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Earnings Management in the Hotel Industry During the COVID-19 Pandemic: The Moderating Effect of Subsidiary Companies

Abstract

The hotel industry in the Republic of Croatia was intensively exposed to the financial consequences of the COVID-19 pandemic outbreak. These events represented a strong impetus for applying earnings management techniques to alleviate the financial repercussions of the COVID-19 crisis. Given that subsidiaries can be utilized for the mentioned activities, this study examines the moderating effect of subsidiary companies on the relationship between earnings management and the COVID-19 pandemic. The research sample included data from 2015 to 2022 for companies classified as hotels and similar accommodations at the stock exchange in the Republic of Croatia. The Jones model was used to estimate the magnitude of earnings management, while panel regression was used to estimate the research model. The findings indicate that companies which operated in the hotel industry resorted to indirect means of presenting more favourable financial results through subsidiaries during the COVID-19 pandemic.

Keywords: coronavirus, COVID-19, earnings management, hotel, subsidiaries

1. Introduction

The COVID-19 pandemic was declared on 11th March 2020, and it “had an intensive impact on all aspects of life, as well as business activities” (Šušak, 2020, p. 454). However, the tourism and hospitality industries are among the industries with the most intensive repercussions worldwide (Al-Mughairi et al., 2022). Similarly, tourism in the Republic of Croatia, traditionally one of the essential activities in the country, also suffered severe consequences of the pandemic. In Croatia, “every aspect of hotels' business has been negatively affected by the pandemic, lowering their liquidity, activity, and profitability, and increasing indebtedness”, but “the positive aspect is that most of the hotels were financially stable at the beginning of the pandemic” (Brozović et al., 2021, p. 38). These claims are consistent with the data presented on the platform Statista (2023) regarding the tourism sector's share in the Croatian GDP, according to which the mentioned share decreased drastically from 24.82% in 2019 to 8.56% in 2020.

Such a crisis environment incentivizes earnings management activities, given that the outlook of a company is primarily based on the financial performance disclosed in financial statements. Concerns about augmented earnings management throughout the financial crisis period are “pronounced in the hotel industry due to the principal–agent relationship between hotel shareholders and managers” (Chen et al., 2023, p. 172). Given that the previous major financial crisis took place less than a decade ago, Sequeira et al. (2023, p. 484) have compared it to the COVID-19 crisis, stating that “although the causes of crises are different, actions on financial

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data may be similar”. Although earnings management is a very complex concept, it could be defined as an activity which “occurs 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” (Healy & Wahlen, 1999, p. 368). There are two different types of earnings management – real earnings management which includes “altering real business activities during an accounting period” and accrual earnings management which “is carried out after the end of an accounting period by intentionally misrepresenting accruals on a financial statement” (Alhadab & Clacher, 2018, in Gim & Jang, 2024, p. 1144). The latter is the subject of analysis in this research. Given that earnings management is not directly observable, accruals are most frequently used to estimate the magnitude of earnings management.

Financial reporting quality mainly depends on executives because of their significant degree of discretion regarding the disclosure of financial statements and incentives stimulating them to exercise this authority (DeGeorge et al., 1999). The main underlying reasons for these incentives include a more favorable valuation of a business entity or adherence to the conditions of a contract. Certain external events, such as a crisis, could affect the intensity of earnings management incentives; the intricacy of determining the presence and intensity of such incentives increases during periods of financial crises. Even though decreased financial performance motivates companies to conduct income-increasing earnings management to achieve determined earnings benchmarks (Assenso-Okoko et al., 2020), more vigilant stakeholders’ oversight activities have opposite effects in terms of deterring executives from income-increasing earnings management and stimulating credibility in financial reporting (Ming Chia et al., 2007). Therefore, companies increase their financial reporting quality to attract investors (Cimini, 2015), who are more tolerant towards reduced financial performance during a financial crisis (Türegün, 2020).

The complexity of business groups offers additional opportunities for earnings management through subsidiaries. According to the Commission Regulation (EU) 2023/1803 of 13 August 2023 (European Commission, 2023) adopting specific international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council, subsidiary is defined as “an entity that is controlled by another entity” (Official Journal of the European Union, Appendix A). Henry et al. (2012) state how analysis of related party transactions for 83 cases that were described in SEC Accounting and Auditing Enforcement Releases showed that most frequent types of transactions include loans to related parties, purchase of goods and services of related parties as well as sale of goods or services to related parties. Some of the most well-known corporate scandals, such as Enron, Adelphia and Parmalat, included fraudulent transactions with related companies. For example, Enron used special purpose entities to hide debt and bad investment decisions from investors and creditors. Also, “many of the Enron transactions involved sales of assets to non-consolidated special purpose entities to report gains and/or avoid reporting losses” (Henry et al., 2012, p. 18). A similar situation occurred with Italian Parmalat, which used special purpose entities to hide debts and recognize fictitious revenue. Adelphia should also be mentioned in the context of financial statement manipulations and related companies. Namely, this company “fraudulently excluded billions of dollars of liabilities from its consolidated financial statements by hiding them in the books of its subsidiaries and presenting them off-balance sheet” (Belak, 2017, p. 115). These examples clearly indicate that transactions with related companies should also be considered in the context of earnings management research.

