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The influence of firm characteristics on earnings quality

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ABSTRACT

This study examines the effect of firm characteristics on earnings quality using a sample of Spanish hotel firms during the period 2000–2011. First, we build a multidimensional measure of earnings quality including attributes as persistence, predictability, variability and earnings smoothing. Second, we examine variables that are potentially associated with earnings quality and sort these into five categories: market variables, business strategy, ownership structure, audit function and control variables. The findings suggest that the internationalization, the location, the ownership structure and the audit function influence earnings quality in hotel firms. This paper presents managerial implications for professionals, users of financial information, and academics.

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1. Introduction

Financial reports are the primary source of publicly available information about a company's financial position and performance. The earnings figure is the most important firm indicator as provided useful information about the firm's valuation and are highly influential in decision-making (Schipper and Vincent, 2003; Francis et al., 2004).

Earnings measured as occupancy rate, return on assets, return on equity, stock return, has been widely used as an indicator for business performance in hospitality literature (see, e.g. Kim and Gu, 2005; Chen, 2010; Turner and Guilding, 2011; Guillet et al., 2012; Chen et al., 2012; Xiao et al., 2012). Macro environment factors and company-specific factors has been extensively studied as key variables that can help to enhance the earnings (see, e.g. Álvarez Gil et al., 2001; Chen, 2010). Empirical studies have demonstrated that variables such as the growth rate of total foreign tourist arrivals, financial crises, natural disasters, political events, location, internationalization, brand image, etc., seem to affect tourism firms' strategic orientation as well as their performance. It is also noted that the corporate governance and the ownership structure influence on hotel performance (Brady and Conlin, 2004; Perrigot et al., 2009; Turner and Guilding, 2011; Chen et al., 2012; Xiao et al., 2012). Nonetheless, although several authors have studied accounting quality in the hospitality and tourism literature, no work to date has focused on earnings quality measured considering a set of attributes and consequently this study represents an important step in the hospitality field.

Because earnings are widely used in various scenarios, the quality of reported earnings and their usefulness has attracted the attention of academics, professionals and standard setters. However, much of the empirical literature in this area focuses on publicly held companies compared to their privately held counterparts. The greater data availability for public firms likely explains this discrepancy. Morrison et al. (2010) analyze the key contributions to small tourism business research concluding that this field is a rich and fertile site for research activity.

Combining two literatures—earnings quality in private firms and the hospitality field—we develop our hypothesis. Earnings quality in private firms has garnered considerable academic and public interest (Ali et al., 2007; Yang, 2010; Hope et al., 2013). The determinants that engage in more earnings quality have attracted the attention of academics, professionals and standard setters. Most previous research has focused on monitoring mechanisms such as the ownership structure, the concentration of ownership as drivers of earnings quality (see, e.g., Wang, 2006; Ali et al., 2007; Hope et al., 2013). Additionally, the effects of tax compliance (Burgstahler et al., 2006; Van Tendeloo and Vanstralaen, 2008; Kosi and Valentincic, 2013) and debt covenants (Watts and Zimmerman, 1986; Kosi and Valentincic, 2013) are also factors directly linked to earnings quality.

In hospitality field, several authors have focused on the financial reporting and their quality. For example, Jeon et al. (2004) focus on persistence of abnormal earnings to analyze the quality of earnings in hotel companies. Turner and Guilding (2011) explain the manager's incentives to use accounting choices (capitalization or expensing of asset related expenditures) to alter the earnings

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figure. Parte Esteban and Such Devesa (2011a,b) focus on reported earnings and demonstrate the importance to reach certain earnings benchmarks (small profits against small losses). All of these studies have used individual earnings quality measures to demonstrate their hypothesis and our study includes earnings quality measurement based on a set of attributes.

The objective of this paper is to analyze the earnings quality and its determinants. First, we develop a multidimensional concept of earnings quality through four earnings attributes: persistence, predictability, smoothing and variability. Second, we explore the determinants of earnings quality. We explicitly consider a set of variables demonstrated to affect earnings quality in previous research such as leverage, size and ownership structure (Francis et al., 2004; Gaio, 2010) and re-examine the evidence using a sample of hotel firms and a multidimensional concept of earnings quality. Moreover, we examine the influence of variables such as the firm's business model (location, internationalization or primary activity of the company) and macroeconomics conditions (financial crisis) that remain open questions in the field of earnings quality. Our research attempts to fill this gap in the literature. That is, we explore the earnings quality measured as a multidimensional concept in a sample of hotel firms and propose a set of determinants that potentially influence on earnings quality. Our empirical design provides evidence for the relative importance of individual factors and their interaction in shaping reported earnings.

We focus on the tourism industry because it is a fundamental sector of the Spanish economy. The contribution of the sector to Gross Domestic Product (GDP) was approximately 15.2% in 2012. Spain receives the second most tourism revenue in the world and the most revenue in Europe (OMT, 2013). Specifically, the hotel sub-sector is considered one of the most important industries in the Spanish economy.

Our sample includes all hotels firms reporting financial statements over the period 2000–2011. In the first stage, we compute earnings quality for each firm through four individual measures: persistence, predictability, smoothness and variability. Then, we create an aggregate earnings quality measure for each firm by averaging the four individual measures. Higher rankings indicate higher levels of earnings quality. In the second stage, we define a set of variables that potentially influence earnings quality. To increase the robustness of the analysis, we divide the factors into the following groups: market variables, business strategy, ownership structure, audit function and control variables. We analyze these factors individually and then examine them together.

The results indicate that audit function and some factors related to business strategy are strong drivers of earnings quality in hotels firms. We also find that larger firms have higher earnings quality rankings, while firms with higher sales volatility, greater operating cash flow volatility, and a higher incidence of losses have lower earnings quality rankings. The evidence presents strategic implications for hoteliers, accounting standard setters and academics.

Our contribution to the literature is to analyze additional determinants of the earnings quality tendencies of private firms. Because the majority of companies in the global economy are private and family-controlled firms (La Porta et al., 1999), our study extends previous research on the earnings quality of private firms and their determinants in several ways. In particular, this study sheds light on a seminal paper in the hospitality industry by Jeon et al. (2004) that examines the earnings quality of Korean hotel firms using the persistence of earnings. This study supports the conceptualization of earnings quality as a multidimensional measure.

Furthermore, this study extends the literature on earnings quality in private firms and the hotel industry by including several determinants of earnings quality. Previous studies typically focus on one variable such as managerial style (Chen et al., 2012; Xiao et al., 2012), the link between performance and CEO compensation (Kim and Gu, 2005; Barber et al., 2006; Guillet et al., 2012), factors affecting systematic risk for the hotel industry (Kim et al., 2012), the effect of the financial crisis on the hotel performance (Chaston, 2012; Alonso-Almeida and Bremser, 2013), among others. In this study, however, we include general variables previously documented to influence earnings quality (Francis et al., 2004; Gaio, 2010) as well as specific variables related to the hotel companies such as the location, the internationalization, the primary activity of the firm, etc., which allows us to provide a more complete picture of the determinants of earnings quality in the hotel industry.

