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The Impact of ESG Factors in the Credit Assessment of Tourism Enterprises: A Possible Perspective for Customer Relationships

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Abstract

Tourism is a significant economic sector in Italy, accounting for 13.2% of national GDP. It had been steadily rising since 2014, averaging 2.1% per year and 1.7% since 2009. In contrast, the Covid-19 epidemic had a severe impact in the first five months of 2020, resulting in a 63% drop in hotel overnight stays compared to the same period in 2019. Despite developing global competition, Italy nevertheless draws traveler flows, persevering with the tremendous trend and selling employment and neighborhood development. As there is a diversity of services in the tourism sector, we concentrated on the hotel industry, which includes companies that are homogenous in production and competitive setting. The hotel management theory highlights the complexity of managing diverse activities within a hotel, such as accommodation, food and beverage, and laundry, while simultaneously providing customer service. Hotel managers often face criticism for taking on multiple roles, and problems with underperforming hotel restaurants are attributed to the differing core competencies required in hotels and restaurants. Outsourcing is seen as a solution to manage this diversity problem. Firm performance is affected by both external and internal factors. External influences include industry and market competition, whereas internal elements include daily operational decisions and resource allocation. Performance in service organizations is measured not just by financial statistics but also by intangible elements such as human resources, quality, image, and brand awareness. In the hotel industry, performance indicators are measured by both financial outcomes and non-financial indicators. There has been a shift towards more integrated performance measurement systems that combine financial and non-financial indicators. This shift highlights the indirect link between performance and customer satisfaction and quality; the same link, most directly, we can find in EBA-LOM Guidelines, concerning especially the ESG factors. Indicators such as average occupancy rate, total operating revenues, and average output value per employee can be used to assess hotel industry success. In the hotel sector, performance is investigated by looking at the links between performance and both external and internal factors. This study focuses on the performance determinants in the hotel business and gives empirical data on the role of performance factors. The purpose of this study is to look into the link between performance and its economic-financial drivers in the Italian hotel business and in the difficult of the banking system, facing the importance more and more relevant of the ESG's factors, in investigating the firm creditworthiness.

Keywords: Customer Relationships, Perspective, Tourism, ESG Factors.

Introduction

Despite developing global competition, Italy nevertheless draws traveler flows, persevering with the tremendous trend and selling employment and neighborhood development [1]. As there is a diversity of services in the tourism sector, we concentrated on the hotel industry, which includes companies that are homogenous

in production and competitive setting. The hotel management theory highlights the complexity of managing diverse activities within a hotel, such as accommodation, food and beverage, and laundry, while simultaneously providing customer service. Hotel managers often face criticism for taking on multiple roles, and problems with underperforming hotel restaurants are attributed to the differing core competencies required in hotels and restaurants. Outsourcing is seen as a solution to manage this diversity problem.

Firm performance is affected by both external and internal factors. External influences include industry and market competition, whereas internal elements include daily operational decisions and resource allocation. Performance in service organizations is measured not just by financial statistics but also by intangible elements such as human resources, quality, image, and brand awareness.

In the hotel industry, performance indicators are measured by both financial outcomes and non-financial indicators. There has been a shift towards more integrated performance measurement systems that combine financial and non-financial indicators. This shift highlights the indirect link between performance and customer satisfaction and quality.

Indicators such as average occupancy rate, total operating revenues, and average output value per employee can be used to assess hotel industry success. In the hotel sector, performance is investigated by looking at the links between performance and both external and internal factors.
This study focuses on the performance determinants in the hotel business and gives empirical data on the role of performance factors. The purpose of this study is to look into the link between performance and its economic-financial drivers in the Italian hotel business.

The Italian Context
Italian tourism is particularly important in Europe, with the country recording 437 million overnight stays in 2019, a 1.8% increase over 2018. In terms of overnight stays, Italy ranks fourth among the EU-28 countries, trailing only Spain, France, and Germany. It is worth noting that many hotels in Italy are small, with many being over 30 years old and approximately 20% being over a century old. Despite ageing infrastructure, hotel quality has improved over time.
In 2019, the hotel industry alone accounted for 64.3% of all overnight stays, with overseas flows accounting for 51% of these stays. Over the last decade, foreign tourism has been increasingly vital for the Italian hotel business, with average annual growth rates of 2.5%, much greater than local demand's 0.1% growth rates.

The Covid-19 pandemic, on the other hand, affected the tourism business, which was having its finest year in history. International outbound tourists surpassed 1.5 billion in 2019, a 4% rise, though slower than the exceptional rates of 6% in 2018 and 6% in 2017. The outbreak has had a significant impact on the sector.

Tourism is a significant economic sector in Italy, accounting for 13.2% of national GDP. It had been steadily rising since 2014, averaging 2.1% per year and 1.7% since 2009. In contrast, the Covid-19 epidemic had a severe impact in the first five months of 2020, resulting in a 63% drop in hotel overnight stays compared to the same period in 2019.

As a result, numerous hotels in Italy were forced to close, accounting for 70.4% of the total, with only 28.3% remaining operating. 16% of the hotels were somewhat operational, while 12.3% were fully operating. All of the hotels that were reviewed had to make temporary operational changes, with the primary focus being on establishing new cleanliness standards and processes.

Furthermore, one-third of the hotels chose less strategic and more contingent measures, such as restructuring their organizational structure (despite the inability to terminate employees hired prior to the pandemic), renegotiating contracts with suppliers, and shifting investments from traditional marketing to digital marketing, resulting in budget cuts for the former. Many hotels also took advantage of the stoppage period to renovate their properties.

Literature
Bonacorsi, Cerasi, Galfrascoli and Manera studied the relationship between the risk of default and Environmental, Social and Governance (ESG) factors using Machine Learning (ML) techniques on a cross-section of European listed companies [2]. Their proxy for credit risk is the z-score originally proposed by Altman [3]. They consider an extensive number of ESG raw factors sourced from the rating provider MSCI as potential explanatory variables. In a first stage they show, using different SML methods such as LASSO and Random Forest, that choice of ESG factors, further to the standard accounting ratios, facilitates explaining a firm's chance of default. In a second stage, they measure the impact of the selected variables on the risk of default. Their approach provides a novel perspective to understand which environmental, social responsibility and governance characteristics may reinforce the credit score of individual companies.

