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INTRODUCTION

The hospitality industry is characterized by high levels of competition, risk, capital intensity, and sensitivity to changes in the economy and consumer spending (Singal, 2015). Due to their geographical dispersion and their significant investments in tangible assets (land, building, and equipment), hospitality firms usually demand more financial debt than firms from other industries (Li & Singal, 2019; Serrasqueiro & Nunes, 2014; Tang & Jang, 2007). Singal (2015) finds that the hospitality and tourism industry shows significant higher leverage ratios than other industries in a study of the S&P 1500 index over 21 years. In addition, recent financial data confirm this distinctive feature of the industry. For instance, Restaurant & Dining as well as Hotel & Gaming rank among the top most leveraged sectors in the U.S.[1] As a consequence, academic research has extensively been investigating the motivations of the hospitality industry to demand more financial debt (Karadeniz, Kandir, Balcilar, & Onal, 2009; Pacheco & Tavares, 2017; Seo, Kim, & Sharma, 2017; Tang & Jang, 2007; Upneja & Dalbor 2001a; Upneja & Dalbor 2001b; Upneja & Dalbor 2001c).

In contrast, the consequences of financial leverage in the hospitality sector have received little academic attention. Various studies have investigated the association between debt and financial performance using data from Indian hotel chains (Madan, 2007), U.K. hotels (Phillips & Sipahioglu, 2004), U.S. restaurants (Jang & Tang, 2009; Tsai & Gu, 2007a; Yoon & Jang, 2005), and U.S. casinos (Seo, 2016; Tsai & Gu, 2007b). Dewally, Flaherty, and Shao (2017) document the detrimental effect of heavy debt financing by showing that more leveraged hospitality firms are less likely to make large investments while Gim, Choi, and Jang (2019) show the deterrence effect of financial leverage on earnings management using a sample of U.S. restaurants. Thus, the empirical literature on the consequences of leverage in the hospitality industry remains relatively scant and mainly focused on economic or financial consequences. To the best of our knowledge, there are not yet empirical studies exploring

other potential side effects at the international level. In this study, we analyze the impact of financial leverage on earnings quality across various countries in the hospitality industry.

It is well documented that insiders (e.g. CEOs or CFOs) use their discretion to manage accounting information and, therefore, earnings do not reflect a company's true economic reality. Healy and Wahlen (1999, p. 368) define earnings management as occurring when "*managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers*". As earnings are used by capital providers for investment decisions or performance evaluation, it is particularly important that earnings reflect the true corporate performance and are not managed (Dechow, Ge, & Schrand, 2010; Healy & Wahlen, 1999). Despite the importance of earnings management in mainstream finance and accounting literature, it received scant attention in the hospitality industry, although extreme examples of earnings management involving hospitality managers captured a great deal of attention during past decades. In 1998, it was discovered that Cendant Corporation, a marketer and hotel franchiser, inflated revenues by more than half a billion USD using accounting techniques, which led to a $19 billion loss in market value when the information was released. Before it filed for bankruptcy in 1999, Boston Chicken, a restaurant franchise, restated $300 million in revenues from loans made to franchisees and start-up costs. In addition, the company kept losses off the books by parking transactions at affiliates (Markham, 2015). A last example is Krispy Kreme, the doughnut maker, who had to restate its earnings downwards in 2004 because it was found guilty of channel stuffing (the company was sending twice their usual shipments to franchisees at the end of each quarter in order to boost revenues).

The relationship between debt and earnings management is not obvious. On the one hand, leverage acts as a firm-level disciplinary mechanism on managers as debtholders

usually enhance their monitoring activities (Jensen, 1986). Indeed, creditors need to make sure debt covenants are respected and, thus, closely monitor the quality of accounting information disclosed by managers. On the other hand, managers may be tempted to manage earnings to limit the pressure coming from debtholders. Watts and Zimmerman (1986) argue that managers are more likely to use accounting methods that increase earnings when the debt/equity ratio is high. Such an association exists because disclosing higher earnings allows a better negotiation of the quantity of debt and a decrease of the cost of debt. Furthermore, increased earnings may help avoiding breaching debt covenants. DeAngelo, DeAngelo, and Skinner (1994) find that companies close to violating their covenants adjust their earnings downwards. Given the two potential opposite directional effects of financial leverage on earnings quality, there is a need to determine which one dominates.

When considering the relationship between debt and earnings management, country-level disciplinary mechanisms, such as the strength of investor legal protection (Ball, Kothari, & Robin, 2000; Leuz, Nanda, & Wysocki, 2003), should not to be ignored. In countries with strong investor protection, litigation risk is higher (Choi & Wong, 2007; Choi, Kim, Liu, & Simunic, 2008; Francis & Wang, 2008), which may prevent managers from misreporting earnings. Conversely, when investor protection is weak, managers have more incentives to distort financial information to acquire private benefits (Leuz, Nanda, & Wysocki, 2003). As a result, it is worthwhile to investigate the association between financial leverage and earnings quality in different institutional contexts.

Our empirical analysis is based on a sample of 7,194 firm-year observations, covering 15 years (2002-2016) for 642 unique firms in the hospitality industry from 26 countries. We find two key results. First, when firms have more financial leverage, lower earnings management is detected (i.e. higher earnings' quality). This result therefore supports the idea of effective monitoring carried out by debtholders. Second, the positive association between

financial leverage and earnings quality holds only in countries with a strong investor protection. This result suggests that financial leverage has a positive consequence when institutions in place protect shareholders from managers' misbehavior (i.e. earnings management in our case). To ensure the robustness of our results, we use three proxies for earnings quality (Dechow, Sloan, & Sweeney, 1995; Jones, 1991; Kothari, Leone, & Wasley, 2005). In addition, we control that our results are neither driven by the presence of some specific countries, nor by the debt maturity structure. Finally, we rule out the presence of endogeneity arising from the fact that financial leverage does not vary randomly.