The paper is structured as follows. The next section provides a review of the previous literature and the development of our hypotheses; Section 3 presents the selection of the data, the definition and measurement of earnings quality, the explanatory variables and, finally, the research method. Section 4 presents the results. The last section provides our concluding remarks.

2. Literature and hypothesis

A majority of companies in the global economy are private and family-controlled firms (La Porta et al., 1999). In Spain, small and medium-sized enterprises (SMEs) represent 99% of businesses, employ 76.3% of workers and create 65% of value added (EC, 2012). Spain is characterized by the concentration of ownership in the hands of a few large stakeholders. According to La Porta et al. (1999), in Spain, the three largest shareholders own 51% of total shares, while in the US and the UK this proportion is 20% and 19%, respectively. Banks have traditionally a large presence as controlling shareholders in firms. The tourism industry shares these characteristics. Small companies are the typical business (only two companies are quoted) and access to financial resources is mainly determined by banks.

Market participants desire high-quality financial reporting because it reduces information asymmetries, increases overall transparency, and improves contracting (Watts and Zimmerman, 1986). High-quality financial reporting is approximated by earnings quality because earnings are the basis for the constructs and measures used by investors (Francis et al., 2004).

Most previous studies of earnings quality focus on listed companies and developed countries. Only recently research at the intersection of financial reporting quality and SME has attracted the attention of family firm scholars (e.g., Ball and Shivakumar, 2005; Burgstahler et al., 2006; Van Tendeloo and Vanstralaen, 2008; Katz, 2009; Givoly et al., 2010; Hope et al., 2013). The social role played by SME and family businesses is important for the development of economies, for emerging countries, and, especially, for the Spanish economy.

The earnings quality literature has focused on the determinants of earnings quality and its consequences (see Dechow et al., 2010 for a review). Recently, empirical research considering the quality of financial reporting in SME compared to large companies (e.g., Ball and Shivakumar, 2005; Burgstahler et al., 2006; Givoly et al., 2010; Hope et al., 2013) and the incentives to improve earnings quality has gained momentum (see Ali et al., 2007; Cascino et al., 2010). The literature documents that, in general, private companies experience lower earnings quality compared to public companies. Plausible explanations for lower earnings quality include the lower informational demand by stakeholders compared to larger companies (see Ball and Shivakumar, 2005; Burgstahler et al., 2006; Hope et al., 2013). The ownership structure, relationships between the controlling groups and other stakeholders, and concentration ownerships are extensively analyzed variables that influence earnings quality (see, e.g., Cascino et al., 2010).

Two competing theories are often proposed to explain the quality of accounting information in the case of SME (see, e.g. Jensen

and Meckling, 1976; Salvato and Moores, 2010; Yang, 2010; Hope et al., 2013). According to the *alignment hypothesis*, greater ownership concentration is beneficial because it reduces severe agency conflicts between owners and managers. The opposite theory, the *entrenchment hypothesis*, predicts that family ownership is negatively related to earnings quality because concentrated ownership increases the risk of wealth expropriation by controlling owners at the expense of minority shareholders (see Jensen and Meckling, 1976; Salvato and Moores, 2010, among others).

Interestingly, Chen et al. (2012) argue that the *alignment hypothesis* and the *entrenchment hypothesis* coexist using a sample of publicly traded hotels in Taiwan. Their evidence suggests that when insider managerial shareholdings increase, the convergence-of-interest effect has a greater impact than the entrenchment effect because of an improvement in firm performance (measured by ROA, ROE, and Tobin's Q) and a decrease in agency conflicts. However, the above effects reverse after a particular level (i.e., an optimal point). The evidence suggests that when insider managerial shareholdings increase beyond the optimal point, hotel firms performance (measured by ROA, ROE, and Tobin's Q) decrease consistent with the entrenchment effect.

The literature has also paid special attention to the monitoring role of boards (and CEOs) in influencing on financial reports and therefore earnings quality. The CEO is key figure in the production and supervision of financial information. Using samples from the restaurant industries Kim and Gu (2005), Barber et al. (2006), and Guillet et al. (2012) suggest that the compensation of CEO is associated with the financial performance of the firm. Motivated by the importance of earnings figure, Turner and Guilding (2011) examine the incentives and motivations of hotel owners and operators to engage in earnings management using a specific accounting item, the choice of capitalization or expensing of asset related expenditures. Parte Esteban and Such Devesa (2011a,b) argue that hotel managers are not indifferent to earnings figures, and they prefer to report small profits versus small losses. Moreover, they detect differences in fundamental variables when comparing firms that report losses and profits.

Cross-country differences in earnings quality may be due to the effects of national legal systems, investor protections, political institutions and enforcement systems (e.g., Leuz et al., 2003; Burgstahler et al., 2006; Kousenidis et al., 2013). The quality of earnings in specific industries have also been examined in previous researches. The most evidence comes from bank industry (Beatty et al., 2002; Kanagaretnam et al., 2014) and regulatory industries due to managers have incentives to engage in earnings management to obviate risk of investigation by governmental agencies (Jones, 1991; Key, 1997; Hughes et al., 2012). We can also find some studies in nonprofit organizations (Leone and Van Horn, 2005; Eldenburg et al., 2011) and hotel industry (Turner and Guilding, 2011; Parte Esteban and Such Devesa, 2011a,b). Together, these studies underline the importance of national institutional structures and industry characteristics in shaping and sustaining transparent reporting.

Based on the above argument, our study focuses on a single market – Spain – and single sector – tourism – where unlisted firms play a vital role in the economy. The tourism industry is among the most dynamic industries in Spain. The industry contributes to the Spanish economy, particularly to foreign exchange earnings, employment, and GDP. The goal of this paper is to examine the influence of firm characteristics on earnings quality in private firms. In the following paragraphs, we explain our hypothesis.

2.1. Hypothesis

The current financial crisis represents an important factor exogenous to most firms. The findings of empirical research on the impact of financial crises on earnings quality are unclear. For example, Callao and Jarne (2011) demonstrated that earnings-increasing manipulationis higher during the crisis for companies listed on the Spanish stock market. Kousenidis et al. (2013) documented that earnings quality, in general, has improved during the crisis period using a sample of listed European companies. However, in the presence of incentives to manage earnings, earnings quality deteriorates rather than improves. In addition, Cohen and Zarowin (2007) and Strobl (2013) propose that incentives for earnings management in bad times are lower and, therefore, earnings quality is higher.

