist Party (PSOE) won the 1982 Elections. Activism of women within the socialist party and pressure from feminist movements led to the creation of the Instituto de la Mujer (National Women's Institute). Then Spain joined the European Union in 1986, and that was another important element for legitimizing equality policies. As a consequence, Spain had to adapt Spanish legislation to European legislation on gender, resulting in changes not only in the content of policies but also in the style of policy-making and in the speeches of active politicians.

Although the first years after Franco's death were pivotal, other relevant events occurred later. The Ley de Igualdad (the Equality Act) of 2007 (Ley Orgánica 3/2007) tries to reduce gender discrimination in several fields, including politics. This Law establishes that the lists of candidates nominated by political parties should be at least 40 per cent of each gender.

Focusing on business/economics, the gradual incorporation of women into management posts in firms, and the introduction in many countries, including Spain, of gender equality laws, has sparked interest among researchers about women in top management positions (Heidrick and Struggles, 2014; Carter *et al.*, 2003; Campbell and Mínguez-Vera, 2008). In Spain, a number of measures have been implemented in an effort to ensure equal opportunities for men and women in this particular area. Such measures include the Unified Code of Good Governance, Código Unificado de Buen Gobierno de las Sociedades Cotizadas, CNMV (2006), lately modified in 2013 and 2015, which urges positive discrimination towards women so as to balance the representation of men and women on boards of directors and the already mentioned Equality Act, which aims to ensure that 40% of the board members of companies employing more than

250 workers are women. However, these are merely recommendations and are focused on large firms.

In recent years there has been an increase in the volume of literature on gender and corporate governance. Terjesen *et al.* (2009) conducted a survey of more than 400 studies of women on boards of directors, from many different areas of research. That research was very diverse, and had employed 20 theory-based perspectives at different levels – individual, board, firm and industry/environment. These levels and theories frequently overlap. Most studies, even if they focus only on economic aspects, may consider more than one theory or approach. For example, several papers, including Carter *et al.* (2010), Mateos de Cabo *et al.* (2012) and Lucas-Pérez *et al.* (2015), employ the same four theories: resource dependence, human capital, agency theory and social psychological theories. Terjesen *et al.* (2009) emphasize that the vast majority of the academic literature on women on boards does not explicitly develop a theoretical framework. It is basically descriptive.

The CEO gender has also been studied in the business/corporate governance literature, but less than the gender composition of the board of directors. Previous studies of CEOs have dealt with different topics, including demographics (Wiersema and Bantel, 1992), R&D spending (Barker and Mueller, 2002), and talent and payment (Gabaix and Landier, 2008). However, there is very little evidence linking the CEO gender to return and risk. Khan and Vieito (2013: 55) point out that, ‘whether the gender of the CEO has an impact on the performance of the firm has remained an unexplored empirical question’. In addition to Khan and Vieito (2013), only two other papers have dealt with this topic (Jalbert *et al.*, 2013; Faccio *et al.*, 2016). All these studies focus on the US, which is considered a civil law country.

The CEO may be more important than the board in the running of a company because he/she deals with the day-to-day operations of the firm. In addition, in SMEs the board is less likely to constrain the CEO.

Many of the theories employed to examine gender diversity on the board are also relevant in the case of CEOs. These theories link the attributes of individual managers to differences in leadership behaviour and effectiveness between women and men. Arguments for gender-based differences are grounded, on the one hand, on assumptions about the values, traits and skills required for effective leaders (implicit theories) and, on the other hand, on assumptions about inherent differences between men and women (gender stereotypes) (Nielsen and Huse, 2010).

Other theories, such as social identity and self-categorization, focus on the composition of the group as well as on group-level processes (Stafsudd, 2006; Terjesen *et al.*, 2009). Because the role of the CEO is performed by only one person, these social theories are

not generally considered when studying the impact of the CEO gender, and they are not taken into account in the present study either.

In the following paragraphs we present the hypotheses and the theoretical arguments supporting them. There is no single argument or theory for each hypothesis. Human capital theory (Becker, 1964) examines the role of a person’s stock of education, experience, and skills in enhancing cognitive and productive capabilities that can be used to the benefit of an organization. Years ago, it was commonly assumed that women lack adequate human capital for executive positions. However, things have changed radically in recent years/decades. Thus, studies in different fields, but mainly focused on the board of directors, argue that women are as well qualified as men (Carter *et al.*, 2010; Singh *et al.*, 2008).