The authors focus on the raw ESG information used by rating agencies rather than the scores assigned by these agencies. This approach ensures independence from different rating schemes and allows the results to be applicable to non-rated corporations.

Several empirical studies have examined the relationship between ESG ratings and corporate performance, as well as creditworthiness. The studies find positive links between ESG ratings and financial performance, stock returns, and lower credit spreads. There is evidence that incorporating ESG factors into the credit rating process improves the prediction of borrowers' financial performance and default risk. Credit rating agencies recognize the importance of ESG factors in assessing credit quality and have started considering ESG risks in their evaluations. The UNPRI Statement on ESG in credit risk and ratings emphasizes the relevance of ESG factors for creditworthiness assessment. Despite this evidence, there is still a lack of a comprehensive credit risk model that explicitly incorporates ESG dimensions as determinants of default risk. The project aims to fill this gap by using machine learning techniques to identify relevant ESG characteristics for predicting default risk and analyzing their relationship with creditworthiness using a dataset of European list-

ed companies. The model utilizes accounting ratios and assigns a score to companies which can then be used to classify them into different groups based on their level of financial distress. Altman derived the weights for the ratios by employing multiple Discriminant Analysis (MDA) calculating the Altman z-scores (linear combination of various financial ratios [4].

Given the high number of ESG scores and metrics, it could be challenging for investors to understand and select the best ESG measure. Cerchiello and Giudici created a method to combine information provided by different ESG scores into single aggregate measure of company sustainability [5]. The combined ESG metric is built using a Bayesian approach which then assigns weights to the single scores based on their capability to predict the credit rating of companies. This approach not only provides a unified rating but also improves the predictive accuracy of credit ratings. The methodology is based on the assumption that the probability of default for a company is constant within each level of a covariate. It uses Bayesian inference and assumes that the probability of default follows a Beta distribution. The partition of covariate levels is determined, and the posterior probability of the partition is calculated. The expected probability of default for a company, given the available covariates, is then obtained using the posterior probabilities as covariate weights. In the application to credit rating and ESG score data, the response variable is modeled as a multinomial variable, and the parameters are assumed to follow a Dirichlet distribution. The marginal likelihood contribution of each level of the covariate is calculated, and the total marginal likelihood of the partition is used as the covariate weight. The expected probability of a company belonging to a specific credit rating class is obtained using the covariate weights. Avramov, Cheng, Lioui and Tarelli they propose a model that is a CAPM illustration in which each alpha and powerful beta range with firm- degree ESG uncertainty [6]. The paper discusses the challenges of assessing the true ESG profile of a firm due to incomplete and opaque data and no standardized methodologies used by ESG rating agencies. It emphasizes the importance of considering ESG uncertainty in portfolio decisions and asset pricing.

The study examines the equilibrium implications of ESG uncertainty for both the aggregate market and the cross section. It finds that equity perceived risk increases with ESG uncertainty, leading to a decrease in overall equity demand, even in a green market. The market premium is influenced by higher risk due to ESG uncertainty and the nonpecuniary benefits ESG investors derive from holding green stocks. The relationship between ESG uncertainty and the equity premium is inconclusive when the market is green, but in a green-neutral market, the equity premium rises with ESG uncertainty.

The paper also develops a Capital Asset Pricing Model (CAPM) representation where both alpha and effective beta vary with firm-level ESG uncertainty. It demonstrates that accounting for ESG uncertainty affects the equilibrium alpha, which increases with ESG uncertainty, and weakens the ESG-alpha relation. The study analyzes investor demand based on ESG ratings and uncertainty and finds that ESG-sensitive investors lower their demand for risky assets with higher ESG uncertainty. The cross-sectional analysis reveals that the relationship between ESG ratings and future performance is negative when uncertainty is low but becomes nonlinear and ambiguous in the presence of ESG uncertainty. The model incorporates ESG preferences and uncertainty into asset pricing and portfolio selection, demonstrating that ESG factors and uncertainty affect the optimal portfolio strategies of investors.

This summary provides an overview of the key insights derived from the analysis of the simplified economy with two risky assets. There is a negative relationship between ESG ratings and expected CAPM alpha. The study confirms that CAPM alpha increases with ESG rating uncertainty.

Concerning the Houston and Hongyu paper, using Rep Risk we can evaluate the ESG performance with changes in RRI (RepRisk changes) from one year to the next correlate with the firm's RRI level in the previous year [7]. Poor ESG performance can increase credit risk for borrowers due to potential backlash from stakeholders, negative publicity, consumer boycotts, and increased regulation and litigation. Banks, therefore, may incorporate these factors into the structure and pricing of loan agreements. Additionally, banks are concerned about their own reputation and social capital, as being associated with poor ESG-rated borrowers can harm their image and lead to negative media coverage and increased regulatory scrutiny.

Overall, the research paper provides evidence that banks play a significant role in shaping borrower ESG activities, driven by financial motivations, concerns about reputation, and the fear of subsequent exit. The findings contribute to the understanding of how key stakeholders, such as banks, influence corporate ESG policies.

This study utilizes an event-based outcome measure of environmental, social, and governance (ESG) performance at the firm level, using data from Rep Risk. Rep Risk provides a comprehensive dataset of negative ESG news incidents and monthly ESG ratings without self-reported ESG compliance information. Each incident is assessed for its ESG relevance and assigned proprietary severity, reach, and novelty scores. The resulting Rep Risk Index (RRI) reflects the cumulative impact of negative events, with higher values indicating worse ESG performance. This study leverages Rep Risk data to evaluate the ESG performance of public and private firms, considering the societal impact of ESG compliance and accounting for the path-dependent nature of ESG ratings over time. The analysis also highlights the path-dependent nature of a firm's RRI, with changes in RRI from one year to the next correlated with the firm's RRI level in the previous year. This can be attributed to proactive crisis management by firms exposed to negative ESG news and the decay of ESG ratings over time, where the decay rate depends on the current RRI level.To address the concern of borrower ESG profile being the same across facilities within the same loan package, the study examines the evolution of borrower ESG ratings at the package level instead of the facility level. The study is about the relationship with banks and firms in order to decide if borrow money to a firm or not, but we can use the RepRisk method to assess the ESG performance and see if the changes can be attributed to the hotels management or to other qualitative variables. Finally, Fraser J.R. S., Quail R. and Simkins B. J. they suggest the critical actions that should be taken in relation to ESG reporting [8].