The main scientific contribution of this paper refers to examining the moderating effect of subsidiaries on the relationship between earnings management and the COVID-19 pandemic, which has not been previously researched to the authors’ knowledge. Subsidiaries are relevant for earnings management research because they could be utilised to present a more favourable financial situation for stakeholders. About increased stakeholders’ vigilance and demand for financial reporting credibility during the financial crises (Ming Chia et al., 2007), which restrain earnings management activities, companies could resort to their subsidiaries. Also, this

is the first study addressing these relationships in the sample of hotels operating in the Republic of Croatia. According to the data presented for European Union countries on the platform Statista (2024), Croatia was a European Union country with the highest contribution of travel and tourism to GDP in 2023, with a share of 25.8%, followed by Portugal with a share of 19.6%. In comparison, in the research by Parte-Esteban and Alberca-Oliver (2016), the tourism sector's share was 10.4% in Spanish GDP, and they have designated it as relevant to the economy. Besides its extensive exposure to the financial performance of the tourism sector, the fact that Croatia “is too small to rely on domestic tourists to save the season in times where foreign visits decline” (Brozović et al., 2021, p. 38) also adds to the specificity of this research setting.

The remainder of the paper after the introductory section is structured as follows: second section provides a review of literature on earnings management in hotel industry which was the basis for establishing research hypothesis, third section comprises information regarding formation of the research sample, regression equation for the research model and for the Jones model applied for estimating the magnitude of earnings management, in fourth section results of the univariate statistical analysis, correlation and panel regression are presented and, finally, fifth section comprises the concluding remarks.

2. Literature review

2.1. Motivations for earnings management during crisis periods

Given that companies operate in complex surroundings, predicting the impact of a crisis on earnings management behaviour is not so straightforward. Financial reporting quality could develop in two directions – it could be, for instance, enhanced to increase the likelihood of obtaining financial resources. However, it could also be reduced if, for instance, the company decides to manipulate financial numbers through big bath activities (Seetah, 2017). Filip and Raffounier (2014) also emphasise that crises can incentivise more intensive and less intensive use of earnings management practices. Authors point out different motives for more intensive use of questionable accounting practices, such as fear of stock prices falling (Charitou et al., 2007), maintaining shareholders' trust (Gorgan et al., 2012), as well as managers' effort not to violate debt financing agreements (Filip & Raffounier, 2014). On the other side, as one of the motives for reducing earnings management practices during a crisis, increased monitoring by different stakeholders (first, creditors and auditors) can be pointed out (Cimini, 2015). This is corroborated by the contrasting results of previous research (Parte-Esteban & Ferrer García, 2014), which documented increased earnings management (Callao & Jarne, 2011, in Parte-Esteban & Ferrer García, 2014), decreased earnings management (Kousenidis et al., 2013, in Parte-Esteban & Ferrer García, 2014) and differences in earnings management magnitude depending on country (Iatridis & Dimitras, 2013, in Parte-Esteban & Ferrer García, 2014) and crisis intensity (Trombetta & Imperatore, 2014, in Parte-Esteban & Ferrer García, 2014). Results showing decreased earnings management are in line with the findings of research conducted by Chintrakarn et al. (2018, in Chen et al., 2023, p. 169), who reported decreased earnings management in the crisis period and “found that no earnings management would have been sufficient to reverse the abysmal performance experienced during these crises”. Additionally, a crisis can be used by management as an alibi for the financial decline of a company (Chen et al., 2023).

2.2. Earnings management in the hotel sector and the COVID-19 pandemic

Research on earnings management in the hotel sector is scarce, mainly quantitative, and primarily conducted on the samples of companies operating in the Iberian Peninsula countries, which indicates the tendency of these companies toward conducting earnings management.

Pioneering univariate research based on frequency histogram analysis was conducted by Parte Esteban and Such Devesa (2011a, 2011b), who found a tendency of hotels to avoid reporting small losses. Furthermore,

they recognised companies utilising accrual and real earnings management as substitutes for doing so. Several years later, Parte-Esteban and Alberca-Oliver (2016) had extended the research regarding earnings benchmarks in the Spanish hotel industry by including the tourist flow and concluded “that regional tourist flow is associated with the corporate performance of firms but that there is an inflexion point for firms meeting earnings benchmarks” (p. 58).