Iatridis and Dimitras (2013) analyze the effect of the economic crisis using a sample of listed companies that are audited by a Big 4 accounting firm in five European countries. Their results reveal differences across countries with respect to the deterioration of earnings quality and value relevance. Portugal, Italy and Greece display stronger tendencies toward low earnings quality, and Ireland exhibits evidence of higher earnings quality. Interestingly, the findings for Spain are conflicting. Trombetta and Imperatore (2014) study US listed companies during the years 1996–2011 for documenting that financial crises significantly affect earnings management activities over and above the business cycle and the direction of the effect varies based on the intensity of the financial distress. Therefore, earnings management decreases when the intensity of the crisis is low, while it increases when the crisis is acute.

The hospitality industry is very sensitive to economic cycles because customers need discretionary incomes to consume these products and services. Recent empirical studies document that certain firm characteristics respond better to adverse economic situations. For example, Chaston (2012),using a sample of 500 small rural hotels in the UK with 10–49 employees, finds that family-owned hotels outperformed non-family businesses during the current financial crisis. Alonso-Almeida and Bremser (2013) find that the effects of the financial crisis on hotel performance depend on the firm management strategy. Using a sample of hotels in Madrid, their results demonstrate that hotels that focus on high quality, brand image and a loyal customer base were best equipped to handle the crisis. This study explores the effect of the financial crisis on earnings quality, and we expect that the financial crisis (*CRISIS*) negatively influences earnings quality.

H1. The financial crisis affects hotelsí earnings quality.

Accounting and finance literature suggests that country-specific factors and firm-specific factors explain accounting quality. La Porta et al. (2000) note that firmsí accounting practices often depend on the location (geographic and regulatory) of the firm. Leuz et al. (2003) note that changes in a firm's external environment influences the existing relations between firm characteristics and accounting decision-making. Moreover, although firms are subjected to the same regulations, the different conditions in which firms operate can affect firm strategy (accounting policy choices and earnings quality). Salvato and Moores (2010) consider that accounting quality include a company business and regulatory environment.

In the hospitality field, several researches have focus on the hotel's corporate strategy to engage in a superior performance in order to assist in the decision-making process. The owner's strategic decisions regarding the location (Álvarez Gil et al., 2001; O'Neill and Mattila, 2006; Xiao et al., 2012; Yang et al., 2014), the brand (Xiao et al., 2012), the choice between operating under hotel chain, independently or franchised (Álvarez Gil et al., 2001; Perrigot et al., 2009), the internationalization (Zahra et al., 2000; Golovko and Valentini, 2011), the hotel age (Álvarez Gil et al., 2001; O'Neill and Mattila, 2006; Mattila et al., 2009; Xiao et al., 2012), and environment practices (Álvarez Gil et al., 2001) influence on financial

performance. This paper uses a set of variables related to the hotel's corporate strategy that potentially affects earnings quality. Specifically, we examine the location, internalization, code and legal constitution as we explain in the next paragraphs. We called these variables 'business strategy' as depend on the hotelier decision-making.

The hospitality literature suggests that location is a crucial factor in the success or failure of the business in hotel management (see Yang et al., 2014, for a review in the field). The long-term fixed investments that hotels require to operate play an important role in cases of changes in location. According to the business orientation, hotels firms are classified as urban hotels or leisure hotels (O'Neill and Mattila, 2006). The former include business hotels that primarily offer accommodations, while the later mainly targets the leisure market. In a close study, Mattila et al. (2009) categorized hotel into urban, suburban, interstate highway, airport, resort, and small town to examine the hotel performance. The results show differences in financial performance between urban and resort areas on either coast. Building on previous research, we classify hotels according to their geographical location: hotels located in coastal areas and hotels located in urban areas (*LOC*) to examine whether they report different levels of earnings quality.

The hospitality industry involves firms that provide services such as accommodation, restaurants, theme parks, transportation, etc. The investment required to operate accommodations is higher than other tourism businesses such as restaurants, event planning, etc. The seasonality of the hospitality industry requires firms to maintain substantial investments in infrastructure. Chen (2010) explains that the high portion of fixed costs associated with hotel firms dramatically increases the sensitivity of these firms to business conditions and economic downturns. The primary activity of the hotel firm is considered when reporting the financial statements because it could influence on the level of accounting quality. We distinguish between firms that declare accommodations as their primary activity and those that declare accommodations as their secondary activity (*CODE*).

Large hotel chains are constantly expanding their business through mergers, franchising or management contracts. The Spanish hotel industry has engaged in an expansive strategy over the last decade. In this sense, most previous research suggests that internationalization has positive effects on the performance of SMEs (Zahra et al., 2000). The positive relationship between the degree of internalization and the performance of the firm is due to their improved ability to acquire new and unique knowledge and experience (Zahra et al., 2000; Golovko and Valentini, 2011), or lower risks from diversifying their sources of revenue (Qian, 1996), among others. However, Graves and Shan (2014) demonstrate a negative association between the degree of internationalization and ROA in their analysis of Australian SMEs. We introduce the internationalization (*INTER*) of hotels as an explanatory variable for earnings quality. We expect that internationalized hotels exhibit higher earnings quality than non-internationalized hotels.

We examine the business strategy of the hotel when they set as a company. The legal form of an organization affects agency relationships, taxes, and can affect the business strategy and the performance (Scherr and Hulburt, 2001). The most common legal forms in the Spanish market are Public Limited Companies (*PLC*) and Limited Liability Companies (*LLC*). Both types of companies are subject to specific requirements for constitution that then affect the development of their activities (such as access to financial resources, control over financial information, requirements of information disclosure, etc.). Therefore, the legal constitution (*LEGAL*) can influence earnings quality.

Our next hypothesis investigates whether business strategy (the primary activity, the geographical location, the internationalization, and the legal constitution) is associated with the quality of reported earnings. Hence, our second hypothesis is formulated as follows:

H2. Business strategy affects hotelsí earnings quality.

The effects of managerial style, ownership structure, ownership concentration, the CEO as a major shareholder, and the independence of the board on earnings quality received special attention within the earnings quality and family firm literatures. Agency theory predicts two possible effects related to ownership concentration. First, less separation between ownership and control leads to less manipulation of earnings for opportunistic reasons and, therefore, to higher quality earnings forecasts. Second, greater ownership concentration can result in executive entrenchment (see, e.g., Salvato and Moores, 2010 for a review).

The evidence linking ownership structure to earnings quality is mixed. Some studies show that family firms tend to exhibit higher earnings quality than non-family firms and explain this finding by arguing that family ownership reduces agency conflicts between owners and managers (e.g., Wang, 2006; Ali et al., 2007). For example, Wang (2006) finds that earnings quality is higher for family firms than for non-family firms in the U.S. Ali et al. (2007) use a sample of U.S. family firms to demonstrate that higher quality financial disclosures are followed by more analysts who then trade their stocks with narrower bid-ask spreads. However, existing studies suggest that private firms exhibit lower earnings quality than public firms because of the *entrenchment effect*. For example, Ball and Shivakumar (2005) argue that earnings quality is lower in private companies than in public companies because of different market demands. Hope et al. (2013) demonstrate that, on average, public firms exhibit significantly higher earnings quality than private firms because investors and stakeholders in public firms demand higher quality financial information. Givoly et al. (2010) also find differences in earnings quality between two types firms: publicly traded equity and privately held equity. The evidence suggests that private equity firms have lower propensity to manage income than public equity firms.