Research Methodology

Methodologically, the studies begin evolved with theoretical work, comprising especially a literature evaluation at the subject, with special focus on the concept of performance in the hotel industry and the ESG. Subsequently, it describes the empirical research undertaken, which includes the selection process of a sample of 29 hotels. Finally, the studies effects are presented, which display a clean dating among class and performance.

To structure our study that combines financial data and quality data of the selected companies to assess the alignment between customer perception and financial performance, we will follow these steps:

Define Objective

Understanding if positive customer perception correlates with better financial results or if changes in customer perception impact financial performance. Analyze see how the financial performance of a company could be reflected in a positive or negative way in the online UGC (user generated content).

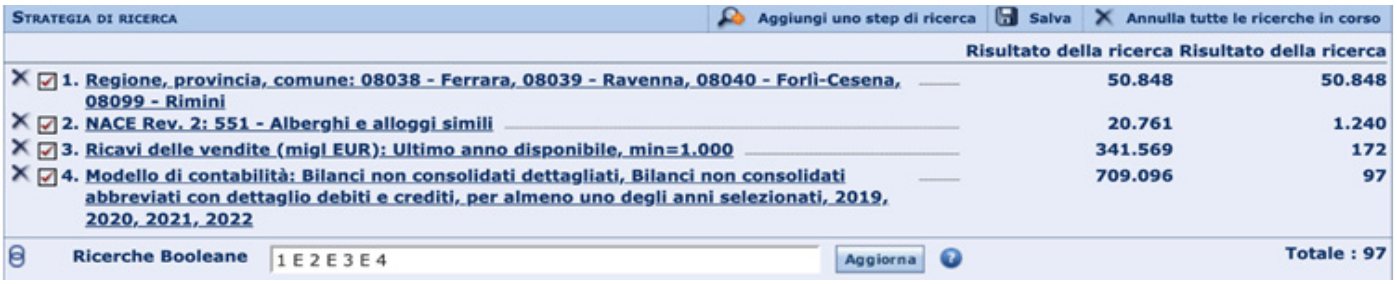
Research Questions:

- Is there relationship between UGC and the economic performance of the firm?
- If a relationship exists, what is the direction of causality?
- Among the various metrics of UGC, which metric bests relate to the economic performance of the firm?

Gather Data on Financial Variables

Chosen time period → years 2019-2021

Database used: AIDA



In recent years, hotels have suffered from the competition of alternative structures, which have almost doubled and have additionally brought about a one-of-a-kind high-satisfactory of the offer, to the gain of better-high-satisfactory facilities. However, the distinguished position of the lodges remains, which has led us to assess their economic, income, capital and financial performances analyzing the financial statements of numerous companies with turnover exceeding € 100,000. The financial-statement have been taken from the "Aida" database—Computerized Business Analysis (update 268, software version 103.00) (https://aida.bvdinfo.com) of the company Bureau Van Dijk.

A selection of hotels has been made in the provinces of Ferrara, Ravenna, Forlì-Cesena, and Rimini. It was required that the adopted accounting models include either detailed non-consolidated financial statements or abbreviated non-consolidated financial statements with a breakdown of debts and credits for at least one of the selected years. As a result of this selection process, a total of 97 eligible hotels were identified.

Within this list, further screening was necessary, selecting only the companies that provided data on bank debts for the years 2019-2020-2021 and has the balance sheet also for the year 2018. As a final result, the number of analyzable companies becomes 40. Upon analyzing the reviews for various hotels, we discovered that some of them lacked a sufficient number of reviews to create a reliable and representative sample for our analysis. As a result, we had to reduce the number of hotels under consideration to 29. This step was taken to ensure the accuracy and validity of our findings, as a smaller sample size could lead to skewed or unreliable conclusions. By focusing on the 29 hotels with a substantial number of reviews, we aimed to maintain the quality of our analysis and draw meaningful insights from the available data. The data processing was not solely aimed at achieving high statistical significance but rather to identify informative trends useful for analyzing the sector and individual company management. However, it is important to highlight certain limitations of the methodological approach for accuracy.

Firstly, it is worth noting that the first screening of data that involved a large number of companies in the sample corresponded to a high percentage of missing data. It should be considered that within the same year, data may be available for one index but missing for another, resulting in heterogeneity within the dataset. However, it is believed that this would not substantially alter the trend information. Another crucial factor is the absence of companies that ceased their operations during the decade since the Aida database eliminates such companies. Instead, the data includes information from newly established companies alongside those that have been operating for several years. Consequently, the financial statement information may reflect the varying degrees of maturity among different structures.

Identify Key Financial Indicators:

Select financial indicators that are relevant to your analysis. We have three kinds of indicators:

- Economic variables;
- Financial variables;
- Asset metrics.

Economic Variables: Economic variables are significant for this research because they provide critical insights into the performance, development potential, threats, market demand, policy implications, and competitive dynamics of the hotel sector. We specifically chose the criteria below to acquire insights about the company's financial performance, profitability, debt servicing capacity, and asset management. These criteria are critical for measuring the company's overall financial health, as well as

its capacity to earn profits, satisfy debt commitments, and make sound investment or lending decisions.

EBITDA: as a percentage of revenue. EBITDA stands for Earnings Before Interest, Taxes, Depreciation, and Amortization. It is a financial metric used to assess a company's operating performance and profitability by excluding certain non-operating expenses and accounting factors but it is especially a metric for the EBA-LOM.

EBITDA = EBIT + Depreciation + Amortization

EBITDA provides a measure of a company's underlying operational profitability, excluding the effects of interest, taxes, and non-cash expenses such as depreciation and amortization. It is often used as a proxy for cash flow from operations and can be helpful in comparing the financial performance of different companies or assessing the financial health of a company.