Our paper contributes to the literature in three respects. First, by analyzing the impact of financial leverage on financial information quality, we fill a gap identified by scholars regarding research in hospitality management. As far as debt use is concerned, Tsai, Pan, and Lee (2011, p. 952) note that "[…] *there are few empirical studies of this topic in hospitality firms. This could be an interesting topic to explore, contributing to both the hospitality financial management field and mainstream finance literature*". In this vein, we no longer consider leverage as a financial decision or a capital structure parameter to explain but rather envisage leverage as an explanatory independent variable. We are thus able to adopt a downstream perspective, which pushes forward previous upstream literature (Dalbor, Lee, & Upneja 2007; Karadeniz, Kandir, Balcilar, & Onal 2009; Pacheco and Tavares 2017; Seo, Kim, & Sharma 2017; Tang & Jang 2007; Upneja & Dalbor 2001a; Upneja & Dalbor 2001b; Upneja & Dalbor 2001c; Upneja & Dalbor 2009).

Second, our study renews interest in the field of hospitality research for a somehow neglected topic - earnings management. Sousa Paiva, Reis, and Costa Lourenço (2016, p. 88) conduct an extensive review of the hospitality management and accounting literature and conclude that "*there is still a lack of empirical research on financial accounting and (that) scholars should strive to further the currently limited knowledge in the area*". More

specifically, they suggest to pay special attention to the analysis of earnings management. This emphasis on earnings management is particularly important with regards to the contractual role of accounting information for hospitality firms' capital providers (Jeon, Kim, & Lee, 2006).

Third, by adopting a broader perspective compared to previous literature and placing our study in a global context, we contribute to the literature aiming at understanding the determinants of earnings quality in the hospitality industry (Gim, Choi, & Jang, 2019; Parte Esteban & Jesus Such Devesa, 2011; Parte Esteban & Ferrer García, 2014; Seetah, 2017). As the hospitality and tourism industry is highly internationalized (D'Amore, 1998; Minghetti & Buhalis, 2010; Song, Li, & Cao, 2018), we take this dimension into account by comparing firms from 26 countries, and by highlighting distinct associations between leverage and earnings management in different institutional contexts.

The rest of the paper is structured as follows. In the second section, we review the relevant literature and introduce our research questions. In the third section, we describe our research design. Results are presented and discussed in the fourth section. Finally, we conclude in the last section.

LITERATURE REVIEW AND RESEARCH QUESTIONS

Financial Leverage and Earnings Quality

Since Modigliani and Miller (1958) and Jensen and Meckling (1976), research in finance has analyzed the consequences of financial debt on the value (or performance) of firms. With the development of the positive accounting theory by Watts and Zimmerman (1986), researchers have started investigating the impact of financial leverage on earnings quality. The underlying hypothesis is that managers try to maximize their own interests (i.e. moral hazard) in a context of asymmetric information, which notably leads them to manage

earnings. Healy and Wahlen (1999), among others, suggest that managers have various motivations to disclose earnings that do not really reflect the true economic performance of the firm. First, earnings management may influence the compensation of top executives through bonuses related to accounting performance. Second, it may also impact contractual relations with various stakeholders, especially with debtholders. Third, the disclosure of managed earnings may affect the valuation of public firms through the revisions of price targets and recommendations provided by financial analysts (e.g. Krispy Kreme had to restate its earnings downwards in 2004 because it was discovered that the company boosted sales artificially at the end of each quarter in order to meet earnings forecasts). Finally, it may also affect the perceptions of regulators and, therefore, the content of some industry regulations (e.g. anti-trust regulation).

Regarding the impact of financial leverage on earnings quality, two opposite arguments are put forward. On the one hand, debt can act as a disciplinary mechanism on managers as a result of the increased in-depth monitoring undertaken by debtholders (Jensen, 1986). The latter need to make sure that debt covenants are respected, which leads them to closely monitor firm performance using accounting information. Knowing that they are under high scrutiny, managers are under pressure to provide earnings that reflect the true economic reality of the firm.

On the other hand, a positive relationship between leverage and earnings management can be expected for two reasons. First, disclosing higher earnings allows a better negotiation of the quantity of debt, as well as the cost of debt. Second, it also helps respecting the debt contract and, more specifically, the constraints resulting from debt covenants (Mohrman, 1996). In the U.S., Sweeney (1994) examines 130 cases of accounting-based covenant violations in annual reports. She finds that earnings tend to be managed to the upside when firms approach default. DeFond and Jiambalvo (1994) examine a sample of 94 firms that

reported debt covenant violations in annual reports. They show that earnings are managed upward in the year prior to violation and in the year of violation. DeAngelo, DeAngelo, and Skinner (1994) examine 76 distressed companies. Among the troubled firms that are close to a debt covenant violation, they expect to find income-increasing actions as managers have incentives to avoid or defer the costs of a breach. However, managers of troubled companies appear to deliberately reduce reported earnings. The authors assume managers use it as a way to show creditors their ability and willingness to seriously streamline operations. Ghosh and Moon (2010) document a curvilinear relation between debt and earnings quality. The relationship is positive at low levels of debt and negative at high debt levels with an inflection point around 41%. Finally, Franz, HassabElnaby, and Lobo (2014) find that firms close to violation or in technical default of their debt covenants engage in higher levels of earnings management than far-from-violation firms. Overall, the direction and the significance of the association between leverage and earnings quality remains an open question.