Women’s qualifications have improved enormously in recent decades, and this increase has outstripped their involvement in management positions in firms (Farrell and Hersch, 2005). The under-representation of women may be due in part to a barrier which thwarts women in their job aspirations, the so-called ‘glass ceiling’ (Salinas and Román, 2014). This barrier may be partly explained by the role of women in the capitalist system, whereby they experience poorer working conditions (Engels, 1902), and family circumstances which make women more inclined to interrupt their professional career (Doeringer and Piore, 1971), or because certain jobs are traditionally associated with either men or women (Benhabib and Cornella, 1990).

Leadership theory suggests the importance of nurturing contacts, preparing for meetings, and creating alliances. Thus, as Huse (2008) highlights, women make specific contributions if their backgrounds, personalities, and behaviours are different from those of men. Loden (1985) argues that women are oriented to qualitative terms and men to quantitative terms, so that women are better at accomplishing specific tasks. This leads her to state that women exert a positive influence on functions related to corporate social responsibility and strategic control. Similarly, Kassinis *et al.* (2016) found that more diverse boards are related to more environmentally responsible policies and practices.

In addition, Hillman *et al.* (2002) and Daily and Dalton (2003) argue that women offer unique perspectives, experiences and styles of work compared to their male counterparts. Women in top management positions may enhance discussions since their style of communication is more participative and process oriented. Women managers also promote more creative discussion that can embrace a wider range of strategic options and interests, and is more likely to include clients’ needs. Finally, a female top manager may also enhance a company’s image, which may have a positive knock-on effect on clients’ behaviour (Smith *et al.*, 2006).

In contrast to human capital and leadership theories that present positive arguments for women in executive positions, Resource dependency theory presents arguments that may discourage the appointment of women to those posts. Resource dependency theory views firms as operating in an open system and needing to exchange and acquire certain resources in order to survive, creating a dependency between the firm and external units (Pfeffer and Salancik, 1978, page 1). Pfeffer and Salancik (1978) state that, 'to understand the behaviour of an organization you must understand the context of that behaviour – that is, the ecology of the organization'. Resource dependence theory recognizes the influence of external factors on organizational behaviour and, although constrained by their context, managers can act to reduce environmental uncertainty and dependence.

The basic argument of resource dependence theory can be summarized as follows: (1) organizations depend on resources; (2) these resources ultimately originate from an organization's environment; (3) the environment contains other organizations; (4) the resources one organization needs are thus often in the hands of other organizations; (5) resources are a basis of power, which is the control over vital resources (Ulrich and Barney, 1984); and (6) legally independent organizations can therefore depend on each other.

Using resource dependence theory, some authors, such as Zelechowski and Bilimoria (2004), argue that women relate less with managers in other companies, while others, such as Kesner (1988), argue that women are less likely to do business. As a consequence, some arguments based on the resource dependence theory discourage the appointment of women as CEOs.

Finally, certain authors, such as Powell (1990), Brancato and Patterson (1999), and Adams *et al.* (2002), point to the possibility that women in top management positions in companies will have no influence on a firm's performance. They argue that female managers reject feminine stereotypes and values and, as a result, behave like male managers.

Previous empirical evidence of the impact of women in top management positions on company performance in the USA is not conclusive, although it does tend to support a positive relationship (Shrader *et al.*, 1997; Erhardt *et al.*, 2003; Catalyst, 2004; Welbourne *et al.*, 2007; Khan and Vieito, 2013; among others). By contrast, other authors have failed to find any relationship (Watson *et al.*, 1993; Richard, 2000; and Farrell and Hersch, 2005) or have observed a negative relationship (Adams and Ferreira, 2009).

The evidence from Europe has also proved inconclusive. Campbell and Mínguez-Vera (2008) find a positive effect of women in top management positions on the value of Spanish listed firms, and Martín-Ugedo and Mínguez-Vera (2014) a positive effect on returns of

Spanish SMEs. Du Rietz and Henrekso (2000), for a sample of Swedish firms, and Smith *et al.* (2006) and Rose (2007) for Danish companies, report no influence of women in top management on performance. However, Böhren and Ström (2007) confirm a negative relationship between women on boards and company value for a sample of Norwegian firms.