YEARS	2021	2020	2019
AVERAGE	€ 658.635,03	€ 395.475,28	€ 533.743,72
MEDIAN	€ 398.246,00	€ 186.261,00	€ 214.980,00
ABOVE PERFORMANCE	6	7	8
BELOW PERFORMANCE	23	22	21

Comment

The economic statements report the fluctuations in call for commonly of their earnings results, which might be notoriously decreased while the monetary sources of travelers are lower. We can notice that the average of EBITDA decreases from year 2019 (€ 533.743,72) to year 2020 (€ 395.475,28). The drop represents a fall in the company's operating profitability before interest, taxes, depreciation, and amortization. Here are some possible explanations for the drop in EBITDA:

- lower operating profitability shows that the company's ability to earn revenue from its main business has worsened, resulting in lower profitability;
- **reduced operational officiency:** a decrease in EBITDA may indicate operational inefficiencies. It could indicate cost-cutting difficulties, diminished sales or pricing power, or difficulties managing expenses associated to production, marketing, or administration;
- changes in industry dynamics, market competitiveness, and economic conditions can all have an impact on EBITDA. A decrease in EBITDA could be the result of adverse industry trends, increased competition, or a broader economic downturn affecting the company's financial performance;
- **pricing or cost pressures:** a decline in EBITDA could be the result of pricing or cost constraints;
- **operational issues:** this could be due to factors such as inefficiencies in production, supply chain disruptions, managerial difficulty, or regulatory changes affecting the company's operations;
- **financial Distress:** if a company's EBITDA falls drastically over time, it may raise concerns about the company's financial health. Consistent EBITDA declines may indicate financial difficulties, potential liquidity challenges, or a high debt burden.

This result was to be expected given the Covid-19 crisis that outboasted in 2020. The pandemic has resulted in a drop in tourist arrivals of more over 233 million, according to preliminary ISTAT figures. Foreign customer contraction was severe (-70.2%), with a substantial impact on our tourist exports: foreign travel expenditure in Italy decreased to 17.45 billion euros in 2020, down from 44.3 billion euros in 2019 (-60.6%).

Hotel overnights in 2020 will be less than half (57%) of what they were the previous year, making hospitality one of the businesses suffering the most. (Italy Hotels & Chains, report 2021 by Horwath HTL). The decline in demand has had a significant impact on operational revenues, which are expected to fall by approximately 60% in 2020, and by more than 80% for some operators. The halt of international and business excursions, fairs and conferences, and the winter season, following the closure of skiing facilities, all had a significant impact on the transformation.

As Adholiya, Yashwant and Albattat write in their research this lockdown severely affected millions of people and economic sectors, Sectors journey, tourism, and hospitality region affected the maximum and nonetheless searching out its revival due to the fact nonetheless journey regulations are on, and travelers or tourist are not preferring to visit tourist destinations because of suspect of its spread from the tourist places [9]. As they state, in order to survive the crisis, most of the hoteliers preferred cutting jobs, reducing salaries, leasing a portion, overburdening of tasks over employees as the most preferable economic balance.

Investor appetite returned in 2021, with investments reaching over €2 billion, which is greater than the seven-year average, and has continued into H1 2022, with €730 million in investments recorded thus far. (Hotel Market Snapshot Italy, PWC) We see this from the EBITDA average that increased up to € 658.635,03. The European Tourism 2021 Summer Results Report, published by the Data Appeal Company, shows Italy performed well. Flight bookings to Italy were up 567% and hotel reservations increased 1091% between April and July 2021 [10-15].

We divided the hotels analyzed into two categories: above performance and below performance. For various reasons, analyzing a company's performance in relation to its industry is critical in research. For starters, it permits benchmarking, which allows a comparison of the company's competitiveness and efficiency to that of its counterparts. Second, it gives information on the overall health and characteristics of the industry or market. Third, this analysis is used by investors to make informed investment decisions. Fourth, it aids in the identification of sector trends, opportunities, and threats. Finally, it makes competitive analysis and identifying major competitors easier. In conclusion, analyzing a company's performance in respect to its industry improves research by offering useful insights for decision-making and strategy formulation. The number of hotels above performance decreases from 2019 to 2020 and slightly increases in 2021. This reflects the analysis made for the EBITDA.

EBITDA/Revenues: the EBITDA/Revenues ratio indicates the operational profitability of a company as a percentage of its total revenue. A higher ratio suggests better operational efficiency and profitability, making it a useful metric for assessing a company's financial health and comparing its performance with peers in the same industry.

YEARS	2021	2020	2019
AVERAGE	€ 18,60	€ 14,14	€ 13,40
MEDIAN	€ 16,44	€ 15,46	€ 10,83
ABOVE PERFORMANCE	12	15	11
BELOW PERFORMANCE	17	14	18

Comment: this index has been increasing in the three years taken into consideration, as well as the number of firms above performance. The reasons can be various but given the period of time we are taking into consideration; we could say that this effect is the result of cost-cutting measures. As we stated above, the COVID-19 crisis had a strong impact on operating costs.

EBIT: as a percentage of revenue. EBIT stands for Earnings Before Interest and Taxes. It is a financial metric that represents a company's operating profit or operating income and like the EBITDA, is a metric for the creditworthiness evaluation in EALOM.

EBIT = Total Revenue - COGS - Selling and Administrative Expenses - Depreciation – Amortization EBIT provides insight into a company's profitability from its core operations before considering interest expenses and taxes. By excluding interest and tax factors, EBIT allows for a clearer understanding of the company's operational performance and profitability.

YEARS	2021	2020	2019
AVERAGE	€ 260.429,76	€ 204.270,69	€ 324.350,52
MEDIAN	€ 215.611,00	€ 103.948,00	€ 114.761,00
ABOVE PERFORMANCE	9	10	5
BELOW PERFORMANCE	20	19	24

Comment: As expected, the hotel industry experienced a decrease in occupancy rates in 2020, and this had a direct impact on its revenues that lead to a lower EBIT.

If the operating expenses of hotels, such as labor, utilities, maintenance, and marketing, rise significantly without a proportional increase in revenue, it can diminish profitability and result in a decline in EBIT. Moreover, thanks to the Italian government and the initiative of the "Superbonus 110%" many hotels made investments in renovations or capital projects to improve their facilities and enhance the guest experience. While these investments have long-term benefits, they can have a temporary impact on EBIT due to the costs involved. However, we can notice that in 2021 the EBIT goes back to a value very close to the one reached in 2019.

Ebit/Revenues: indicates the operating profitability of a company as a percentage of its total revenue. A higher ratio suggests better operating efficiency and profitability, making it a useful metric for assessing a company's financial health and comparing its performance within the industry.