The global hospitality industry provides a relevant and untapped setting to examine the association between debt and earnings quality. First, due to their significant investments in tangible assets (property, plant, and equipment), hospitality firms demand larger amounts of financial debt than other industries (Singal, 2015; Li & Singal, 2019), which has several advantages. Compared to equity, debt notably allows tax reduction and avoids ownership structure dilution, knowing that debtholders prefer financing tangible assets in comparison to intangible assets that cannot serve as collaterals. Based on the results of a study covering 20 years and more than 3,000 firms across industries, Singal (2015, p. 116) demonstrates that the hospitality and tourism industry has structural differences compared to other industries such as higher capital intensity and higher leverage, and that these differences provide "[…] *support for future research efforts that may import results from the broader economy to the special case of Hospitality and Tourism firms*". The question of the validity and the direct

import of research results from mainstream literature arises because substantially higher levels of leverage can potentially alter the incentives outlined in the above paragraphs, for example by exacerbating and amplifying them, or conversely, by mitigating or even cancelling them through buffering mechanisms.

Second, the literature on earnings management is relatively scarce in the hospitality industry. Parte Esteban and Jesus Such Devesa (2011) focus on reported earnings and demonstrate the importance of reaching certain earnings benchmarks in the Spanish hotel industry. In a related paper, Parte Esteban and Ferrer García (2014) examine the effect of firm characteristics on earnings quality using a sample of Spanish hotel firms. They find that some key factors (i.e. including internationalization, location, ownership structure, and audit function) influence earnings quality in hotel firms. Seetah (2017) examines the evolution of accounting quality in the Mauritian hospitality industry. The results show that hospitality firms in Mauritius might have used income-decreasing accruals during the financial crisis period and engaged in "big bath" practices. Finally, Gim, Choi, and Jang (2019) investigate whether franchise firms manage earnings more than non-franchise ones using a sample of U.S. restaurant firms. They show that franchise firms manage more earnings during growth phases, and that leverage is weaker in explaining earnings management for franchise restaurants. Recent empirical results on earnings management practices in the hospitality sector are thus lacking. This is all the more detrimental as this sector is characterized by high levels of leverage, which can modify relationships between leverage and earnings management behavior previously observed in studies covering various industries.

Given the potential double-edged sword effect of financial debt on earnings management, the high levels of leverage characterizing the hospitality industry (Li & Singal, 2019; Serrasqueiro & Nunes, 2014; Tang & Jang, 2007), and the scant research on earnings management practices in the hospitality industry, we formulate a first research question:

Research question 1: How does financial leverage act on earnings quality in the hospitality industry?

Impact of Institutions on Earnings Quality

The hospitality and the tourism industries are highly internationalized (D'Amore, 1998; Minghetti & Buhalis, 2010; Song, Li, & Cao, 2018). Companies from this sector are continuously looking for new markets to increase their market share, and compete with firms from all over the world. One key factor characterizing a country' corporate governance environment is the legal protection of investors (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). Investors can be protected from expropriation through the legal system, which includes both legal rules and the quality of their enforcement (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000).

Several studies show that national institutions matter in terms of earnings quality. In particular, Ball, Kothari, and Robin (2000) show that earnings are less timely in incorporating losses in code-law countries compared to common-law countries. Leuz, Nanda, and Wysocki (2003) find that earnings management decreases with the level of investor protection because strong protection limits insiders' ability to acquire private control benefits, which reduces incentives to mask firm performance. These empirical studies support the idea that accounting outcomes are closely related to the institutional context (i.e. macro-mechanism of management monitoring).

Drawing from past literature, we use one of the World Bank Group's governance indicators[2], namely regulatory quality, which varies across countries and years, to classify countries depending on their investor protection strength. This score is defined as reflecting "*perceptions of the ability of the government to formulate and implement sound policies and*

regulations that permit and promote private sector development" (Kaufmann, Kraay, & Mastruzzi, 2009, p. 6).

Given the sharp intrinsic institutional differences across countries, the role of financial leverage on earnings quality may actually depend on investor protection strength. This leads us to formulate a second research question:

Research question 2: How does investor protection strength influence the relationship between financial leverage and earnings management in the hospitality industry?

RESEARCH DESIGN

Sample Selection

Our empirical study is based on a worldwide sample that includes publicly traded firms available on Datastream from 2002 to 2016, from the "Travel & Leisure" Industry Classification Benchmark (ICB). We started with all firms available in the database but we dropped firms from sub-industry group "Airlines", as we focus on firms in the hospitality industry, as well as firms with missing data. Our final sample includes 7,194 firm-year observations for a total of 642 unique firms in 26 countries[1].

Table 1 shows the distribution of observations by sub-industry and by country. The most represented sub-industries are Restaurants and Bars (27%), followed by Hotels (24%), Travel and Tourism (21%), Recreational Services (16%), and Gambling (11%). The two most represented countries are Japan (28%) and the U.S. (17%).

[Insert Table 1 about here]

Model and Main Variables

[1] Although data are provided on Datastream in local currencies by default, they can also be converted into a standard currency. For our study, all variables were directly retrieved in USD.