In line with the bulk of prior evidence pointing to a positive influence of women in top management on company performance, the following hypotheses are posited:

**Hypothesis 1.1 (H1.1):** *publishing companies whose CEO is female have greater returns on assets.*

**Hypothesis 1.2 (H1.2):** *publishing companies whose CEO is female have greater returns on equity.*

Risk is another variable that has featured in many gender studies. These studies usually examine if there are differences in the behaviour of women and men, but do not probe very deeply into the reasons that may explain those results. When explaining the results, most authors employ arguments that are related to gender self-schema theory.

A self-schema is an individual's psychological construction of the self, based on a number of aspects. Gender self-schemas are developed from childhood and serve as mental models through which information is processed. Female (male) gender self-schemas are usually based on roles, norms, values, and beliefs that are appropriate for women (men). Thus, men are usually considered to be the income provider and to have autonomy, dominance, etc., while women are usually considered to be the homemaker, and to behave with deference and have an affiliation to others, etc. (Konrad *et al.*, 2000). Considering these self-schema arguments, men could be considered risk takers and women to be risk averse.

Recently, Maxfield *et al.* (2010) and Shapiro *et al.* (2015), have highlighted the fact that there is a tendency to overestimate the different levels of risk aversion women and men have. They argue that culture and stereotypes may be the underlying reasons for this.

There is a large literature showing greater risk aversion among women (Chaganti, 1986; Collette and Aubry, 1990; Olsen and Currie, 1992; Scherr *et al.*, 1993; Jianakoplos and Bernasek, 1998; DiBerardinis *et al.*, 1984; Khan and Vieito, 2013; among others).<sup>1</sup> In this vein, Olsen and Cox (2001) investigated gender differences in attitudes towards risk for investors with a

<sup>1</sup>It should be noted that risk is an inherent feature in the cultural industry and of course in the publishing sector, which might bias the decision to work in this field compared to options in other, more secure, sectors.

professional background and found that female investors weigh up risk attributes such as the possibility of loss and ambiguity to a greater extent than their male counterparts. The World Bank Report on Women (World Bank, 2012) also shows that women tend to be more careful and to display less ambition. Carter and Shaw (2006) found that the presence of women in management is linked to lower debt levels. In Spain, Hernández-Nicolás *et al.* (2016) report that women in decision-making tends to lead to lower debt levels and longer term debt with lower debt-servicing costs. Finally, Lundeberg *et al.* (1994) suggest that women are less sure about their investment decisions. This difference in confidence also leads to differences in risk behaviour.

In line with most of the arguments regarding the low debt levels of firms managed by women and their preferences concerning risk, we formulate the following hypotheses:

**Hypothesis 2.1 (H2.1):** *publishing companies whose CEO is female have a lower debt ratio.*

**Hypothesis 2.2 (H2.2):** *publishing companies whose CEO is female have a lower level of financial leverage.*

**Hypothesis 2.3 (H2.3):** *publishing companies whose CEO is female have a lower level of operational leverage.*

## Sample, data and methodology

The empirical study was carried out using the SABI database (The Iberian Balance Sheet Analysis System created by Bureau Van Dijk). This database provides accounting information for Spanish and Portuguese companies, obtained from annually published accounts. The sample includes 2,157 publishing firms for the year 2013. The data for CEO gender are only available for one year in this database and, consequently, it was not possible to collect a panel of data. The initial database was filtered to eliminate companies that had negative equity and firms whose total assets or total liabilities were not equal to the sum of their components.

To analyse the effect of the CEO on firm returns and firm risk, several dependent variables are considered. First, firm performance is measured by return on assets. The following model is proposed:

$$\begin{aligned} \text{Return\_on\_Assets}_i = & \beta_0 + \beta_1 \text{Woman\_CEO}_i \\ & + \beta_2 \text{Debt\_Ratio}_i \\ & + \beta_3 \text{Firm\_Size}_i + \beta_4 \text{Firm\_Age}_i \\ & + u_i, \end{aligned} \quad (1)$$

where *Woman\_CEO* is a dummy variable that takes a value of one when the CEO is a woman and zero otherwise. We consider several control variables (Farrell and Hersch, 2005): the debt ratio, calculated as total debt divided by total assets, firm size (the logarithm of total assets as a measure of firm size) and firm age (the logarithm of the firm age).