YEARS	2021	2020	2019
AVERAGE	€ 0,10	€ 0,07	€ 0,08
MEDIAN	€ 0,11	€ 0,11	€ 0,07
ABOVE PERFORMANCE	19	19	10
BELOW PERFORMANCE	10	10	19

Comment

Interest Coverage Ratio (ICR) > 2 as a profitability indicator within the Comprehensive Income, to assess profitability. Interest Coverage Ratio is a monetary metric that measures a company's potential to fulfill its financial expenses on its high-quality debt. It is calculated by dividing the company's earnings before interest and taxes (EBIT) by the interest expenses incurred during a specific period. The system for calculating the Interest Coverage Ratio is as follows:

Interest Coverage Ratio = EBIT / Interest Expenses

The resulting ratio indicates how many times the company's earnings can cover its interest expenses. A higher ratio signifies a stronger ability to fulfill interest payments and suggests a lower risk of defaulting on debt obligations. Conversely, a lower ratio indicates a higher risk of default and may raise concerns for lenders and investors. The ICR is the main indicator in creditworthiness evaluation by EBA-LOM.

YEARS	2021	2020	2019
AVERAGE	€ 9,80	€ 10,07	€ 11,81
MEDIAN	€ 8,80	€ 7,03	€ 10,02
ABOVE PERFORMANCE	13	12	11
BELOW PERFORMANCE	16	16	18

Comment: In the hospitality industry, where companies often have significant capital expenditures and debt financing, monitoring the interest coverage ratio is important for investors, lenders, and stakeholders. A healthy interest coverage ratio provides assurance that the company has sufficient earnings to meet its interest obligations and suggests a lower risk of financial distress.

The Italy Hotels Chains report of 2021 states that in 2020, in order to overcome the liquidity crisis generated by the collapse of revenues, companies have resorted to bank credit. Only considering the lodging & restaurant companies - according to the Centro Studi Confindustria the use of bank loans has increased by 8 billion euros in 2020, thanks also to the state guarantees

provided by the Liquidity Decree. If this has ensured the resilience of businesses in the emergency, it also has led to a higher share of bank debt in the total liabilities. Consequently, it is estimated that the years of cash flow needed. Given that some of the value that we calculated were very high making the average less representative we decided to assign a value of 20 to all those hotels that had an ICR>100.

Depreciation to Sales Ratio: The Depreciation/Revenue ratio, also known as the Depreciation to Sales ratio, is a financial metric that indicates the proportion of a company's revenue that is allocated towards depreciation expenses. It is used to assess the efficiency of a company's depreciation practices and understand the impact of depreciation on its profitability.

Depreciation/Revenue ratio = Depreciation Expenses / Total Revenue

A higher Depreciation/Revenue ratio suggests that a larger portion of the company's revenue is being allocated to depreciation expenses. This could indicate a higher level of asset aging or significant investments in fixed assets. It may also suggest that the company is expensing a larger portion of its fixed assets over a shorter period of time.

On the other hand, a lower Depreciation/Revenue ratio indicates a smaller proportion of revenue being utilized for depreciation expenses, which could imply more efficient asset utilization or longer asset lifecycles.
To be calculated.

YEARS	2021	2020	2019
AVERAGE	€ 0,10	€ 0,09	€ 0,06
MEDIAN	€ 0,06	€ 0,06	€ 0,05
ABOVE PERFORMANCE	12	13	12
BELOW PERFORMANCE	16	15	16

Comment: An increase in the depreciation/revenue rate can occur due to several reasons:

- Higher depreciation expenses: If the company has increased its depreciation charges, it could be due to factors such as asset acquisitions, capital expenditures, or changes in accounting policies. This can result in a higher allocation of revenue towards depreciation.
- Changes in asset mix: If the company has shifted its asset mix towards assets with shorter useful lives or higher depreciation rates, it can lead to an increased depreciation/revenue rate.
- Changes in accounting policies: Alterations in accounting policies, such as a change in the useful lives or depreciation methods used for assets, can impact the depreciation/revenue rate. If the company adopts a more conservative approach to depreciation, it may result in higher depreciation expenses relative to revenue. to put in correlation with the investment management.

Ordinary Amortization Rate, which represents the depreciation of the previous year on the previous year's value to assess the extent of depreciation. Those companies in which the amortization rate is not available will be scored as not sustainable.

YEARS	2021	2020	2019
AVERAGE	€ 0,65	€ 0,97	€ 1,23
MEDIAN	€ 0,37	€ 0,43	€ 0,66
ABOVE PERFORMANCE	7	6	11
BELOW PERFORMANCE	21	22	17

Comment: when the ordinary amortization rate decreases, it suggests that a smaller portion of the regular payment is allocated towards reducing the loan's principal balance. This could occur due to various reasons, including:

- Refinancing: If a borrower refinances their loan, they may negotiate new loan terms with a lower amortization rate. This means that a smaller portion of each payment goes towards reducing the principal balance.
- Extension of loan term: If the loan's repayment period is extended, the amortization rate may decrease. Longer loan terms result in smaller monthly payments, and consequently, a smaller portion of each payment is applied to the principal balance.
- Loan modification: In some cases, a borrower may request a loan modification from the lender, which can include changes to the amortization rate. This could be done to temporarily reduce monthly payments or provide financial relief.

Financial Variables: play a crucial role as they provide valuable information about the company's financial health, performance, and prospects. The ones we have selected provide critical information about its financial performance, risk profile, investment potential, financial health, benchmarking, and strategic planning.

Free cash Flow (cash generated from operating activities, which should ideally be positive in hotels). Typically refers to the ability of a company or organization to generate funds internally to meet its financial needs without relying on external sources such as loans or investments. It signifies that the company is able to cover its financial requirements through its own operations and retained earnings.

Net operating result + retained earnings + depreciation +/- net working capital variation.

YEARS	2021	2020	2019
AVERAGE	€ 1.321.113,69	€ 2.714.890,28	€ 158.664,00
MEDIAN	€ 60.651,00	€ 169.355,00	€ 46.152,00
ABOVE PERFORMANCE	6	5	7
BELOW PERFORMANCE	23	24	21

Comment

Asset Metrics: they provide valuable insights into the company's financial health, asset utilization, capital efficiency, risk assessment, industry positioning, and capital allocation decisions.