To test the impact of financial leverage on earnings quality, we estimate the following model:

$$EARNINGS\_M_{i,t} = \beta_0 + \beta_1 * LEVERAGE_{i,t} + CONTROLS_{i,t} + \varepsilon_{i,t} \qquad (1)$$

In model (1), the dependent variable $EARNINGS\_M_{i,t}$ measures earnings management in year t for firm i. $EARNINGS\_M_{i,t}$ is the absolute value of abnormal accruals following either Jones (1991) ($EARNINGS\_M1_{i,t}$), Dechow, Sloan, and Sweeney (1995) ($EARNINGS\_M2_{i,t}$), or Kothari, Leone, and Wasley (2005) ($EARNINGS\_M3_{i,t}$). Higher values of *EARNINGS_M* indicate higher earnings management (i.e. lower earnings quality). More details about the computation of the three measures of earnings management are provided in Appendix A.

The independent variable of interest is *LEVERAGE*, which we calculate as the ratio of total financial debt to total assets. To answer our first research question, the coefficient of interest is β_1. If β_1 is positive, then higher debt levels are associated with higher earnings management, which is detrimental to earnings quality. Such result would suggest that debtholders' pressure encourages managers to reduce earnings quality to avoid breach of covenants or to decrease the cost of debt. However, if the β_1 coefficient is negative, it will support an effective monitoring role by debtholders leading to the disclosure of accounting information of better quality.

To answer our second research question, we use the same model but we rely on two specifications. First, we estimate equation (1) on two distinct sub-samples: firms in countries with a strong World Bank index and firms in countries with a weak World Bank index. Firms in countries with a score above the sample median are considered as having a strong World Bank index while the others have a weak World Bank index. Given that managers may have different incentives to distort financial information depending on the strength of investor

protection (Leuz, Nanda, & Wysocki, 2003), we focus on the β_1 coefficient in each sub-group. Second, we also estimate equation (2) where we include an interaction term between *LEVERAGE* and *PROTECTION_STRONG*. *PROTECTION_STRONG* is a binary variable taking the value of one if the country has a score above the sample median of the World Bank regulatory quality score, and zero otherwise. Our focus is on β_3 to answer our second research question.

$$EARNINGS\_M_{i,t} = \beta_0 + \beta_1 * LEVERAGE_{i,t} + \beta_2 * PROTECTION\_STRONG_{i,t} + \beta_3 * LEVERAGE_{i,t} * PROTECTION\_STRONG_{i,t} + CONTROLS_{i,t} + \varepsilon_{i,t} \quad (2)$$

Control Variables

In models (1) and (2), we include a vector of control variables that are usually used in the literature. We control for the size of the firm (*SIZE*) as Dechow and Dichev (2002) find that accruals quality is related to firm size. We control for growth opportunities (*GROWTH_OPP*) as firms with more growth opportunities, and thus with greater financing needs, might have stronger incentives to disclose credible accounting information (Bonetti, Magnan, & Parbonetti, 2016). Bédard, Marrakchi-Chtourou, and Courteau (2004) find a negative influence of profitability on earnings management. We include the dummy variable *LOSS* taking the value of one if net income is negative, and zero otherwise. The impact of accounting standards on the quality of accounting information has been a source of debate with mixed results (Soderstrom & Sun, 2007). As our sample is composed of firms that apply IFRS, US GAAP or Local GAAP, we control for the potential effect of accounting standards heterogeneity on earnings management. We use a dummy variable *IFRS* that takes the value of one if the firm applies IFRS, and zero otherwise. In addition, we use a dummy variable *US_GAAP* that takes the value of one if the firm applies US GAAP, and zero otherwise. The literature shows that firms audited by a Big Four company manage earnings less (DeFond & Zhang, 2014; Francis, Michas, & Seavey, 2013). To control for this effect, we use a dummy

variable *BIG4* taking the value of one if the firm's external auditor is a member of the Big Four accounting firms, and zero otherwise. Finally, we include sub-industry, country and year fixed effects to control for unobservable factors that may impact earnings quality. Standard errors are adjusted for heteroscedasticity and firm-level clustering, consistent with Petersen (2009) and all variables are winsorized (2% of the distribution). Appendix B provides detailed descriptions of all variables used in our models.

RESULTS

Descriptive Statistics

Table 2 reports the descriptive statistics of all variables used in this study for the full sample as well as for the two sub-samples. Our three alternative measures of earnings quality produce substantially similar results. The mean value varies between 0.056 for *EARNINGS_M1* and 0.058 for *EARNINGS_M3*. The mean value of *LEVERAGE* is 0.291[2]. This value is in line with Li and Singal (2019) who analyze U.S. hospitality data over 1992-2012. Comparing the two sub-samples, we can see that all variables (except *LOSS*) are higher for the strong institutions sub-sample.

[Insert Table 2 about here]

Figure 1 completes our description of financial leverage. Overall, *LEVERAGE* has been decreasing until 2013, with a minimum of 27.1% reached that year. Since then, it has been slightly increasing. Comparing the two institutional contexts, we can see that the mean leverage in countries with stronger institutions is almost systematically higher than in other countries. Moreover, since 2011, opposite trends occur in the two sub-samples, with a tendency towards more leverage in the strong World Bank index subsample, while the

[2] The mean leverage is relatively comparable across sub-industries and ranges from 0.270 for Gambling to 0.309 for Travel and Tourism and Recreational Services.

opposite is true for the weak World Bank index sub-sample. These contrasting trends over time justify the use of time fixed effects in our model.