Non-European evidence regarding earnings management in the hotel industry was provided by Liu and Hu (2017), who used the sample of companies operating in the Chinese hotel industry and found a positive relationship between earnings quality and accounts receivable. The research in the countries of the Mediterranean basin was continued by Costa and Mota (2021), who corroborated previous findings regarding earnings distribution using the sample of companies operating in the Portuguese hotel sector. They furthered the research by verifying firm size, debt and profitability as the motivational factors for earnings management. Predominantly quantitative research was complemented by surveys conducted on a sample of chartered accountants by Saleh et al. (2023), who analyzed creative accounting and financial reporting quality in Jordanian hotels.

Given that the COVID-19 pandemic is also an important variable of interest in this study, another strand of research addressing earnings management in the tourism sector, with an emphasis on hotels, is covered in this section. Research was primarily oriented to the 2008 financial crisis (Parte-Esteban & Ferrer Garcia [2014], Seetah [2017] and Chen et al. [2023]), except Sequeira et al. (2023), who examined the impact of the COVID-19 pandemic. Results are not conclusive, given that Parte-Esteban and Ferrer Garcia (2014), Seetah (2017) and Chen et al. (2023) found a negative relationship between the global financial crisis and financial reporting quality, while Sequeira et al. (2023) did not find evidence of income manipulation.

2.3. The potential role of subsidiaries regarding earnings management

Given that subsidiaries are included in the research as a moderating variable, the research trajectory regarding the role of subsidiaries in earnings management is also considered. Conducting related-party transactions through complex holdings structures provides significant possibilities for earnings management (Beuselinck & Deloof, 2014). Given that “increase in subsidiary earnings (...) directly translates into an increase in the MNC consolidated earnings”, (...) “MNCs may have incentives and opportunities to manage earnings through an orchestrated reporting strategy across subsidiaries” (Beuselinck et al., 2019, p. 8). Besides via accruals, subsidiaries also manage earnings through real activities (Bonacchi et al., 2018), which are considerably harder to detect. Beuselinck et al. (2019) found that multinational corporations (MNCs) utilise subsidiaries operating in countries with less stringent regulation for their earnings management activities. Although relatively scarce, the results of research on this topic (Thomas et al., 2004; Beuselinck & Deloof, 2014; Bonacchi et al., 2018; Beuselinck et al., 2019; Luo et al., 2024) are unambiguous, indicating frequent utilisation of business groups to facilitate earnings management. Given the more intensive stakeholders' oversight of corporate activities, the subsidiaries could also be utilised during the COVID-19 crisis.

2.4. Research hypothesis

As evident from the previous research, subsidiaries provide additional opportunities for earnings management activities, and they could be utilised to manage earnings to alleviate the financial repercussions of the COVID-19 crisis. As a respond to the call made in Gonçalves et al. (2024, p. 74) who stated that “the COVID-19 crisis (...) is also an important topic that must be considered in future research” and “that future research should explore to what extent this significant external shock has impacted the earnings management behavior of hospitality firms”, scientific contribution of this research includes analysis of earnings management in hotels and similar accommodation in the Republic of Croatia during the COVID-19 crisis. Consequently, it was expected that the number of subsidiaries would affect the relationship between earnings management and the COVID-19 pandemic, so the hypothesis was established as follows:

The number of subsidiaries has a statistically significant positive moderating effect on the relationship between earnings management and the COVID-19 pandemic.

3. Data and methodology

The research sample consists of companies listed on the Zagreb Stock Exchange on the 1st of October 2020, belonging to the sector I – *Activities of providing accommodation and food preparation and service* classified as 55.10 – *Hotels and similar accommodation* in the National Classification of Activities (Government of the Republic of Croatia, 2007). The entire population of companies belonging to the class was included in the sample. After omitting companies with missing data, the final research sample of panel data comprises 109 observations. 2015 to 2022 were included because “using a long time to collect data could increase the risk of some year-specific events confounding study results” (Gim & Jang, 2024, p. 1148). In other words, the research’s time span included the period of economic expansion, which followed the 2008 financial crisis, and the period of the COVID-19 financial crisis. The following regression model was utilised to determine relationships between the research variables of interest:

$$aDA_{i,t} = \beta_0 + \beta_1 * C_{i,t} + \beta_2 * SB_{i,t} + \beta_3 * C * SB_{i,t} + \beta_4 * SZ_{i,t} + \beta_5 * LV_{i,t} + \beta_6 * ROA_{i,t} + \beta_7 * B4_{i,t} + e_{i,t} \quad (1)$$

where aDA represents absolute discretionary accruals as a measure of earnings management and SB represents the number of the company’s subsidiaries. Identical to the approach utilised in Šušak et al. (2023), the dichotomous variable for the COVID-19 pandemic was included. However, with certain modifications, variable C represents the financial years for which annual financial statements were disclosed during the COVID-19 pandemic, from 11th March 2020 onwards. Given that the COVID-19 pandemic started when companies disclosed their annual financial statements, the smaller segment of the financial statements for the financial year 2019 was disclosed during the pre-pandemic period, while most of them were disclosed during the pandemic period. Furthermore, the variable C*SB represents the interaction variable between the variable signifying the financial years for which annual financial statements were disclosed during the COVID-19 pandemic and the variable signifying the number of subsidiaries, SZ represents company size, LV represents leverage, ROA represents return on assets, and B4 represents affiliation to the Big Four audit firms. Ultimately, dependent variable is a measure of absolute discretionary accruals, test variables are number of subsidiaries, as well as the interaction variable between the number of subsidiaries and the variable signifying the financial years for which annual financial statements were disclosed during the COVID-19 pandemic, while control variables are company size, leverage, return on assets and affiliation of company’s audit firm to the Big Four audit firms.