- •Sustainability → Net Financial Position to EBITDA: By using average values, it would be interesting to obtain sector-specific data at the national level from the database being used. The ratio provides insights into a company's financial stability and its ability to cover its debt obligations. A lower ratio indicates a healthier financial position, suggesting that the company has sufficient earnings to cover its debt obligations. Conversely, a higher ratio may indicate higher financial leverage and potentially higher risk, as the company may have limited earnings relative to its debt burden.

(Financial asset – financial liabilities)/EBITDA

YEARS	2021	2020	2019
AVERAGE	€ 4,53	€ 6,04	€ 2,28
MEDIAN	€ 1,14	€ 1,87	€ 0,61
ABOVE PERFORMANCE	10	9	11
BELOW PERFORMANCE	18	19	18

Comment: from year 2019 to 2020 we see that there is an increase in the index.

Here are some possible reasons:

- Cost control measures: effective cost management plays a crucial role in enhancing a hotel's financial position. By implementing cost control measures such as optimizing operational expenses, negotiating better contracts with suppliers, and implementing energy-efficient practices, hotels can improve their profitability and generate more cash. This, in turn, can contribute to an increase in the net financial position to EBITDA ratio.
- Debt reduction: If a hotel company focuses on reducing its debt burden, it can improve its net financial position. By paying down debt or refinancing at more favorable terms, hotels can lower their interest expenses and improve their cash flow.
- Capital investments: strategic capital investments can also drive an increase in the net financial position to EBITDA ratio in the hotel industry. By investing in renovations, upgrades, and expansion projects, hotels can enhance their competitive position, attract more customers, and generate higher revenue. These investments can lead to improved financial performance and ultimately contribute to a higher net financial position. From year 2020 to 2021 we notice a decrease due to the economic downturn of the COVID-19 crisis.

Debt-to-Equity Ratio: -Debt-to-Equity Ratio: The debt-to-fairness ratio is a economic metric that compares a company's overall debt to its shareholders' fairness. It provides insights into the company's capital structure and the proportion of financing that comes from debt versus equity.

The formula to calculate the debt-to-equity ratio is as follows:
Debt-to-Equity Ratio = Total Debt / Shareholders' Equity
Given.

YEARS	2021	2020	2019
AVERAGE	€ 1,08	€ 0,78	€ 1,26
MEDIAN	€ 0,42	€ 0,65	€ 0,33
ABOVE PERFORMANCE	3	11	5
BELOW PERFORMANCE	25	17	23

Comment: the table shows a decrease from year 2019. Here are some potential explanations:

- Debt Repayment: The company may have focused on paying off its existing debt obligations, thereby reducing its overall debt levels. This could be a strategic decision to improve financial stability and reduce interest expenses.
- Equity Infusion: The company might have raised additional equity capital by issuing new shares or attracting new investors. This injection of equity would increase the denominator in the debt-to-equity ratio, resulting in a decrease.
- Asset Sales: The hospitality industry often involves owning and managing physical properties. If a company sells off some of its assets, it can generate cash to pay down debt. This reduction in debt would lower the numerator in the debt-to-equity ratio.
- Improved Financial Performance: If the company experiences improved profitability and generates strong cash flows, it can use the excess funds to reduce its debt burden. This could result from various factors, such as increased occupancy rates, effective cost management, or successful marketing strategies.
- Debt Restructuring: The company may have renegotiated its debt terms with lenders, obtaining more favorable conditions. For example, it could have extended the repayment period, obtained lower interest rates, or converted debt into equity. These actions would lower the debt portion and consequently decrease the debt-to-equity ratio.
- Industry Consolidation: In the hospitality industry, mergers and acquisitions are common. If a company acquires another firm, it may finance the deal through equity issuance or a combination of equity and debt. This would increase the equity portion, resulting in a decrease in the debt-to-equity ratio.

Capital Intensity Ratio: is a financial metric that measures the level of capital investment required to generate revenue or sales for a company. It provides insights into the efficiency of a company's capital utilization and the extent to which it relies on capital assets in its operations.

CIR: 1 / turnover ratio on investment capital To be calculated.

YEARS	2021	2020	2019
AVERAGE	€ 3,59	€ 4,84	€ 2,22
MEDIAN	€ 2,94	€ 4,17	€ 1,12
ABOVE PERFORMANCE	12	13	9
BELOW PERFORMANCE	17	16	19

Comment: The increase of 2020 in the capital intensity ratio in the hospitality industry can be attributed to various factors:

- **Infrastructure Development:** hospitality businesses often require substantial capital investments in infrastructure, including the construction or renovation of hotels, resorts, restaurants, and other facilities. If there is a surge in infrastructure development within the industry, it can lead to an increase in the capital intensity ratio.
- **Quality Upgrades:** maintaining high-quality standards is essential in the hospitality industry to attract and retain customers. Businesses may need to invest in upgrading facilities, furnishings, amenities, and equipment to meet or exceed customer expectations. Such investments can result in an increased capital intensity ratio.
- **Regulatory Compliance:** compliance with safety, health, and environmental regulations can require hospitality businesses to make capital investments. This could include measures like implementing energy-efficient systems, installing fire safety equipment, or upgrading infrastructure to meet accessibility standards. Compliance-related investments can contribute to a higher capital intensity ratio.

The decrease of 2021 could be caused by:

- **Operational Efficiency:** companies in the hospitality industry might focus on improving operational efficiency to reduce their capital requirements. This can be achieved through process optimization, better inventory management, streamlined staffing, and implementing cost-saving measures. By maximizing the utilization of existing resources, companies can lower their capital investment needs, leading to a decrease in the capital intensity ratio.
- **Asset Light Strategies:** some hospitality companies adopt an asset light strategy, where they focus on branding, marketing, and customer service while minimizing ownership of physical assets. Through franchising, management contracts, or lease agreements, companies can expand their presence without significant capital investments in property acquisition or construction.

Net Financial Position: refers to the discrepancy between a firm's financial assets and liabilities. It represents the net amount of funds that a company has either borrowed or invested in financial markets. A positive net financing position indicates that a company has more financial assets than financial liabilities. This suggests that the company has excess funds available for investment or to repay debts. On the other hand, a negative net financing position indicates that a company has more financial liabilities than financial assets, which may indicate a reliance on borrowing or financing activities to meet its obligations.