Xiao et al. (2012) focus on the influence of hotel owners on the level of financial performance. They demonstrate that the hotel owner's expertise in implementing superior strategies regarding market segment, brand, operation, and location (i.e., the state) are critical to hotel financial performance (revenues and profits). Brady and Conlin (2004) compared the revenue performance of two different types of hotel owners: real estate investment trusts (REITs) and non-REITs. The findings suggest that REIT-owned hotels perform better, on average, than non-REIT properties. Perrigot et al. (2009) compared the efficiency of pluralized chains (chains in franchised units) with that of company-owned units. The results indicate that pluralized chains report significantly higher average efficiency scores than predominantly company-owned hotels.

Our next hypothesis investigates whether the ownership structure and concentration of ownership are associated with the quality of reported earnings. We expect management style to influence earnings quality but we do not predict a direction of the relationship.

H3. Ownership structure affects hotelsí earnings quality.

Agency theory suggests that auditing services serve as a monitoring mechanism to reduce the costs that arise from the conflict of interest between principals and agents. Auditing services are usually viewed as a monitoring mechanism that firms demand to provide evidence that they produce reliable financial statements for stakeholders (mainly investors, creditors, etc.). To date, the evidence generally supports the above argument. Existing research has focused on the effect of audited firms versus non-audited firms on earnings quality and on whether a Big 4 auditor provides

superior audit quality than a non-Big 4 firm (DeAngelo, 1981; Van Tendeloo and Vanstralaen, 2008; Cascino et al., 2010).

For example, Cascino et al. (2010) using a sample of listed family firms, show that the presence of a renowned audit firm increases earnings quality. That is, the arguments of the seminal paper by DeAngelo (1981) are tested because higher audit quality enhances a higher degree of compliance. Van Tendeloo and Vanstralaen (2008) examine a sample of private European companies (Belgium, Finland, France, Netherlands, Spain and the UK) and find that large auditing firms (the Big auditors) constrain earnings management practices to a greater extent in countries with a high tax alignment (Belgium, Finland, France and Spain). They explain these results by analyzing litigation risk. Even in countries with a strong investor protection, investors, financial analysts and regulating authorities do not scrutinize private companies; therefore, their litigation risk is lower than for listed companies. Kosi and Valentincic (2013) analyze private firms using financial reporting for tax savings instead of for communicating objectives and their results highlight that auditors constrain firms from obtaining tax benefits. Burgstahler et al. (2006) and Francis and Wang (2008) study the effect of audit quality, among other variables, in earnings quality in cross-country analysis. Francis and Wang (2008) find that Big 4 auditors enforce high quality earnings only in countries with stricter investor protection regimes.

Our next hypothesis investigates whether audits are associated with the quality of reported earnings. First, we consider that audited companies (*AUD*) report higher earnings quality and, second, we test whether the size of the auditing firm (*BIG4*) is positively associated with earnings quality.

H4. Audit characteristics affect hotelsí earnings quality.

Finally, *Control Variables* have been included to reduce the noise in the measurement of the impact of accounting changes on earnings quality including size, leverage, losses, deviation of sales revenues and deviation of cash flow (see Francis et al., 2004; Gaio, 2010).

Firm size is often selected as a control variable in research. On the one hand, firm size is related to operation efficiency. On the other hand, firm size is correlated with the level of cash flow and accruals, which are inherently linked to earnings quality. The coefficient of the variable *SIZE* is expected to be positive (Francis et al., 2004; Gaio, 2010).

Leverage is another common control variable. Leverage represents the trade-off between tax benefits and bankruptcy costs. In particular, the level of leverage reflects the firm's potential risk and influences the firm's reporting and accrual accounting policies. The coefficient of the variable *LEV* is expected to be positive (Francis et al., 2004; Gaio, 2010).

Finally, we introduce the effect of losses in earnings that typically reflect economic distress in a business. We consider the standard deviation of the sales revenues *d*(*SALES*) and the standard deviation of the cash flow *d*(*CFO*) (Francis et al., 2004). We expect the incidence of *LOSS*, *d*(*SALES*), and *d*(*CFO*) to be negatively associated with accounting quality (Francis et al., 2004; Gaio, 2010).

3. Data, variables and methodology

3.1. Selection of the sample

The study draws on a comprehensive database (SABI) that includes most Spanish firms and is adequate to examine small business. The database includes financial statements and qualitative variables related to ownership structure, audit variables, and firm specific factors. Our sample includes all hotel firms reporting financial information annually over the period 2000–2011. We select companies declaring accommodation as their primary activity as well as their secondary activity. We deleted observation with total assets less than 1. We also deleted observations with missing values on earnings and total assets (i.e., data errors). The selection procedures results in a sample of 1805 firms and 21,660 firm-year observations. To mitigate the effects of outliers in our regressions, earnings and operating cash flows are winsorized at 5%.

The sample is formed mainly by SME firms because is the predominant firm size of Spanish economy. The characteristics of the sample are as follows. Mainly family firms (around 55%) compared to other ownership structures such as mutual funds, institutional investors, etc., constitutes the ownership structure. Most of the hotel in the sample is not internationalized due to their small size. It is also noted that most of the financial statements are not audited (more than 80%) because the requirement to be audited is linked directly with the size of the firm.

3.2. Measurement of earnings quality

Earnings quality is one of the most important accounting research topic of the last few decades. However, despite its relevance, there is neither an agreed-upon meaning of the concept nor a generally accepted approach to measuring earnings quality (Schipper and Vincent, 2003). Earnings quality is considered a multidimensional concept that is difficult to measure, and recent empirical research evaluates it by considering various earnings attributes (Francis et al., 2004; Gaio, 2010; Dechow et al., 2010; Kousenidis et al., 2013).

We measure earnings quality using accounting-based attributes that do not depend on market perceptions (e.g., Leuz et al., 2003; Francis et al., 2004; Burgstahler et al., 2006; Gaio, 2010; Kousenidis et al., 2013) because our sample includes mostly private firms (only two firms are listed).

Among the accounting-based attributes, time-series properties of earnings indicate how profits are distributed over time and the statistical characteristics of the process that generates earnings (Schipper and Vincent, 2003). Specifically, we consider the following earnings attributes: the *persistence* of earnings, which captures the extent to which a given innovation produces future earnings; the *predictive ability* of earnings, which is a function of the distribution of the innovation series; the *variability* of earnings, which measures the time-series variance of innovations directly. Additionally, we include *earnings smoothing* which measures the intentional attempts of managers to eliminate fluctuations in earnings.