[Insert Figure 1 about here]

Multivariate Analysis

We report our main findings for the estimation of equation (1) in Table 3. In columns (a) to (c) of Table 3, the coefficients on *LEVERAGE* are negative and significant, implying that higher levels of leverage are associated with lower earnings management (i.e. higher earnings quality). Overall, these results offer consistent evidence on the firm-level monitoring role of debtholders over financial information quality through financial leverage. Table 3 also provides evidence on other factors affecting the propensity of hospitality firms to manage earnings. Large firms (*SIZE*) disclose earnings of higher quality, whereas less profitable firms (*LOSS*) have lower earnings quality, which is in line with prior studies (e.g., Bédard, Marrakchi-Chtourou, & Courteau, 2004).

[Insert Table 3 about here]

Table 4 reports the main results to answer our second research question. Columns (a) to (c) document a significantly negative β_3 coefficient on the interaction term (*LEVERAGE* * *PROTECTION_STRONG*), meaning that the positive impact of leverage on earnings quality occurs only when institutions are strong.

Next, using the regulatory quality score to split our sample, we find that the positive and significant association between leverage and earnings quality holds only for firms in strong institutional contexts (columns (d) to (f) of Table (4)), which is in line with the results found in columns (a) to (c). Thus, we support the idea that, in countries with stronger institutions, the relation between leverage and earnings quality is significant and positive as institutions in place protect shareholders from managers' misbehavior (i.e. earnings

management in our case). On the contrary, in columns (g) to (i), the association between *LEVERAGE* and earnings quality is not significant. In countries with a relatively weak regulatory environment, debt does not act as an effective mechanism to increase the quality of financial reporting. It is interesting to note that the association is neither significant nor positive, which does not support the hypothesis of opportunism of managers.

[Insert Table 4 about here]

Additional Analyses

In this section, we run additional tests to ensure our results are not driven by specific countries or by the debt maturity structure. We also address the endogeneity issue.

Exclusion of Some Countries

To ensure that some countries do not drive our results, we (1) exclude over-represented countries and (2) over-leveraged countries. As Japan and the U.S. represent 45% of our sample, we exclude these two countries and re-run our tests. Our (un-tabulated) results remain the same. Then, as Spain and Portugal have the highest leverage levels using the *LEVERAGE* variable, with 49.7% and 43.8% respectively, we remove observations from these two countries. Once again, our (un-tabulated) results hold.

Debt Maturity Structure

Our results concerning the impact of leverage on earnings quality may depend upon the debt maturity structure (the proportion of short- and long-term debt with respect to total assets). We decompose the variable *LEVERAGE* into its two components: long-term debt to total assets (*LTDTA*) and short-term debt to total assets (*STDTA*). The coefficients associated with *LTDTA* are similar to those obtained with *LEVERAGE*, while the coefficients on *STDTA* are not significant (results not reported). These results indicate that it is the long-term debt portion of our leverage measure that positively and significantly impacts earnings quality.

Endogeneity

One may argue that we face an endogeneity issue because financial leverage is not randomly determined (i.e. not an exogenous variable). In other words, firms have various reasons to increase or decrease their leverage level.

The results of the Durbin-Wu-Hausman test (not reported) show that we have to reject the null hypothesis (at the 1% threshold) of our *LEVERAGE* variable being exogenous (with the three earnings management models). To ensure that our results do not suffer from endogeneity, we consider that the *LEVERAGE* variable is determined by firm-level, industry-level, and country-level factors. As a consequence, we take into account this issue and implement a two-step procedure using a two stage least squares (2SLS) regression including *TANGIBILITY* (the ratio of fixed tangible assets to total assets), and *GROWTH_OPP* (the market to book ratio) as instruments. The Sargan-Hansen test (J test) result is not significant, which confirms the validity of the instruments. Overall, the additional (un-tabulated) results support our main findings regarding our two research questions, even after correcting for this endogeneity issue.

CONCLUSION

Various studies document that firms in the hospitality industry have higher levels of financial leverage than other industries (Li & Singal, 2019; Singal, 2015; Tang & Jang, 2007). While the determinants of leverage in this industry have been widely studied, the consequences have received little academic attention. Our study intends to fill this gap and focuses on the impact of financial leverage on earnings quality in the hospitality industry. Based on a large sample of firms from 26 countries, we find that firms with higher financial leverage manage less their earnings (i.e. disclose earnings of higher quality). More interestingly, we document that this result is conditional on the institutional context. Using the

regulatory quality score from the World Bank index as a proxy for the strength of the institutional context, we find that the positive impact of leverage on earnings quality holds only in countries with strong institutional context, that is to say when institutions in place protect shareholders from managers' misbehavior (i.e. earnings management in our case). We run various analyses to make sure that our results are robust to specific methodological issues.

Our study provides some practical and theoretical implications. From an investor point of view, investing in firms that disclose earnings of quality (reflecting the true economic reality of the firm) is an important matter. By providing evidence that hospitality firms with high leverage disclose earnings of better quality if they are incorporated in countries with strong institutions, we help investors in their capital allocation process. Investing in hospitality firms from countries with weak institutions should be made with caution, and the greater underlying risk of significant earnings management – potentially misleading investors – has to be accounted for.

Next, this study provides useful insights to top managers and board of directors by documenting that using financial debt has some positive consequences in terms of earnings quality in countries with stronger investor protection. Thus, in line with Jensen (1986), engaging firms to finance projects with debt instead of equity may improve the alignment of managers' and shareholders' interests. It is well-known that financial leverage reduces the average cost of capital because of a tax advantage, avoids dilution of ownership structure, and puts pressure on managers that may be tempted to invest in negative net present values projects. Our results support the idea that more debt also reduces the information asymmetry between shareholders and managers by encouraging the latter to disclose earnings of higher quality.