YEARS	2021	2020	2019
AVERAGE	€ 2.617.849,72	€ 3.163.118,41	€ 3.115.946,07
MEDIAN	€ 350.248,00	€ 454.102,00	€ 64.739,00
ABOVE PERFORMANCE	8	7	7
BELOW PERFORMANCE	21	22	22

Comment

- A decrease in the net financing position in the hospitality industry can be attributed to several factors. Here are some possible reasons:
- **Debt Repayment:** Companies in the hospitality industry may focus on reducing their debt levels by actively repaying existing loans and obligations. By decreasing their outstanding debt, the net financing position decreases as well. Debt repayment can be driven by a desire to improve financial stability, reduce interest expenses, or enhance creditworthiness.
- **Improved Cash Flow Management:** Effective cash flow management practices, such as optimizing revenue streams, controlling expenses, and implementing stringent financial controls, can lead to increased cash generation within the business. As a result, companies can use surplus cash to pay off debt or reduce their reliance on external financing, leading to a decrease in the net financing position.
- **Equity Infusion:** Hospitality companies may attract additional equity investments, either through issuing new shares or securing investments from new or existing shareholders. Infusing equity into the business can provide funds to meet financial obligations, reduce debt, or finance expansion plans. A higher equity infusion decreases the net financing position by reducing the reliance on external debt.
- **Asset Sales:** Selling off assets, such as properties, real estate holdings, or non-core business units, can generate cash inflows that can be used to pay down debt or reduce financing needs. By divesting underperforming or non-strategic assets, companies can improve their financial position and decrease the net financing position.
- **Improved Profitability:** Strong financial performance, including increased revenues, higher profit margins, and improved operational efficiency, can enhance a company's ability to generate internal funds. Improved profitability provides companies with additional resources to reduce debt and decrease their reliance on external financing, resulting in a decrease in the net financing position.
- **Restructuring and Cost-cutting Measures:** Implementing strategic restructuring initiatives, such as downsizing, streamlining operations, or renegotiating contracts, can lead to cost reductions and efficiency improvements. These measures can free up funds, reduce financing needs, and contribute to a decrease in the net financing position.
- **Favorable Financing Terms:** Companies that have renegotiated their financing terms with lenders, obtaining better interest rates, extended repayment periods, or more flexible terms, may experience a decrease in their net financing position. Improved financing terms can reduce interest expenses and ease the financial burden, leading to a decrease in the net financing position.

Determine Customer Perception Metrics

Identify the metrics that capture customer perception.

Non-Financial Variables: Obtained through reviews on TripAdvisor and Booking.

- Economic Sustainability.
- Customer Satisfaction: can be measured through surveys, customer feedback, or customer loyalty indicators.
- Service Quality: can include indicators such as defect rates or conformity to quality standards.
- Corporate Reputation: can be measured through reputation surveys or brand awareness indicators.

Hotel Analysis

Objective

The aim of the analysis is to determine possible determinants derived from qualitative data such as online reviews that could explain the economic performance of a sample of 42 hotels.

Data Collection

The analysis was conducted by extracting between 300 and 500 reviews per hotel from the review site "TripAdvisor." These reviews were obtained using a custom tool. The process followed is as follows:

Library Imports: The first lines of the script import various R libraries used for different operations including data collection and processing. Libraries include rvest, dplyr, stringr, tm, ggplot2, sentix, openxlsx, and writexl.

Review Collection Function (Scrape_Reviews): This function collects reviews from a given TripAdvisor URL using the rvest library for web scraping. It extracts both review titles and review texts from the webpage. As the number of titles and reviews might not match, the function adjusts the vector lengths accordingly.

Review Preprocessing Function (Preprocess_Reviews): This function preprocesses the collected review texts by:

- Removing HTML tags and other unnecessary elements.
- Converting text to lowercase.
- Removing punctuation, numbers, and whitespace to clean the text.

Main Web Scraping Function (scrape_tripadvisor_reviews): This function collects reviews from multiple TripAdvisor pages by:

- Initializing an empty list all_reviews to store reviews from different pages.
- Iterating through TripAdvisor pages using a for loop, constructing the URL for each page based on the page number.
- Using the scrape_reviews function to collect reviews from each page and adding them to all_reviews.
- Combining all collected reviews into a single dataframe and preprocessing them using preprocess_reviews.
- Exporting the resulting dataframe to an Excel file specified by the output_file variable.

Parameter Settings: Variables tripadvisor_base_url, num_pages, and output_file specify the TripAdvisor URL to collect reviews from, the number of pages to examine, and the path of the Excel file to save the reviews, respectively.

Execution of Scraping: After defining the functions and setting the parameters, the script calls the scrape_tripadvisor_reviews function with specified parameters to perform the web scraping of reviews, process them, and save them to an Excel file.

Hotel Sample and Variables

The hotels considered range from 3-star to 5-star superior, located in the Romagna Riviera area. Elements considered for model construction include:

- Number of stars
- Staff rating
- Service rating
- Cleanliness rating
- Average room price (estimated from various publicly available prices)
- Length of the review
- Readability of the review (estimated using the Gulpease index, which evaluates the complexity of a text in Italian based on word and sentence length, with higher scores indicating simpler texts. The index ranges from 0 to 100).
- Revenues for the years 2019-2022 (obtained from consolidated financial statements)
- Net financial position for the years 2019-2022 (obtained from consolidated financial statements)

Data Processing

The review text length and readability were processed using R Studio as follows:

Library Imports: The script imports several R libraries including dplyr, tidytext, tm, tidyverse, tidyr, readxl, openxlsx, and quanteda.

Encoding Setup: Sys.setlocale(locale = "it_IT.UTF-8") sets the encoding to "ISO-8859-1" for Italian, ensuring correct reading of text in the Excel file.

Reading Excel File: The read_excel function from the readxl library reads the Excel file content into a dataframe reviews.

Corpus Creation: corp_reviews <- corpus (reviews, text_field = "review") converts the dataframe into a corpus using the quanteda library to prepare the text for analysis.