Earnings persistence is associated with stability, sustainability, and recurrence of earnings over time. This attribute could be defined as the systematic behavior of earnings, and persistent earnings are viewed as desirable because they are recurring (see, e.g., Francis et al., 2004).

It is defined as the slope coefficient estimated from a first order autoregressive model (AR(1)) for annual earnings.

$$X_{j,t} = \phi_{0,j} + \phi_{1,j} X_{j,t-1} + \nu_{j,t} \quad (1)$$

where $X_{j,t}$ and $X_{j,t-1}$ are firm *j*'s earnings in year *t* and $t-1$, respectively, and coefficient $\phi_{1,j}$ captures firm *j*'s persistence of earnings.

Values of $\phi_{1,j}$ close to one imply highly persistent earnings, while values of $\phi_{1,j}$ close to zero imply highly transitory earnings. Persistent earnings are viewed as higher-quality earnings.

This measure, based on Lipe (1990), has been utilized by most researchers studying earnings persistence (e.g., Francis et al., 2004; Dichev and Tang, 2009; Cascino et al., 2010; Gaio, 2010; Kousenidis et al., 2013).

Earnings predictability measures the ability of earnings to be predicted. This attribute is measured based on the variance of the

earnings shocks, where higher variance implies lower predictability. We use the square root of the error variance from Eq. (1)

$$\text{Predictability} = \sqrt{\sigma^2\left(\hat{\upsilon}_{j,t}\right)}$$

Large (small) values of predictability imply less (more) predictable earnings. Earnings that are more predictable are considered higher quality earnings.

Earnings predictability has been measured with this method, proposed initially by Lipe (1990), by many researchers such as Francis et al. (2004), Cascino et al. (2010), Gaio (2010), and Kousenidis et al. (2013), among others.

Earnings variability is measured as the standard deviation of earnings.

$$\text{Variability} = \sigma(X_{j,t})$$

where $X_{j,t}$ is firm j's earnings in year t.

Higher (lower) values represent higher (lower) levels of earnings variability, which are interpreted as lower (higher) earnings quality.

Earnings variability has been used by researchers such as Francis et al. (2004); Francis and Wang, 2008 or Dichev and Tang (2009).

Earnings smoothing is considered a manipulative technique to reduce natural earnings variability. In this view, smoother earnings imply lower earnings quality (see, e.g., Dechow and Skinner, 2000; Zeghal et al., 2012). It is usually measured as the ratio of earnings variability to cash flow variability.

$$ESM = \frac{\sigma(X_{j,t})}{\sigma(CFO_{j,t})}$$

where $X_{j,t}$ is firm j's earnings in year t and $CFO_{j,t}$ is the cash flow from operations in year t.

Lower (higher) values indicate higher (lower) variability in cash flows than in earnings and, therefore, a higher (lower) level of artificial earnings smoothing.

Scholars who employ this measure of earnings smoothing, proposed by Leuz et al. (2003), include Francis et al. (2004), Burgstahler et al. (2006), Van Tendeloo and Vanstralaen (2008), Cascino et al. (2010), Gaio (2010), and Kousenidis et al. (2013), among others.

Table 1 Panel A, summarizes the definition and the construction of each attribute. Following previous research (e.g., Leuz et al., 2003; Gaio, 2010), we compute an aggregate earnings quality measure. Higher rankings suggest higher levels of earnings quality; therefore, higher values of the aggregate measure of earnings quality (EQ) suggest higher earnings quality.

3.3. Measurement of the determinants of earnings quality

As we explained before, we examine variables that are potentially associated with earnings quality and sort these into five categories: market variables, business strategy, ownership structure, audit function and control variable. In the next paragraph, we explain the definition of the variables.

First, we explore the effect of the financial crisis on earnings quality (*CRISIS*). The economic crisis began in 2007 in the bank system. The most common approach to analyze the effect of the financial crises in the literature is through binary variables based on underlying financial variable. Building on this previous literature, we create a dummy variable that takes the value of 1 for the crisis period 2008–2010 and 0 for the pre-crisis period. Then, we consider that the 2008 is the first year being affected by the crisis (see Callao and Jarne, 2011; Chaston, 2012; Alonso-Almeida and Bremser, 2013). In a sensitivity analysis, we date the financial crisis to 2009 instead of 2008 because the real effects of the financial crisis on the hotel industry could begin in either 2008 or 2009. We obtain similar results.

The location variable (LOC) is measured according to the geographical location of the hotel: coastal areas and urban areas (O'Neill and Mattila, 2006; Mattila et al., 2009). To identify the primary activity of the hotel (*CODE*), we use the main activity declared by the hotel when reporting financial accounting statements. That is, we use a dummy variable that takes the value of 1 if the hotel firm declares accommodations as their primary activity and the value of 0 is the hotel declares accommodations as their secondary activity. The legal constitution (*LEGAL*) allow us to discriminate between the legal adopted by the firm when establishing as a company in the market. This variable is a dummy variable that takes the value of 1 if legal of the firm is PLC, or 0 otherwise.

Perrigot et al. (2009) and Xiao et al. (2012) provide useful reviews of the hospitality literature about the definition of ownership structure. The database used in this paper limits the available ownership structure data as previous studies. For example, Chen et al. (2012) focus on only 7 tourist hotel to study the impact of insider managerial ownership on corporate performance and Perrigot et al. (2009) focus on 15 hotels (6 of them are presented a plural form and 5 of them are predominantly company-owned units) to analyze their efficiency. The exemption is provided by Xiao et al. (2012) that use 2012 hotels across the USA for the period 2003–2005.

In our study, we differentiate between pure forms such as family ownership (*FAM*) and other forms such as institutional ownership and mixed forms that combine alternative structures (family and financial, family and industrial, etc.). Additionally, we consider a variable measuring ownership concentration. In general, family firms are more concentrated than non-family firms. The variable *CONC* represents shareholder ownership of more than 25% equity directly (first level) or indirectly (see, e.g., Salvato and Moores, 2010).

The variables related to the audit function are measured following the accounting literature (DeAngelo, 1981; Burgstahler et al., 2006; Van Tendeloo and Vanstralaen, 2008; Katz, 2009; Givoly et al., 2010; Cascino et al., 2010; Kosi and Valentincic, 2013). That is, we define *AUD* variable as a dummy variable that takes the value 1 for audited firms and 0 for non audited firm. The variable *BIG 4* takes the value 1 for firms audited by Big 4 companies and 0 for firms non audited by Big 4 companies.