Moreover, it is crucial to place our research in a more general context concerning the transformation of the hospitality industry with respect to the asset-light strategy, which is

generally associated with a decrease in tangible assets and debt levels (Sohn, Tang, & Jang, 2014). Assuming that hospitality firms will continue their shift towards more "asset-lightness", this will result in lower proportions of fixed asset in the balance sheets, and most probably in lower debt levels. Indeed, various studies document that firms with more tangible assets can borrow more because their fixed assets can serve as collateral, and at a lower cost (e.g. Norton, 1995; Rajan & Zingales, 1995; Sheel, 1994; Tang & Jang, 2007). Reducing the proportion of fixed assets might thus reduce debt financing opportunities and the underlying benefits. Meanwhile, there is a tendency towards more financial leverage in some sub-industries (Li & Singal, 2019). In consequence, these trends are likely to indirectly increase or decrease the quality of financial information disclosed by hospitality companies.

Our study is not without limitations. First of all, we solely focus on publicly traded firms, which limits the generalizability of our results to private firms. Moreover, running a large scale hospitality-focused study inevitably leads to pooling together sub-industries with different characteristics. Although we included sub-industry fixed effects in our tests on top of controlling for various characteristics, the usefulness of the results might be limited for specific sub-industries. Second, we only address the quality of accounting information through earnings management. However, other characteristics of accounting information may be impacted by financial leverage, like earnings persistence (e.g. Jeon, Kim, & Lee, 2006) or earnings forecasts (e.g. Smeral, 2016). Third, investigating how the asset-light strategy influences leverage in an international context, and as a result earnings quality, might also be an interesting direction for future research with access to the relevant data. In particular, as all sub-industries in the hospitality sector are not subject to the same trends and modes of operation (e.g., franchise, management contract, etc.), comparisons between sub-sectors and modes of operations would provide further insight into the results. Thus, more research is definitively needed on financial information in the hospitality industry.

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Table 1. Distribution of firm-year observations by sub-industry and country.

	Gambling	Hotels	Recreational services	Restaurants and bars	Travel and tourism	Total
Australia	80	56	30	23	52	241
Brazil	0	15	6	6	9	36
Canada	36	10	35	26	39	146
Chile	36	8	66	0	0	110
China	0	109	22	32	397	560
Croatia	0	106	0	10	20	136
Denmark	0	0	64	0	0	64
France	36	84	38	48	32	238
Germany	22	15	74	0	48	159
Greece	41	53	0	0	72	166
India	0	336	73	22	17	448
Indonesia	0	109	16	33	111	269
Italy	15	0	44	15	27	101
Japan	141	171	331	934	422	1,999
Mauritius	0	16	0	0	0	16
Mexico	15	33	5	30	0	83
Poland	0	15	0	16	24	55
Portugal	15	0	29	15	0	59
Spain	10	24	0	0	0	34
Sri Lanka	0	241	0	0	14	255
Sweden	32	13	20	0	5	70
Switzerland	10	0	15	0	30	55
Thailand	0	147	35	19	2	203
United Kingdom	52	30	67	197	75	421
United States	244	110	197	547	101	1,199
Vietnam	10	16	7	0	38	71
Total	**795**	**1,717**	**1,174**	**1,973**	**1,535**	**7,194**

Table 2. Descriptive statistics.

Full sample (N = 7,194)	Mean	Sd dev.	Min	Median	Max
EARNINGS_M1	0.056	0.053	0.000	0.039	0.229
EARNINGS_M2	0.057	0.059	0.000	0.039	0.311
EARNINGS_M3	0.058	0.059	0.000	0.039	0.303
LEVERAGE	0.291	0.225	0.000	0.276	0.855
PROTECTION_STRONG	0.499	0.500	0.000	0.000	1.000
SIZE	12.383	1.946	8.107	12.271	16.629
GROWTH_OPP	2.575	3.922	-5.976	1.614	22.034
LOSS	0.210	0.407	0.000	0.000	1.000
IFRS	0.204	0.403	0.000	0.000	1.000
US_GAAP	0.174	0.379	0.000	0.000	1.000
BIG4	0.498	0.500	0.000	0.000	1.000
Strong World Bank index (N = 3,591)					
EARNINGS_M1	0.057	0.054	0.000	0.040	0.229
EARNINGS_M2	0.059	0.061	0.000	0.040	0.311
EARNINGS_M3	0.059	0.060	0.000	0.041	0.303
LEVERAGE	0.308	0.233	0.000	0.294	0.855
SIZE	12.775	2.022	8.107	12.681	16.629
GROWTH_OPP	2.960	4.575	-5.976	1.836	22.034
LOSS	0.208	0.406	0.000	0.000	1.000
IFRS	0.232	0.422	0.000	0.000	1.000
US_GAAP	0.325	0.469	0.000	0.000	1.000
BIG4	0.543	0.498	0.000	1.000	1.000
Weak World Bank index (N = 3,603)					
EARNINGS_M1	0.055	0.052	0.000	0.038	0.229
EARNINGS_M2	0.056	0.058	0.000	0.038	0.311
EARNINGS_M3	0.056	0.057	0.000	0.038	0.303
LEVERAGE	0.275	0.215	0.000	0.254	0.855
SIZE	11.992	1.784	8.107	11.958	16.629
GROWTH_OPP	2.192	3.091	-5.976	1.441	22.034
LOSS	0.213	0.409	0.000	0.000	1.000
IFRS	0.176	0.381	0.000	0.000	1.000
US_GAAP	0.023	0.150	0.000	0.000	1.000
BIG4	0.453	0.498	0.000	0.000	1.000

Note: All variables are defined in Appendix B.