Tokenization: toks_reviews <- quanteda::tokens (corp_reviews, ...) tokenizes the text, splitting each review into words and removing numbers, punctuation, symbols, and more.

Document-Feature Matrix (DFM) Creation: dfmat_reviews <- dfm(toks_reviews) creates a DFM representing the frequency of words in the reviews.

Gulpease Index Calculation: The calculate_gulpease function calculates the Gulpease index for each review. This function is applied to each review in the reviews dataframe, with results stored in the RevLength and Gulpease columns of each hotel's Excel file.

Model Construction and Results

After organizing the data, a plot was constructed to relate all variables and provide a comprehensive view of the phenomenon and various correlations. The plot indicates the following:

- Revenues in 2020 are highly correlated with revenues in 2019. Additionally, the net financial position in 2019, the number of stars, and the readability of reviews are slightly correlated with revenues in 2020.
- The three ratings (cleanliness, service, and staff) are highly correlated among themselves, and cleanliness and service ratings are slightly correlated with the average room price.
- The average room price is highly correlated with the number of stars.
- A simple linear model (one dependent variable with one independent variable) was constructed. Subsequently, a model with significant elements for determining revenues for the hotels considered was developed.

Regression Results

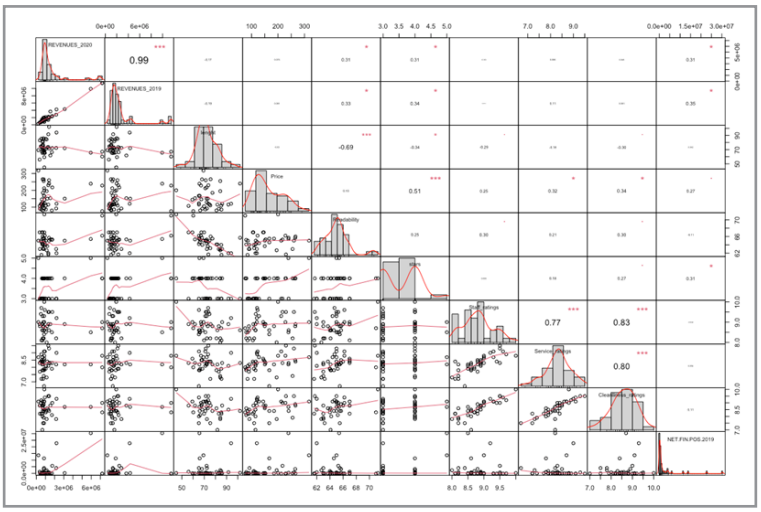
The model relates 2020 revenues with text readability, the number of stars, and the net financial position, yielding the following results:

Dependent variable	REVENUES_2020
Readability	249,234.000** (118,867.100)
Stars	369,573.300 (428,328.000)
NET.FIN.POS.2019	0.078* (0.039)
Constant	-16,272,817.000** (7,420,273.000)

Observations
42
R2: 0.233
Adjusted R2: 0.173
Residual Std. Error: 1,463,198.000 (df = 38)
F Statistic: 3.853** (df = 3; 38)

Considerations
- Financial data are not fully representative of the specific operations of the hotels as they are derived from consolidated financial statements rather than clean data. For more accurate future analysis, it would be advisable to use RevPAR (Revenue per available room).
- The sample size of hotels is not sufficient to definitively validate the model.

This analysis can serve as an initial reference for future studies in the hospitality market.



From the graph, the following observations can be made:
1. 1revenues for 2020 are highly correlated with revenues for 2019. Additionally, the Net Financial Position for 2019, the number of stars, and the readability of reviews are slightly correlated with revenues for 2020;
2. the three ratings (cleanliness, service, and staff) are highly correlated with each other. Moreover, the ratings for cleanliness and service are slightly correlated with the average price per room;
3. the average price per room is highly correlated with the number of stars;
4. This graph, however, accounts for the construction of a simple linear model (one dependent variable with one independent variable).

Subsequently, we constructed a model with significant elements for determining the revenues for the hotels considered.
The model relates the revenues for 2020 with text readability, the number of stars, and the net financial position. The results are as follows:

Regression Results
- Dependent Variable
- REVENUES_2020

Variable	Coefficient	Std. Error
Readability	249,234.000**	(118,867.100)
Stars	369,573.300	(428,328.000)
NET.FIN.POS.2019	0.078*	(0.039)
Constant	-16,272,817.000**	(7,420,273.000)

- Observations: 42
- R^2: 0.233
- Adjusted R^2: 0.173
- Residual Std. Error: 1,463,198.000 (df = 38)
- F Statistic: 3.853** (df = 3; 38)

The model explains 17% of the phenomenon, with text readability and the net financial position being significant variables.

Several Elements Must be Considered when Interpreting these Results:
- the financial data is not fully representative of the specific operations of the hotels, as consolidated financial statements were used instead of clean data. For a more accurate future analysis, the use of RevPAR (Revenue per Available Room) is suggested:

- RevPAR=Total Hotel RevenueTotal Number of Available RoomsRevPAR=Total Number of Available Rooms Total Hotel Revenue;
- the number of hotels considered was not sufficient to accurately validate the model with certainty.
- Nevertheless, this analysis can serve as an initial basis for future studies in the hospitality market.

Conclusions

The application of qualitative elements to quantitative variables (annual financial statements) for a number of homogeneous hotel enterprises by district has revealed that there are no robust statistical correlations between the ratings expressed on TripAdvisor and the economic-financial performance of the enterprises considered. This could pose a problem for banks financing businesses in this sector, as the application of ESG factors is equally difficult, if not impossible. The hotel tourism sector is particularly opaque regarding its performance. While it can be stated with some certainty that it does not pollute, the same cannot be said for the quality of work performed internally, the relationships with workers, and their fair treatment. All these factors are difficult for a bank to analyze except ex-post and never preventively at the initial lending stage. Given that tourism represents 13% of the Italian GDP, this issue certainly requires further investigation and study for its full understanding, as well as to address the problem faced by banks, and not only them, in applying ESG criteria.

To do Agenda

- Analyze whether there are consistent patterns or trends that demonstrate a strong influence of financial performance on customer perception.
- Discuss possible reasons for any discrepancies between financial performance and customer perception.
- Highlight the implications of the study's findings for hotel management and strategies to improve both financial performance and customer perception.

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