The Hausman test was conducted to determine if the fixed or random-effects models are more appropriate for estimating the model. Based on the results of the test, the former model was chosen. Given that the Breusch-Godfrey/Wooldridge test and the Breusch-Pagan test indicated the presence of autocorrelation and heteroskedasticity, appropriate measures were undertaken to resolve them. PAST 4.03 (Hammer et al., 2001), R language and environment for statistical computing (R Core Team, 2024) and its associated packages such as the stargazer (Hlavac, 2022), the car package (Fox & Weisberg, 2019), the plm Package (Croissant & Millo, 2008; Croissant & Millo, 2018) and the lm test (Zeileis & Hothorn, 2002) were used for the statistical analysis.

The Jones model, which “was implemented cross-sectionally, by industry and by year” (Bozec, 2008, p. v), was utilised to calculate discretionary accruals as a measure of earnings management (Fernandes & Guedes, 2010, p. 80):

$$TA_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \alpha_2(\Delta Rev_t/A_{t-1}) + (\alpha_3 PPE_t/A_{t-1}) + e_t \quad (2)$$

where “ TA_t is total accruals, ΔRev_t is the revenues in year t less revenues in year $t - 1$, PPE_t is gross property plant and equipment at the end of year t , and A_{t-1} is the total assets at the end of year $t - 1$ ” (Fernandes

& Guedes, 2010, p. 80). Total accruals are calculated as “net income minus operating cash flows deflated by beginning total assets” following the approach implemented by Peng et al. (2011, p. 120), and they “can be decomposed into discretionary and non-discretionary accruals” (Yoon, 2005, p. 1354). The former are calculated as a difference between non-discretionary and total accruals (Dejong & Ling, 2013). Identically to the approach used in previous research, absolute values of discretionary accruals are used as a proxy for earnings management (Krishnan et al., 2011; Abbott et al., 2016; Ham et al., 2017, in Hu et al., 2022; Dechow et al., 1995, in Safari et al., 2016). Absolute discretionary accruals are used because income-increasing and income-decreasing accruals could be included in the analysis.

4. Results

This section commences with fundamental measures of descriptive statistics presented in Table 1 for the companies included in the research sample, such as minimum, maximum, median and mean, from 2015 to 2022. The average value of absolute discretionary accruals of the sampled hotels amounted to 0.03, hotels controlled approximately two subsidiaries, their leverage values amounted to approximately 36% and values of return on assets amounted to approximately 2%. In contrast, the Big Four audit firm audited approximately 53% of observations. It should be noted that subsidiaries outside Croatia are also included.

Table 1
Descriptive statistics

Variable	Minimum	Median	Mean	Maximum
aDA	0.0009	0.02	0.03	0.15
SB	0	1	2.02	15
SZ	18.07	20.67	20.56	22.66
LV	0.1032	0.3407	0.3636	0.8650
ROA	-0.1732	0.0171	0.0208	0.1682
B4	0	1	0.5347	1

Abbreviations: aDA = absolute discretionary accruals calculated with the Jones model; SB = number of subsidiaries; SZ = size of a company (natural logarithm of total assets); LV = leverage (total liabilities/total assets); ROA = return on assets (net profit/total assets); B4 = company audited by a Big Four audit firm (1 = yes; 0 = no).
Source: Authors' calculation.

Table 2 provides a more detailed preview of the dependent variable over the years. The sample average value was used as a reference for comparison. As evident from the table, the value of absolute discretionary accruals constantly decreased annually from 2015 to 2021, except for the last annual financial statements (2022) disclosed before the end of the COVID-19 pandemic. The magnitude of earnings management sharply increased during the last financial year of the COVID-19 pandemic, unlike the other COVID-19 pandemic years, when earnings management was at its lowest.

Table 2
Preview of average annual absolute discretionary accruals in the research sample

Year	aDA	Index (Total = 100)
2015	0.030	1.00
2016	0.028	0.93
2017	0.026	0.87
2018	0.023	0.77
2019	0.021	0.70
2020	0.019	0.63
2021	0.012	0.40
2022	0.103	3.43
Total	0.030	1.00

Abbreviations: aDA = absolute discretionary accruals calculated with the Jones model.
Source: Authors' calculation.