Table 3. The effect of leverage on earnings management.

	EARNINGS_M1	*EARNINGS_M2*	*EARNINGS_M3*
	(a)	(b)	(c)
LEVERAGE	-0.01***	-0.01**	-0.01**
	(-2.59)	(-2.14)	(-2.26)
SIZE	-0.01***	-0.01***	-0.01***
	(-8.62)	(-8.55)	(-8.42)
GROWTH_OPP	0.00	0.00	0.00
	(1.44)	(1.24)	(1.38)
LOSS	0.01***	0.01***	0.01**
	(3.27)	(3.36)	(2.45)
IFRS	-0.00	-0.00	-0.00
	(-0.21)	(-0.11)	(-0.32)
US_GAAP	0.00	0.00	0.00
	(0.35)	(0.43)	(0.48)
BIG4	0.00	0.00	0.00
	(0.76)	(0.69)	(0.67)
Constant	0.14***	0.15***	0.14***
	(10.10)	(10.04)	(10.47)
Country FE	Yes	Yes	Yes
Sub-industry FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Cluster	Firm	Firm	Firm
Observations	7,194	7,194	7,194
Adjusted R-squared	0.13	0.11	0.10
F-statistic	9.99***	9.28***	8.91***

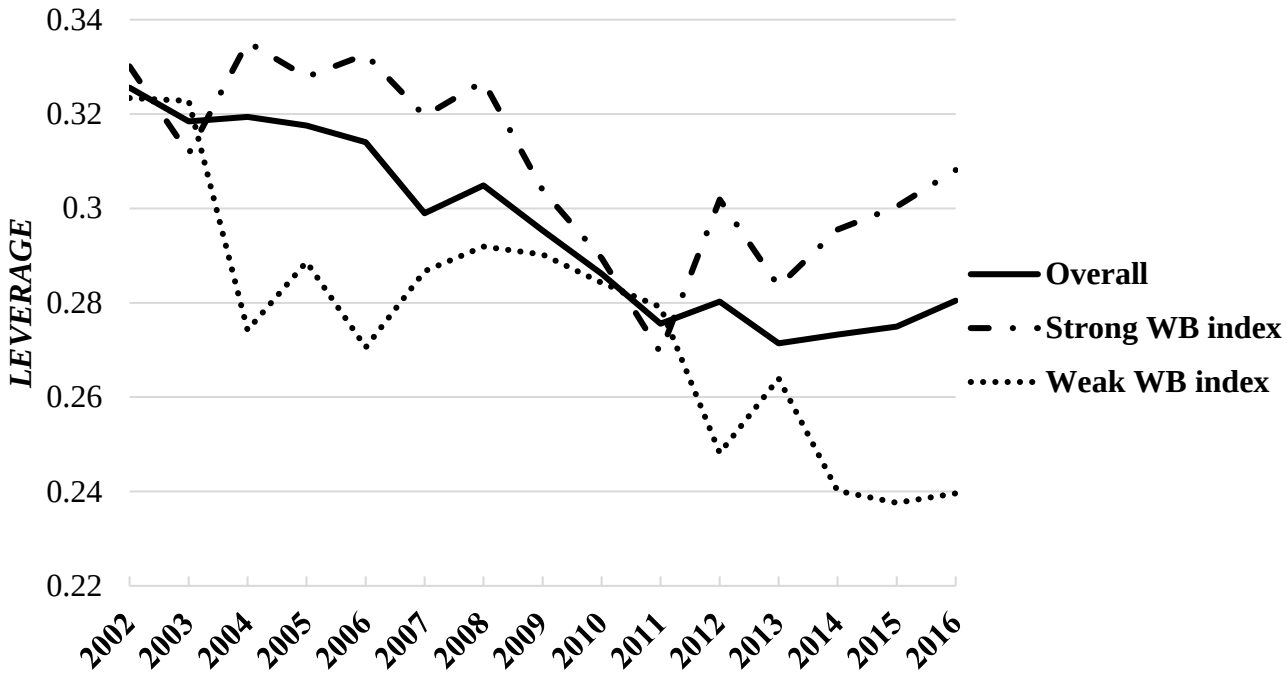
Note: All variables are defined in Appendix B.
OLS regressions with robust z-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 4. The effect of leverage on earnings management in different institutional contexts.