In the second model, we introduce the return on equity as an alternative measure of a firm's performance:

$$\begin{aligned} \text{Return\_on\_Equity}_i = & \beta_0 + \beta_1 \text{Woman\_CEO}_i \\ & + \beta_2 \text{Debt\_Ratio}_i \\ & + \beta_3 \text{Firm\_Size}_i + \beta_4 \text{Firm\_Age}_i \\ & + u_i. \end{aligned} \quad (2)$$

To study the relationship between the CEO gender, *Woman\_CEO*, and firm risk we use three models. In the first, the dependent variable is the debt ratio, as a measure of financial risk:

$$\begin{aligned} \text{Debt\_Ratio}_i = & \beta_0 + \beta_1 \text{Woman\_CEO}_i \\ & + \beta_2 \text{Return\_on\_Assets}_i \\ & + \beta_3 \text{Firm\_Size}_i + \beta_4 \text{Firm\_Age}_i + \\ & + \beta_5 \text{Intangible} + \beta_6 \text{Debt\_Cost}_i \\ & + \beta_7 \text{Interest\_Coverage} + u_i. \end{aligned} \quad (3)$$

The control variables are (Sánchez-Vidal and Martín-Ugedo, 2012; Bigelli *et al.*, 2014; Hernández-Cánovas *et al.*, 2016): Return on assets, firm size and firm age (defined above), Intangible assets (calculated as the sum of intangible asset divided by total assets), the cost of the debt, defined as the ratio of financial expenses to total debt, and the interest coverage ratio, measured as earnings before interest and taxes divided by financial expenses.

In the following model we include the degree of financial leverage as an alternative measure of financial risk:

$$\begin{aligned} \text{Financial\_Leverage}_i = & \beta_0 + \beta_1 \text{Woman\_CEO}_i \\ & + \beta_2 \text{Return\_on\_Assets}_i \\ & + \beta_3 \text{Firm\_Size}_i \\ & + \beta_4 \text{Firm\_Age}_i + \\ & + \beta_5 \text{Intangible}_i \\ & + \beta_6 \text{Debt\_Cost}_i \\ & + \beta_7 \text{INCO}_i + u_i. \end{aligned} \quad (4)$$

Following Yagüe (1987) and Azofra-Palenzuela *et al.* (1997), we calculate this variable as:

$$\text{Financial\_Leverage} = \log \left[ \frac{\text{Earnings before Interests and Taxes}}{\text{Earnings before Interests and Taxes} - \text{Financial expenses}} \right]. \quad (5)$$

The control variables are the same as those included in Model 3.

Finally, we test the influence of CEO gender on operational risk, using Equation (6):

$$\begin{aligned} \text{Operational\_Risk}_i = & \beta_0 + \beta_1 \text{Women\_CEO}_i \\ & + \beta_2 \text{Return\_on\_Assets}_i \\ & + \beta_3 \text{Firm\_Size}_i \\ & + \beta_4 \text{Firm\_Age}_i + \\ & + \beta_5 \text{Intangible}_i \\ & + \beta_6 \text{Debt\_Ratio}_i \\ & + \beta_7 \text{Cash\_Flow}_i \\ & + \beta_8 \text{Growth}_i + u_i, \end{aligned} \quad (6)$$

where operational risk is calculated as (Yagüe, 1987; Azofra-Palenzuela *et al.*, 1997):

$$\text{Operational\_Risk} = \log \left[ \frac{\text{Earnings before Interests and Taxes} + \text{Fixed cost}}{\text{Earnings before Interests and Taxes}} \right]. \quad (7)$$

We use this measure because it allows us to keep the entire sample. Other measures, such as the variability of the return, reduce the sample because at least 5 consecutive years of data would be necessary and it would affect all the regressions because we use a system of simultaneous equations. Lev (1974) links operational leverage and risk in a similar way. That study emphasizes that operational leverage increases the total and the systematic risk. Kallapur and Eldenburg (2005) show that uncertainty leads firms to prefer technologies with low operational leverage. Finally, Novy-Marx (2010) shows that operational leverage predicts returns in the cross section.