Table 3 shows the correlation matrix between independent variables included in the regression. As shown in the table, the correlation between three variables is statistically significant: the relationship between leverage and company size, the relationship between leverage and profitability, and the relationship between affiliation of the company's audit firm to the Big Four audit firms and company size. There is no obvious signal of a multicollinearity problem as none of the correlation coefficients exceed the threshold of 0.7 (Belsley et al., 1980, in Lin et al., 2016)..

Table 3
Correlation matrix between independent variables included in the regression

	SZ	LV	ROA	B4
SZ		0.003	0.17	~0.0001
LV	0.28***		0.08	0.69
ROA	0.13	-0.16*		0.33
B4	0.65***	0.04	0.10	

Note. * signifies that $p < 0.1$; ** signifies that $p < 0.05$; *** signifies that $p < 0.01$. Abbreviations: C = financial years in which annual financial statements were disclosed during the COVID-19 pandemic; SB = number of subsidiaries; C*SB = interaction variable between the variable signifying the financial years for which annual financial statements were disclosed during the COVID-19 pandemic and the variable signifying number of subsidiaries; SZ = size of a company (natural logarithm of total assets); LV = leverage (total liabilities/total assets); ROA = return on assets (net profit/total assets); B4 = company audited by a Big Four audit firm (1 = yes; 0 = no).

Source: Authors' calculation.

Similar conclusions can be drawn from the variance inflation factors in Table 4, which do not exceed the threshold value of 4 (Kuang, 2008).

Table 4
Variance inflation factors (VIFs)

Variable	VIF
C	2.070864
SB	1.903799
C*SB	1.948887
SZ	2.911867
LV	1.345588
ROA	1.330853
B4	2.191958

Abbreviations: C = financial years for which annual financial statements were disclosed during the COVID-19 pandemic; SB = number of subsidiaries; C*SB = interaction variable between the variable signifying the financial years in which annual financial statements were disclosed during the COVID-19 pandemic and the variable signifying number of subsidiaries; SZ = size of a company (natural logarithm of total assets); LV = leverage (total liabilities/total assets); ROA = return on assets (net profit/total assets); B4 = company audited by a Big Four audit firm (1 = yes; 0 = no).

Source: Authors' calculation.

Table 5
Regression analysis

Independent variables	Dependent variable:
	aDA
C	-0.0002 (0.007)
SB	-0.002 (0.001)
C*SB	0.003* (0.001)
SZ	0.04*** (0.007)
LV	0.04 (0.03)
ROA	0.30*** (0.05)
B4	-0.02** (0.01)
R ²	0.23

Note. * signifies that $p < 0.1$; ** signifies that $p < 0.05$; *** signifies that $p < 0.01$. Abbreviations: aDA = absolute discretionary accruals calculated with the Jones model; C = financial years in which annual financial statements were disclosed during the COVID-19 pandemic; SB = number of subsidiaries; C*SB = interaction variable between the variable signifying the financial years for which annual financial statements were disclosed during the COVID-19 pandemic and the variable signifying number of subsidiaries; SZ = size of a company (natural logarithm of total assets); LV = leverage (total liabilities/total assets); ROA = return on assets (net profit/total assets); B4 = company audited by a Big Four audit firm (1 = yes; 0 = no).

Source: Authors' calculation.

The regression analysis results presented in Table 5 indicate the statistically significant positive (0.003) impact of the number of subsidiaries on the relationship between the level of earnings management and the COVID-19 pandemic. It signifies that for every additional subsidiary company, the level of earnings management during the COVID-19 pandemic was, on average, higher by 0.003. Among the control variables, statistically significant are the size of a company, profitability measured by return on assets, and the dichotomous variable signifying that a Big Four audit firm audited the company. They indicate that larger and more profitable companies were more prone to conducting earnings management. At the same time, the Big Four auditors served as an effective oversight in restraining earnings management activities.

5. Discussion and conclusion

Tourism was among the most affected industries during the COVID-19 pandemic (Rababah et al., 2020; Shen et al., 2021) due to the character of services provided, providing a strong incentive to manipulate financial results during the COVID-19 pandemic. Despite these incentives, the average value of absolute discretionary accruals constantly decreased annually, except for their sharp increase in the annual financial statements disclosed in 2022. One of the reasons for reduced earnings management during the COVID crisis may be that governments tried to help industries that were most hit by the crisis to overcome the turbulent period with different government support. This could be a potent stimulus for managers of these companies to present realistic financial results. The tourism sector suffered a substantial drop due to the pandemic, and hotel companies faced a significant decrease in revenues and cash flows. Such financial results made these companies candidates for government support, and managers had a strong motive for presenting real financial results and getting government support. It is indicative that earnings management sharply increased in 2022, during the first financial year after the grants to protect jobs during the pandemic for COVID-19 were cancelled.