	Full sample			Strong World Bank index			Weak World Bank index		
	E_M1	*E_M2*	*E_M3*	*E_M1*	*E_M2*	*E_M3*	*E_M1*	*E_M2*	*E_M3*
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
LEVERAGE	-0.00	0.00	0.00	-0.03***	-0.03***	-0.03***	0.00	0.00	0.00
	(-0.37)	(0.08)	(0.05)	(-3.60)	(-3.34)	(-3.48)	(0.00)	(0.36)	(0.36)
PROTECTION_STRONG	0.00	0.00	0.00						
	(0.57)	(0.68)	(0.85)						
*LEVERAGE *PROTECTION_STRONG*	-0.02**	-0.03**	-0.03**						
	(-2.27)	(-2.45)	(-2.54)						
SIZE	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(-8.61)	(-8.53)	(-8.40)	(-7.26)	(-7.34)	(-7.00)	(-5.99)	(-5.68)	(-5.80)
GROWTH_OPP	0.00	0.00	0.00	0.00	0.00	0.00	0.00**	0.00**	0.00**
	(1.37)	(1.17)	(1.30)	(0.27)	(0.15)	(0.28)	(2.13)	(2.00)	(2.07)
LOSS	0.01***	0.01***	0.01**	0.01***	0.01***	0.01***	0.00	0.00	-0.00
	(3.12)	(3.21)	(2.29)	(3.73)	(3.71)	(3.20)	(0.54)	(0.61)	(-0.27)
IFRS	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	0.00	0.00	0.00
	(-0.23)	(-0.13)	(-0.34)	(-0.40)	(-0.28)	(-0.57)	(0.19)	(0.26)	(0.22)
US_GAAP	0.00	0.00	0.00	0.01	0.01	0.01	-0.03***	-0.03***	-0.03***
	(0.27)	(0.33)	(0.38)	(0.99)	(1.09)	(1.29)	(-3.29)	(-3.18)	(-3.16)
BIG4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.89)	(0.84)	(0.82)	(0.88)	(1.01)	(1.01)	(0.54)	(0.37)	(0.31)
Constant	0.14***	0.14***	0.14***	0.13***	0.14***	0.14***	0.17***	0.17***	0.17***
	(9.63)	(9.54)	(10.05)	(8.29)	(8.32)	(8.73)	(10.45)	(10.14)	(10.16)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub-industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	7,194	7,194	7,194	3,591	3,591	3,591	3,603	3,603	3,603
Adjusted R-squared	0.12	0.11	0.10	0.15	0.14	0.13	0.09	0.08	0.08
F-statistic	9.77***	9.27***	8.81***	9.76***	9.25***	8.91***	27.28***	25.97***	25.60***

Note: All variables are defined in Appendix B. *EARNINGS_M* variables are relabeled *E_M* for sake of space in this table. OLS regressions with robust z-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Figure 1. Evolution of the mean leverage over 2002-2016 (strong versus weak institutional context).



Appendix A. Earnings management models.

To ensure the robustness of our results, we use three measures of earnings management following Jones (1991), Dechow, Sloan, and Sweeney (1995), and Kothari, Leone, and Wasley (2005). In the three models, the abnormal (discretionary) component of accruals ($\varepsilon_{i,t}$) provides indirect evidence of earnings management behavior and, thus, of lower earnings quality.

In the three models, $TOTACC_{i,t}$ is the total accruals of firm *i* in year *t*, defined as net income before extraordinary items minus cash flows from operations. In the Jones (1991) model, total accruals are explained by the change in sales ($\Delta S_{i,t}$), and property, plant and equipment ($PPE_{i,t}$). All variables included in the model are scaled by lagged total assets ($TA_{i,t-1}$) to reduce heteroscedasticity:

$$\frac{TOTACC_{i,t}}{TA_{i,t-1}} = \mu_1 * \frac{1}{TA_{i,t-1}} + \mu_2 * \frac{\Delta S_{i,t}}{TA_{i,t-1}} + \mu_3 * \frac{PPE_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

The Dechow, Sloan, and Sweeney (1995) model expands the Jones model by removing the variation in accounts receivable ($\Delta AR_{i,t}$) from variation in sales:

$$\frac{TOTACC_{i,t}}{TA_{i,t-1}} = \mu_1' * \frac{1}{TA_{i,t-1}} + \mu_2' * \frac{\Delta S_{i,t} - \Delta AR_{i,t}}{TA_{i,t-1}} + \mu_3' * \frac{PPE_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (3)$$

The Kothari, Leone, and Wasley (2005) model includes the lagged return on assets ($ROA_{i,t-1}$):

$$\frac{TOTACC_{i,t}}{TA_{i,t-1}} = \mu_1'' * \frac{1}{TA_{i,t-1}} + \mu_2'' * \frac{(\Delta S_{i,t} - \Delta AR_{i,t})}{TA_{i,t-1}} + \mu_3'' * \frac{PPE_{i,t}}{TA_{i,t-1}} + \mu_4'' * ROA_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

Appendix B. List of variables and measurements.

Variable	Measure
EARNINGS_M1	Absolute value of abnormal accruals measured using the Jones (1991) model
EARNINGS_M2	Absolute value of abnormal accruals measured using the Dechow, Sloan, and Sweeney (1995) model
EARNINGS_M3	Absolute value of abnormal accruals measured using the Kothari, Leone, and Wasley (2005) model
LEVERAGE	(Long-term debt + Short-term debt) / Total assets
PROTECTION_STRONG	Dummy variable equal to 1 if the score from the World Bank index (regulatory quality) for the corresponding country-year is greater than the sample median, 0 otherwise
SIZE	Natural logarithm of total assets
GROWTH_OPP	Market value of equity / Book value of equity
LOSS	Dummy variable equal to 1 if the firm reports a loss in the current year, 0 otherwise
IFRS	Dummy variable equal to 1 if the firm applies IFRS, 0 otherwise
US_GAAP	Dummy variable equal to 1 if the firm applies US GAAP, 0 otherwise
BIG4	Dummy variable equal to 1 if the firm's external auditor is a Big four, 0 otherwise

[1] Restaurant & Dining ranks 2nd, Hotel & Gaming ranks 18th, and Recreation ranks 42nd out of 94 sectors. For more details, see: http://pages.stern.nyu.edu/~adamodar/.

[2] For more information: https://info.worldbank.org/governance/wgi/index.aspx#doc-methodology.