We based on previous earnings quality works to define and measure the control variables (see, e.g. Francis et al., 2004; Burgstahler et al., 2006; Cascino et al., 2010; Gaio, 2010). The variable size (*SIZE*) is measured by the logarithm of total assets (see, e.g. Francis et al., 2004; Cascino et al., 2010; Gaio, 2010). The variable Leverage (*LEV*) is measured by the ratio of total liability to total assets (see, e.g. Francis et al., 2004; Cascino et al., 2010; Gaio, 2010). The definition of loss (*LOSS*) is included as the number of years of losses relative to the total number of years of operation (Francis et al., 2004; Gaio, 2010). Finally, the standard deviation of the sales revenues $d(SALES)$ and the standard deviation of the cash flow $d(CFO)$ are included in the models (see e.g. Francis et al., 2004; Gaio, 2010). Most of these variables have been used to examine the factors that enhance the hotel performance. For example, Kim et al. (2012) show that firm size, debt leverage and growth are significant factors that affect the systematic risk of a hotel firm.

Table 1 Panel B, summarizes the definition and the construction of each variable employed in the second stage.

3.4. Methodology

We compute earnings quality measures over firm-specific five-year windows, from $t-4$ to t, following Francis et al. (2003). Therefore, we obtain earnings quality measures for the period

Table 1
Variables definitions.

Panel A: Earnings quality measures		
Earnings attributes	Definition	Calculation
Earnings persistence	Stability of earnings (degree to which unexpected earnings from one period persist in future earnings)	First order autoregressive model (AR(1)) for annual earnings. $X_{j,t} = \phi_{0,j} + \phi_{1,j}X_{j,t-1} + \upsilon_{j,t}$
Earnings predictability	Ability of earnings to be predicted	Square root of the error variance of AR(1) $\sqrt{\sigma^2(\hat{\upsilon}_{j,t})}$
Earnings variability	Real volatility of earnings	Standard deviation of earnings $\sigma(X_{j,t})$
Earnings smoothing	Intentional reduction in earnings variability	Standard deviation of earnings divided by the standard deviation of cash flows $ESM = \frac{\sigma(X_{j,t})}{\sigma(CFO_{j,t})}$
Panel B: Explanatory factors		
Market variables		
CRISIS	Financial crisis. Dummy variable taking the value of 1 for (2008–2010) period, or 0 otherwise	
Business strategy		
CODE	Dummy variable taking the value 1 for firms declaring accommodation as the primary activity, or 0 otherwise	
LOC	Dummy variable taking the value 1 for firms located in coast areas, or 0 otherwise	
INT	Dummy variable taking the value 1 for internationalized firms, or 0 otherwise	
LEGAL	Dummy variable taking the value 1 if legal of the firm is PLC, or 0 otherwise	
Owner structure		
FAM	Dummy variable taking the value 1 for family firms, or 0 otherwise	
CONC	Dummy variable taking the value 1 for firms that shareholders have more than 25% equity	
Audit characteristic		
AUD	Dummy variable taking the value 1 for audited firms, or 0 otherwise	
BIG4	Dummy variable taking the value 1 for firms audited by Big 4, or 0 otherwise	
Control factors		
SIZE	Log of total assets	
LEV	Financial leverage, measured as total liabilities divided by total equity	
LOSS	Number of years with negative net income before extraordinary items divided by the total number of years for each firm	
d(SALES)	Sales volatility. Sales volatility measure as the standard deviation of sales revenues scaled by total assets	
d(CFO)	Cash flow volatility. Standard deviation of CFO scaled by total assets	

2004–2011 for each company. To calculate the aggregate earnings quality measure, we rank firms on a scale from 0 to 100 according to each of the earnings attributes, and we compute the EQ variable by averaging its individual earnings quality measures.

To explore the earnings quality determinants, we begin with a univariate analysis. First, we calculate the Pearson and Spearman correlations to observe the relationships between the earnings quality measure and the explanatory variables. Second, the *t*-mean test and the non-parametric *U*-Mann Whitney test detects statistically significant differences in the mean and median of the earnings quality measure driven by the independent variables. They test the null hypothesis that two populations share the same distribution, that is, whether there are differences in one variable (earnings quality) between two groups that are independent (split on the basis of the explanatory variables in this study).

In addition to the univariate analysis, we estimate a panel data regression using OLS. All regressions include year dummy variables and standard errors are clustered by firm to correct for serial correlation. To maximize observation number through the regression analysis, we include the variables block by block. For example, the data for auditor size (BIG 4) are not available for the entire sample because most firms are not audited firms, and also the ownership structure variable reduces the sample size. The next section presents our main results.

4. Results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for the main variables. Panel A reports the attributes included in the dependent variable, the index of earnings quality. Persistence has a mean (median) value of 0.08 (0.04), Predictability has a mean (median) value of 0.03 (0.024), Smoothness has a mean (median) value of 0.59 (0.59), and Variability report a mean (median) value of 0.05 (0.03). Panel B lists the dependent variable (EQ) and the control variables. The descriptive statistics for the main explanatory variables relating to earnings quality index (EQ), are displayed in Table 4.

4.2. Univariate analysis

Table 3 reports the Pearson and Spearman correlation matrices for the earnings quality index, the explanatory and the control variables. The earnings quality index is positively associated with firms declaring accommodation as the primary activity (*CODE*), firms located in coastal areas (*LOC*), internationalized firms (*INT*), firms established as PLCs (*LEGAL*), audited firms (*AUD*) and those audited by Big 4 auditors (*BIG 4*). All these coefficients are statistically significant ($p < 0.01$).

Table 2
Descriptive statistics.

Panel A: Attributes of earnings quality					
	Persistence	Predictability	Smoothing	Variability	EQ
n	14,440	14,440	14,440	14,440	14,440
Mean	0.081	0.039	0.592	0.052	0.498
Median	0.045	0.024	0.592	0.035	0.508
Std Dev	0.552	0.045	0.419	0.051	0.205
Q10%	−0.628	0.007	0.129	0.011	0.305
Q90%	0.874	0.088	1.000	0.119	0.678

Panel B: Control factors					
	LOSS	SIZE	LEV	d(SALES)	d(CFO)
n	14,440	14,440	14,440	14,440	14,440
Mean	0.331	3.305	2.039	0.223	0.117
Median	0.250	3.274	0.819	0.112	0.079
Std Dev	0.288	0.676	3.586	0.281	0.111

EQ considers persistence, predictability, variability and smoothing.
Please see Table 1 for variables definitions.

Table 3
Pearson (below diagonal) and Spearman (above diagonal) correlation coefficients between dependent variable (earnings quality), explanatory and control variables.