Regression results regarding the relationship between earnings management and the COVID-19 crisis align with the notion of Cimini (2015), who pointed out increased monitoring by different stakeholders during a crisis as one of the motives for reducing earnings management practices. However, one of the ways available to improve perception of financial performance in times of crisis, applying earnings management activities through accrual manipulations, is debatable from the perpetrator's point of view because the public expects that companies experiencing difficulties will resort to such activities. Hence, companies were compelled to find additional ways of improving their financial position and performance presented to the public, such as subsidiaries. Regarding the research hypothesis, the regression results show that subsidiaries facilitated earnings management activities in the hotel industry during the COVID-19 pandemic, supporting previous research unanimously indicating frequent usage of business groups to conduct earnings management (Thomas et al., 2004; Beuselinck & Deloof, 2014; Bonacchi et al., 2018; Beuselinck et al., 2019; Luo et al., 2024). Hotels experienced a severe financial crisis, especially during the first year of the COVID-19 pandemic, and they resorted to indirect means of presenting more favourable financial results through subsidiaries.

Since only Croatian listed companies were included in the sample, and to improve the generalizability, research could be done on larger samples in other countries, and they could also include small and medium enterprises. Accrual models have limitations, so additional measures considering other aspects of earnings management could be used in future research (e.g. real earnings management). The variable regarding subsidiaries could also be further stratified to gain additional perspectives. Future research could differentiate between subsidiaries regarding the strength of the rule of law and consider if there is a difference between income-increasing and income-decreasing earnings management. Also, the period after the COVID-19 pandemic could be examined to determine the moderating effect of subsidiaries on the relationship between earnings management and the COVID-19 pandemic.

References

- Al-Mughairi, H.M.S., Bhaskar, P., & Alazri, A.K.H. (2022). The economic and social impact of COVID-19 on tourism and hospitality industry: A case study from Oman. *Journal of Public Affairs*, 22, Article e2786. <https://doi.org/10.1002/pa.2786>
- Assenso-Okofu, O., Ali, M.J., & Ahmed, K. (2020). The effects of the global financial crisis on the relationship between CEO compensation and earnings management. *International Journal of Accounting & Information Management*, 28(2), 389-408. <https://doi.org/10.1108/ijaim-08-2019-0101>
- Belak, V. (2017). *Lažiranje finansijskih izvještaja, prijevare i računovodstvena forenzika* [Falsification of financial statements, fraud and accounting forensics]. Belak excellens d.o.o.
- Beuselinck, C., Cascino, S., Deloof, M., & Vanstraelen, A. (2019). Earnings management within multinational corporations. *The Accounting Review*, 94(4), 45-76. <https://doi.org/10.2308/accr-52274>
- Beuselinck, C., & Deloof, M. (2014). Earnings management in business groups: Tax incentives or expropriation concealment? *The International Journal of Accounting*, 49(1), 27-52. <https://doi.org/10.1016/j.intacc.2014.01.008>
- Bonacchi, M., Cipollini, F., & Zarowin, P. (2018). Parents' use of subsidiaries to "push down" earnings management: Evidence from Italy. *Contemporary Accounting Research*, 35(3), 1332-1362. <https://doi.org/10.1111/1911-3846.12330>
- Bozec, Y. (2008). Ownership concentration, separation of voting rights from cash flow rights, and earnings management: an empirical study in Canada. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 25(1), 1-15. <https://doi.org/10.1002/cjas.52>
- Brozović, M., Mališ, S.S., & Božić, L. (2021). Financial position and performance of listed hotels in times of pandemic – Case of Croatia. In I. N. Braje, B. Jaković, & D.F. Hodak (Eds.), *Proceedings of FEB Zagreb 12th International Odyssey Conference on Economics and Business* (pp. 38-54). University of Zagreb, Faculty of Economics and Business. <https://doi.org/10.22598/odyssey/2021.3>
- Charitou, A., Lambertides, N. & Trigeorgis, L. (2007). Earnings behaviour of financially distressed firms: The role of institutional ownership, *Abacus*, 43(3), 271-296. <https://doi.org/10.1111/j.1467-6281.2007.00230.x>
- Chen, Y., Capener, D., & Valenzuela, E. (2023). Valuation effects of earnings management on hotel firm value. *American Journal of Economics and Sociology*, 82(3), 167-185. <https://doi.org/10.1111/ajes.12502>
- Cimini, R. (2015). How has the financial crisis affected earnings management? A European study. *Applied Economics*, 47(3), 302-317. <https://doi.org/10.1080/00036846.2014.969828>
- Costa, R.A., & Mota, J. (2021). Earnings management in hospitality firms: Evidence from Portugal. *Tourism: An International Interdisciplinary Journal*, 69(4), 578-594. <https://doi.org/10.37741/t.69.4.7>
- Croissant, Y., & Millo, G. (2008). Panel data econometrics in R: The plm package. *Journal of Statistical Software*, 27(2), 1-43. <https://doi.org/10.18637/jss.v027.i02>
- Croissant, Y., & Millo, G. (2018). *Panel Data Econometrics with R*. John Wiley & Sons, Ltd.
- Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The Journal of Business*, 72(1), 1-33. <https://doi.org/10.1086/209601>
- Dejong, D., & Ling, Z. (2013). Managers: Their effects on accruals and firm policies. *Journal of Business Finance & Accounting*, 40(1-2), 82-114. <https://doi.org/10.1111/jbfa.12012>
- European Commission. (2023, September 26). *Commission Regulation (EU) 2023/1803 of 13 September 2023 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council*. *Official Journal of the European Union*, L 237, 1-992. <https://eur-lex.europa.eu/eli/reg/2023/1803/oj/eng>
- Fernandes, N., & Guedes, J. (2010). Keeping up with the Joneses: A model and a test of collective accounting fraud. *European Financial Management*, 16(1), 72-93. <https://doi.org/10.2139/ssrn.1063621>
- Filip, A. & Raffounier, B. (2014). Financial crisis and earnings management: The European evidence. *The International Journal of Accounting*, 49(4), 455-478. <https://doi.org/10.1016/j.intacc.2014.10.004>
- Fox, J., & Weisberg, S. (2019). *An R companion to applied regression* (3rd ed.). SAGE Publications, Inc.