As control variables, following Gaud *et al.* (2005), we include return on assets, the size of the firm, the firm age, intangible assets, the debt ratio (defined above), the cash flow ratio, calculated as net profit plus fixed asset depreciation divided by total assets, and the growth ratio computed as the depreciation of assets divided by total assets.

The methodology employed is three stage least squares (3SLS). This methodology controls for the

endogeneity of the variables, using a system of simultaneous equations (Chamberlain, 1982). The alternative method to control for endogeneity, 2SLS presents consistent estimators but is not efficient. 2SLS does not consider that the equations are an interdependent system and it calculates an instrumental variables regression, equation by equation. 3SLS is based on 2SLS methodology but improves the estimators and thereby becomes more efficient. For more details on the differences between methods, see Dhrymes (1969) and Agunbiade (2011).

Descriptive statistics are presented in Table 1. As can be seen, the means of return on assets and return on equity are negative. The data illustrate the difficult situation of the publishing industry in the year 2013. Of the CEOs in our sample, 26% are women.

## Results

The results of the estimation of the different models are presented in Tables 2 and 3. Table 2 shows that a

woman as CEO exerts a significant positive influence on return on assets (model 1). The same influence is observed when employing the return on equity as the measure of a firm's returns (model 2). Therefore,

**Table 1** Descriptive statistics

	Mean	Median	Standard deviation	Maximum	Minimum
Return_on_Assets	-0.015	0.005	0.210	-0.995	0.882
Return_on_Equity	-0.048	0.016	0.409	-0.992	0.991
Debt_Ratio	0.404	0.368	0.272	0.000	0.999
Financial_Leverage	0.130	0.000	0.683	-4.727	5.207
Operational_Risk	3.386	3.317	1.677	-4.000	8.446
Woman_CEO	0.261	0.000	0.439	0.000	1.000
Firm_Size	5.584	5.435	1.979	13.389	-0.189
Firm_Age	8.335	8.508	0.903	4.394	10.633
Intangible	0.410	0.463	0.114	0.005	0.500
Debt_Cost	0.027	0.005	0.107	0.000	1.919
Interest_Coverage	1.768	0.371	48.036	-290.366	326.367
Cash_Flow	-0.001	0.022	0.259	-2.467	1.703
Growth	0.032	0.018	0.048	0.000	0.618

**Table 2** Three stage least squares (3SLS) estimation of the effect of the CEO gender (Woman\_CEO) on firm performance (Return\_on\_Assets, Return\_on\_Equity)

Variable	Model 1: Return_on_Assets	Model 2: Return_on_Equity
Constant	0.283*** (0.047)	0.291 (0.200)
Woman_CEO	0.069*** (0.010)	0.185*** (0.027)
Debt_Ratio	-0.027 (0.018)	-0.096 (0.0173)
Firm_Size	-0.011*** (0.002)	-0.015* (0.007)
Firm_Age	-0.015*** (0.005)	-0.050*** (0.017)
R2	0.120	0.064
Chi2	117.33***	65.93***

\* ,

\*\* ,

\*\*\* Significant at 10%, 5% and 1%, respectively. Standard errors in brackets.

Chi2 (test of combined significance).

Hypothesis 1 is confirmed; companies run by women have higher returns. These results are in line with most previous evidence for large and quoted firms (Shrader *et al.*, 1997; Erhardt *et al.*, 2003; Catalyst, 2004, and Welbourne *et al.*, 2007).

With regard to the control variables, smaller firms are more profitable. The influence of the firm's age on firm performance is negative. This result suggests that younger firms may have less inertia and fewer bureaucratic processes. They can also be more agile and flexible in response to environmental changes (Foster and Kaplan, 2001).

In Table 3 the results related to the effect of the CEO's gender on firm risk can be found. We observe that firms whose CEO is female have a lower debt ratio, and that this result is statistically significant (model 1). Therefore, Hypothesis 2.1 is confirmed and is consistent with most previous research. It may well

be that women have greater aversion to risk (Orser *et al.*, 2006; Borghans *et al.*, 2009; Scherr *et al.*, 1993 and Jianakoplos and Bernasek, 1998) which influences the firm's debt level.