	EQ	CRISIS	CODE	LOC	INT	LEGAL	AUD	BIG4	FAM	CONC	SIZE	LEV	LOSS	d(SALES)	d(CFO)
EQ	–	−.002	.118***	.027***	.038***	.074***	.033***	.072***	−.015***	−.048***	.267***	−.002	−.166***	−.433***	−.669***
CRISIS	−.003	–	−.012	.000	.000	.000	.000	.003	.000	.000	.025***	−.038***	.000	−.161***	.042***
CODE	.124***	−.012	–	.091***	−.021**	.126***	.116***	.030	−.099***	−.015	.208***	−.067***	.035***	−.149***	−.125***
LOC	.029***	.000	.091***	–	−.007	.091***	.144***	.127***	−.094***	.014	.205***	−.022***	−.050***	−.121***	−.023***
INT	.035***	.000	−.021**	−.007	–	.047***	.106***	.140***	−.098***	.046***	.103***	.033***	−.033***	−.016*	−.011
LEGAL	.076***	.000	.126***	.091***	.047***	–	.262***	.006	−.231***	−.067***	.356***	−.107***	−.059***	−.122***	−.074***
AUD	.036***	.000	.116***	.144***	.106***	.262***	–	.	.421***	−.002	.532***	.005	.022***	−.124***	.023***
BIG4	.080***	.003	.030	.127***	.140***	.006	0.45***	–	−.244***	.065***	.233***	.046 **	.204***	.064***	.179***
FAM	−.015***	.000	−.099***	−.094***	−.098***	−.231***	−.421***	−.244***	–	.038***	−.396***	−.011	−.126***	.148***	−.038***
CONC	−.049***	.000***	−.015***	.014**	.046**	−.067 **	−.002*	.065***	.038***	–	−.014*	.037***	.047***	.034***	.059***
SIZE	.277***	.025***	.198***	.198***	.112***	.329***	.565***	.245***	−.399***	−.015	–	.054***	−.016*	−.450***	−.252***
LEV	−.013	−.029***	−.046***	−.011	.011	−.108***	.001	.059***	.007	.024**	.046***	–	.061***	.049***	.043***
LOSS	−.142***	.000	.041***	−.033***	−.028***	−.040***	.039***	.221***	−.139***	.047***	−.063***	.066***	–	.000	.103***
d(SALES)	−.399***	−.143***	−.183***	−.123***	−.014 *	−.159***	−.110**	.133***	.123***	.022 *	−.456***	.079***	.007	–	.517***
d(CFO)	−.585***	.039***	−.145***	−.034***	−.008	−.089***	.012	.203***	−.024 **	.052***	−.230***	.086***	.109***	.508***	–

EQ considers persistence, predictability, variability and smoothing.
*, **, and *** denotes level of significance at the 0.10, 0.05 and 0.01 levels, respectively.
Please see Table 1 for variables definitions.

In contrast, the earnings quality index is negatively associated with family ownership (*FAM*) and ownership concentration (*CONC*); the coefficient statistically significant ($p < 0.01$). In addition, the coefficient related to *CRISIS* are negatively associated with earnings quality but is not statistically significant.

The control variables exhibit mostly significant relationships with earnings quality and are consistent with the results of previous research. Larger firms (*SIZE*) have higher earnings quality and firms with higher sales volatility (*d*(*SALES*)), greater operating cash flow volatility (*d*(*CFO*)), and a higher incidence of losses (*LOSS*) have lower earnings quality rankings (Francis et al., 2004; Gaio, 2010). Table 3 also reveals that the independent variables are not highly correlated.

Interestingly, the results allow us to characterize family firms. The coefficient on *FAM* is negatively associated with firm size (*SIZE*) indicating that, in general, family firms are smaller. Moreover, the coefficient on *FAM* is also negatively associated with internationalization (*INT*), with establishment as a PLC (*LEGAL*), which characterizes larger companies, with audits (*AUD*) and Big4 auditors (BIG 4). In contrast, the coefficient on FAM is positively associated with *CONC* indicating that family firms are characterized by greater concentration.

Table 4 displays the differences in earnings quality between groups of firms divided by the explanatory variables in Table 1. The *t*-mean and *U*-Mann Whitney tests are particularly useful when assessing differences between two independent groups.

Table 4 reveals differences in earnings quality index according to the firm's business strategy. Specifically, we observe differences between firms declaring accommodation as the primary activity (mean = 0.508) and firms declaring accommodation as the secondary activity (mean = 0.467), firms located in coastal areas (mean = 0.501) and firms located in urban areas (mean = 0.492), international hotels (mean = 0.539) and domestic (mean = 0.498), and PLC firms (mean = 0.513) and non PLC firms (mean = 0.49). These differences are statistically significant ($p < 0.01$) according to the *t*-mean. The non-parametric test, *U*-Mann Whitney, also reports differences between these variables.

The evidence for ownership structure requires attention. Family firms (mean = 0.50) exhibit slight lower earnings quality than other types of ownership (mean = 0.504). The percentage of equity held by shareholders (*CONC*) also produces statistically significant differences in the earnings quality index.

Interestingly, firms that are audited (*AUD*) and firms audited by the Big 4 (*BIG 4*) exhibit higher EQ index values than firms that are not audited or are audited by smaller accounting firms. The differences are statistically significant ($p < 0.05$). This evidence supports previous studies documenting that auditor size is directly linked to audit quality and, therefore, to earnings quality (DeAngelo, 1981; Francis and Wang, 2008).

4.3. Multivariate analysis

Table 5 presents the results of our multivariate analysis. The dependent variable in all models is the earnings quality index (EQ). The explanatory variables are introduced by blocks to maximize the sample size (the introduction of the enforcement variables and ownership structure significantly reduces the sample size).

Model 1 (the basic model) includes indicators of market conditions, business strategy, and control variables. Models 2 and 3 add the variables of ownership structure and the percentage of equity held by stakeholders to the basic model, respectively. Model 4 completes the basic model with audit characteristics, and Model 5 presents the full model.

The coefficient for *CRISIS* is negative and statistically significant ($p < 0.01$). In an additional analysis, we date the financial crisis to 2009 instead of 2008 because the real effects of the financial crisis

Table 4
t-Test and *U*-Mann Whitney test for earnings quality differences (EQ).

Variable	Type	*N*	%	Mean	Median	Std dev	Type	*N*	%	Mean	Median	Std dev	*p*-value	
													t-mean	*U*-Mann Whitney
Market variables														
CRISIS	2008–2010	7220	0.500	0.498	0.503	0.141	2004–2007	7220	0.500	0.499	0.504	0.139	0.75	0.87
Business strategy														
CODE	primary	11,016	0.763	0.508	0.513	0.137	Second.	3424	0.237	0.467	0.470	0.146	0.00	0.00
LOC	Coast	10,352	0.717	0.501	0.506	0.139	Urban	4088	0.283	0.492	0.497	0.143	0.00	0.00
INT	Yes	208	0.014	0.539	0.558	0.154	No	14,232	0.986	0.498	0.503	0.140	0.00	0.00
LEGAL	PLC	5153	0.357	0.513	0.520	0.135	No	9287	0.643	0.490	0.495	0.142	0.00	0.00
Owner structure														
FAM	Yes	5184	0.548	0.500	0.504	0.140	No	4272	0.452	0.504	0.510	0.139	0.15	0.15
CONC	+25%	6832	0.914	0.498	0.504	0.204	−25%	640	0.086	0.522	0.532	0.193	0.00	0.00
Audit characteristic														
AUD	Yes	2464	0.171	0.509	0.513	0.135	No	11,976	*0.829*	*0.496*	*0.502*	*0.141*	*0.00*	*0.00*
BIG 4	Yes	721	0.293	0.516	0.518	0.141	No	1743	*0.707*	*0.493*	*0.493*	*0.132*	*0.00*	*0.00*

EQ considers persistence, predictability, variability and smoothing.
Please see Table 1 for variables definitions.