- Kim, J., & Jang, S.S. (2024). Earnings management practices of the lodging industry: Diverging behaviors of lodging real estate investment trusts and lodging C-corps. *Tourism Economics*, 30(5), 1140-1165. <https://doi.org/10.1177/13548166231189142>
- Gonçalves, B., Coelho, L., & Pinto, P. (2024). Earnings management in the hospitality industry: A systematic literature review. *Tourism & Management Studies*, 20(1), 65-77. <https://doi.org/10.18089/tms.20240105>
- Gorgan, C., Gorgan, V., Dumitru, V.F., & Pitulice, I.C. (2012). The evolution of the accounting practices during the recent economic crisis: Empirical survey regarding the earnings management. *Amfiteatru Economic Journal*, 14(32), 550-562.
- Government of the Republic of Croatia. (2007). *Odluka o Nacionalnoj klasifikaciji djelatnosti 2007 – NKD 2007* [Decision on the National Classification of Activities 2007 – NKD 2007]. *Narodne novine*, 58/07.
- Hammer, Ø., Harper, D.A.T., & Ryan, P.D. (2001). PAST: Paleontological statistics software package for education and data analysis. *Palaeontologia Electronica*, 4(1), 1–9.
- Healy, P.M., & Wahlen, J.M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383. <https://doi.org/10.2308/acch.1999.13.4.365>
- Henry, E., Gordon, E.A., Reed, B., & Louwers, T. (2012). The role of related party transactions in fraudulent financial reporting. *Journal of Forensic & Investigative Accounting*, 4(1), 186-213.
- Hlavac, M. (2022). *Stargazer: Well-formatted regression and summary statistics tables* (R package version 5.2.3.). CRAN. <https://CRAN.R-project.org/package=stargazer>
- Hu, N., Xue, X., & Liu, L. (2022). The impact of air pollution on financial reporting quality: Evidence from China. *Accounting & Finance*, 62(3), 3609-3644. <https://doi.org/10.1111/acfi.12898>
- Kuang, Y.F. (2008). Performance-vested stock options and earnings management. *Journal of Business Finance & Accounting*, 35(9-10), 1049-1078. <https://doi.org/10.1111/j.1468-5957.2008.02104.x>
- Lin, Z., Liu, M., & Noronha, C. (2016). The impact of corporate governance on informative earnings management in the Chinese market. *Abacus*, 52(3), 568-609. <https://doi.org/10.1111/abac.12084>
- Liu, H., & Hu, C. (2017, July). A study on the relationship between accrued income and earnings quality of listed companies in the hotel industry. In *Proceedings of the 2017 2nd International Conference on Modern Management, Education Technology, and Social Science (MMETSS 2017)* (pp. 111-118). Atlantis Press. <https://doi.org/10.2991/mmetss-17.2017.24>
- Luo, M., Zhang, F., & Zhang, X. (2024). Earnings Management via not-wholly-owned subsidiaries. *Management Science*, 71(1), 917-941. <https://doi.org/10.1287/mnsc.2022.03090>
- Ming Chia, Y., Lapsley, I., & Lee, H.-W. (2007). Choice of auditors and earnings management during the Asian financial crisis. *Managerial Auditing Journal*, 22(2), 177-196. <https://doi.org/10.1108/02686900710718672>
- Parte Esteban, L., & Such Devesa, M.J. (2011a). Determinants of earnings benchmarks in the Spanish hotel industry. *Tourism Economics*, 17(1), 53-72. <https://doi.org/10.5367/te.2011.0024>
- Parte Esteban, L., & Such Devesa, M.J. (2011b). Earnings management in the Spanish hotel industry. *Cornell Hospitality Quarterly*, 52(4), 466-479. <https://doi.org/10.1177/1938965511402930>
- Parte-Esteban, L., & Alberca-Oliver, P. (2016). Tourist flow and earnings benchmarks: Spanish hotel industry. *Journal of Hospitality & Tourism Research*, 40(1), 58-84. <https://doi.org/10.1177/1096348013491595>
- Parte-Esteban, L., & Ferrer García, C. (2014). The influence of firm characteristics on earnings quality. *International Journal of Hospitality Management*, 42, 50-60. <https://doi.org/10.1016/j.ijhm.2014.06.008>
- Peng, E.Y., Shon, J., & Tan, C. (2011). XBRL and accruals: Empirical evidence from China. *Accounting Perspectives*, 10(2), 109-138. <https://doi.org/10.1111/j.1911-3838.2011.00021.x>
- Rababah, A., Al-Haddad, L., Sial, M.S., Chunmei, Z., & Cherian, J. (2020). Analyzing the effects of COVID-19 pandemic on the financial performance of Chinese listed companies. *Journal of Public Affairs*, 20(4), e2440. <https://doi.org/10.1002/pa.2440>
- R Core Team. (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>