In terms of the control variables, larger and older firms have higher debt ratios. On the other hand, firms with more intangible assets have a higher proportion of debt on the liability side of the balance sheet. This result is similar to the findings of Sogorb-Mira (2005) for the Spanish SME market and Michaelas *et al.* (1999) for the UK SME market. Sogorb-Mira (2005) explained that most Spanish SME debt is short term debt, given the difficulty of raising long term debt for such firms. Finally, higher costs of debt are associated with lower levels of debt.

In model 2 of Table 3, the dependent variable is the degree of financial leverage as an alternative measure of financial risk. The result is consistent with that observed in model 1: firms with a woman as CEO have less financial risk, and so Hypothesis 2.2 is also confirmed. In relation to the control variables, more profitable and older firms have more financial leverage. Company size and the cost of debt are both negatively related to greater financial risk.

Finally, we analyse the effect that a female CEO has on a firm's operational risk in model 3. We find no significant relationship, and so Hypothesis 2.3 is not confirmed. This result may be due to the fact that operational risk is more difficult to control than financial risk.

In relation to the control variables, smaller firms and those with a smaller cash flow ratio have less operational risk. However, more profitable, older firms, and firms with more debt and with more growth opportunities have greater operational risk.

**Table 3** Three stage least squares (3SLS) estimation of the effect of the CEO gender (Woman\_CEO) on firm risk (Debt\_Ratio, Financial\_Leverage, Operational\_Risk)

Variable	Model 1: Debt_Ratio	Model 2: Financial_Leverage	Model 3: Operational_Risk
Constant	0.761*** (0.079)	0.379 (0.251)	2.754*** (0.539)
Woman_CEO	-0.057*** (0.071)	-0.107* (0.055)	0.008 (0.106)
Return_on_Assets	-0.073 (0.046)	0.979*** (0.130)	1.480** (0.739)
Firm_Size	-0.021*** (0.004)	-0.040** (0.014)	-0.131*** (0.028)
Firm_Age	-0.041*** (0.009)	0.103*** (0.032)	0.166*** (0.062)
Intangible	0.390*** (0.059)	0.065 (0.029)	0.173 (0.421)
Debt_Cost	-0.0362*** (0.0058)	-0.239** (0.0095)	
Interest_Coverage	0.0001 (0.0001)	0.0003 (0.0002)	
Debt_Ratio			1.469*** (0.195)
Cash_Flow			-10.613*** (0.948)
Growth			13.350*** (1.628)
R2	0.130	0.032	0.373
Chi2	164.91***	152.60***	468.06***

\* ,

\*\* ,

\*\*\* Significant at 10%, 5% and 1%, respectively. Standard errors in brackets.

Chi2 (test of combined significance).

## Conclusions

Gender and its influence on a range of variables are attracting the attention of researchers. A number of studies have highlighted the differences between men and women with regard to how a company is run, and the impact which gender diversity has on work groups (Heidrick and Struggles, 2014; Carter *et al.*, 2003; Campbell and Mínguez-Vera, 2008; Martín-Ugedo and Mínguez-Vera, 2014; among others).

The number of gender studies has grown recently thanks to the emergence of laws and debates concerning gender equality in many countries, including Spain. A number of measures have been adopted in Spain to equalize opportunities for men and women in a range of social aspects. Such measures include the 2007 Law on Equality, which sought to introduce the right to equal treatment and opportunities between men and women in all walks of life, particularly in the political, civil, labour, financial, social and cultural arenas.

The sample examined includes 2,157 publishing firms for the year 2013. The results show that the fact that the CEO is a woman increases the returns on assets, and the returns on equity. The results also show that companies whose CEO is a woman have a lower debt ratio and lower degree of financial leverage. This last evidence is in line with some previous evidence that shows greater risk aversion among women compared to men. However, we find no influence of the CEO gender on operational risk, perhaps because this variable is more difficult to control, since it depends to a greater extent on exogenous variables.

This paper has a major limitation in terms of the availability of data on CEO gender, which are only available for one year in the database used in this study. As a consequence, it has not been possible to collect a panel of data. Another limitation is that the manuscript only focuses on one country, Spain. As a future line of research, we intend to examine whether different countries/contexts of the cultural/publishing sector may produce results.

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