Table 5
Results of the panel regressions models.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	coef.	*p*-value	coef.	*p*-value	coef.	*p*-value	coef.	*p*-value	coef.	*p*-value
C	0.552	0.000	0.539	0.010	0.555	0.000	0.539	0.000	0.543	0.000
CRISIS	−0.024	0.000	−0.026	0.000	−0.027	0.000	−0.024	0.000	−0.030	0.002
CODE	0.006	0.007	0.008	0.010	0.005	0.121	0.006	0.005	0.003	0.679
LOC	0.008	0.000	−0.002	0.499	0.002	0.461	0.008	0.000	0.004	0.569
INT	0.019	0.015	0.017	0.037	0.007	0.040	0.020	0.012	0.015	0.020
LEGAL	0.008	0.000	0.090	0.000	0.009	0.000	0.007	0.001	0.009	0.091
FAM			−0.090	0.019					−0.019	0.002
CONC					−0.007	0.090			−0.007	0.080
AUD							0.020	0.020		
BIG4							0.030	0.020	0.040	0.050
SIZE	0.022	0.000	0.023	0.000	0.021	0.000	0.026	0.000	0.019	0.000
LEV	0.000	0.163	0.001	0.122	0.001	0.008	0.000	0.213	0.001	0.141
LOSS	−0.043	0.000	−0.028	0.000	−0.022	0.000	−0.043	0.000	−0.011	0.090
d(SALES)	−0.062	0.000	−0.072	0.000	−0.075	0.000	−0.059	0.000	−0.134	0.000
d(CFO)	−0.620	0.000	−0.619	0.000	−0.619	0.000	−0.616	0.000	−0.557	0.000
Year dummy		Included		Included		Included		Included		Included
Obs.		14,440		9456		7472		2464		2224
Prob > *F*		0.000		0.000		0.000		0.000		0.000
R-squared		0.379		0.379		0.376		0.259		0.323

The dependent variable is earnings quality index (EQ) that considers persistence, predictability, variability and smoothing.
Reported significance levels (*, **, and *** for 0.10, 0.05 and 0.01 levels, respectively).
Please see Table 1 for variable definitions.

on the hotel industry could begin in either 2008 or 2009. Overall, the results from these various sensitivity tests indicate no major threats to the main findings.

The coefficients of the business strategy variables are statistically significant across the models ($p < 0.01$) and the association is in the same direction as the univariate analysis. Our results support hypothesis H2 in the sense that the business strategy affects earnings quality.

The coefficients for *FAM* and *CONC* are negative and statistically significant ($p < 0.05$). Our results provide some support for hypothesis H3 in the sense that the ownership structure affects earnings quality. The coefficients for *AUD* and *BIG4* are positive and statistically significant ($p < 0.05$). Our results support hypothesis H4. That is, audit function affects earnings quality.

Finally, the coefficients for the control variables are statistically significant ($p < 0.01$). There is a positively relationship between *SIZE* and earnings quality. In contrast, there are negatively relationships between *LOSS*, *d*(*SALES*) and *d*(*CFO*). The coefficient of *LEV* is positively associated with earnings quality, but it is not statistically significant across models.

It is noted that the earnings quality index is measured with four attributes: persistence, predictability, variability and earnings smoothing. As there is considerable debate among researchers about the best measure of earnings quality, in an additional analysis we redefining earnings quality index (EQ) to exclude earnings smoothing. The results (not reported) are consistent with Tables 4 and 5.

5. Conclusions

Earnings quality is a fundamental concept for the decision-making of stakeholders. In addition, it is important for standard setters to provide useful information from firms to investors. For example, the joint IASB/FASB project on the conceptual framework (2006) states that the objective of financial reporting is to provide useful information to users making resource allocation decisions. For this reason, earnings quality has received much attention in the literature.

In the hospitality field, the literature has point out the importance of earnings figure to arrange contracts between related parties (Kim and Gu, 2005; Chen, 2010; Turner and Guilding, 2011; Guillet et al., 2012; Chen et al., 2012; Xiao et al., 2012). Turner and Guilding (2011) explain that the most common way for determining a hotel operator's remuneration is based on a hotel's reported

sales and profit. In this context, empirical studies have found that the hotel firms might have incentives for income-increasing earnings management or for income-decreasing earnings management under certain circumstances (Turner and Guilding, 2011; Parte Esteban and Such Devesa, 2011a,b).

Building on this previous studies, our study offers a new perspective in the earnings quality field using a sample of Spanish hotel industry. First, we develop a multidimensional concept of earnings quality through four earnings attributes: persistence, predictability, smoothing and variability. Second, we extend the analysis on the role of firms specific factors influence on earnings quality. This allow as provide a more complete picture of the determinants of earnings quality in the hotel industry.

Our results suggest that ownership structure, audit function, some variables related to business strategy, influence earnings quality in hotels firms. That is, our results confirm previous results and indicate that audited firms and the presence of Big 4 auditor increase the earnings quality (see, e.g. DeAngelo, 1981; Cascino et al., 2010). The role of specific factors such as the internationalization, firm's declaring accommodation as their primary activity are associated positively with the earning quality. We also find that larger firms have higher earnings quality rankings, while firms with higher sales volatility, greater operating cash flow volatility, and a higher incidence of losses have lower earnings quality rankings(see Francis et al., 2004; Gaio, 2010). Finally, our results also suggest that the ownership structure and the financial crisis affect earnings quality.

These results provide new evidence within the Spanish hotel industry. Overall, our findings suggest the importance of considering firms specific factors to evaluate the financial reporting quality of a firm. Our results are also useful to users of financial statements who may evaluate earnings quality practices. If earnings quality is a key variable used by for decision-making of stakeholders, it would be interesting to study their determinants. Our conclusions may lead regulators and academics to evaluate the quality of earnings in different industries. Finally, these findings also can assist hotel managers in their decision-making.

The main limitation of the study is data availability for certain independent variables such as ownership structure and Big 4 auditors. The introduction of these variables into the empirical model reduced the number of observations because many hotel do not disclose their ownership structure and many hotels are not required to be audit. Then, the resulting evidence should be considered preliminary. Future research could examine the effects of voluntary and mandatory audit in private firms. Also, the importance of corporate performance and better classification of ownership can help to understand the earnings quality in the hotel industry and enhance the decision making of stakeholders.

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