- Safari, M., Cooper, B. J., & Dellaportas, S. (2016). The influence of remuneration structures on financial reporting quality: Evidence from Australia. *Australian Accounting Review*, 26(1), 66-75. <https://doi.org/10.1111/auar.12083>
- Saleh, M.M.A., Jawabreh, O., & Abu-Eker, E.F.M. (2023). Factors of applying creative accounting and its impact on the quality of financial statements in Jordanian hotels, sustainable practices. *Journal of Sustainable Finance & Investment*, 13(1), 499-515. <https://doi.org/10.1080/20430795.2021.1962662>
- Seetah, K. (2017). The effect of financial and eurozone crisis on accounting quality of the hospitality sector. *Journal of Hospitality Marketing & Management*, 26(5), 552-563. <https://doi.org/10.1080/19368623.2017.1231652>
- Sequeira, N., Mota, M., Costa, R., & Luty, P. (2023, November). The Influence of the COVID-19 crisis on financial statements manipulations in the Portuguese wine and tourism sector. In A. Abreu, J.V. Carvalho, P. Liberato, H.C. Monroy (Eds.), *Advances in tourism, technology and systems, ICOTTS 2023.: Vol. 383. Smart Innovation, Systems and Technologies* (pp. 483-493). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-9765-7_42
- Shen, H., Fu, M., Pan, H., Yu, Z., & Chen, Y. (2021). The impact of the COVID-19 pandemic on firm performance. In Y. Sha & S.S. Sharma (Eds.), *Research on pandemics* (pp. 81-98). Routledge.
- Statista. (2023, March). *Share of the GDP of the tourism sector in Croatia from 2013 to 2028*. <https://www.statista.com/forecasts/1153595/tourism-sector-gdp-share-forecast-in-croatia>
- Statista. (2024, July). *Share of travel and tourism's total contribution to GDP in European Union member countries (EU-27) and the United Kingdom (UK) in 2019 and 2023*. <https://www.statista.com/statistics/1228395/travel-and-tourism-share-of-gdp-in-the-eu-by-country/>
- Šušak, T. (2020). The effect of regulatory changes on relationship between earnings management and financial reporting timeliness: The case of COVID-19 pandemic. *Zbornik radova Ekonomskog fakulteta u Rijeci: Časopis za ekonomsku teoriju i praksu*, 38(2), 453-473. <https://doi.org/10.18045/zbfri.2020.2.453>
- Šušak, T., Pavić Kramarić, T., & Bartulović, M. (2023). Gender diversity in the boardroom and earnings management during the period of the COVID-19 crisis. *Zbornik radova Ekonomskog fakulteta u Rijeci: Časopis za ekonomsku teoriju i praksu*, 41(1), 41-63. <https://doi.org/10.18045/zbfri.2023.1.41>
- Thomas, W.B., Herrmann, D.R., & Inoue, T. (2004). Earnings management through affiliated transactions. *Journal of International Accounting Research*, 3(2), 1-25. <https://doi.org/10.2308/jiar.2004.3.2.1>
- Türegün, N. (2020). Does financial crisis impact earnings management? Evidence from Turkey. *Journal of Corporate Accounting & Finance*, 31(1), 64-71. <https://doi.org/10.1002/jcaf.22418>
- Yoon, S.S. (2005). A comparison of earnings management between KSE firms and KOSDAQ firms. *Journal of Business Finance & Accounting*, 32(7-8), 1347-1372. <https://doi.org/10.1111/j.0306-686x.2005.00631.x>
- Zeileis, A., & Hothorn, T. (2002). Diagnostic checking in regression relationships. *R News*, 2(3), 7-10.

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