

*Research Article*

# From Crisis to Recovery: Financial Performance Transformation in Tourism Sector

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**Abstract:** This study aims to analyze and compare the financial performance of tourism sector companies before and after the COVID-19 pandemic. The tourism sector experienced a severe decline due to travel restrictions, mobility limitations, and reduced tourist demand, which directly affected company revenues and financial stability. This research focuses on tourism companies listed on the Indonesia Stock Exchange (IDX) by comparing the pre-pandemic period (2018–2019) and the post-pandemic period (2022–2023). Financial performance is measured using liquidity ratios (Current Ratio), solvency ratios (Debt to Equity Ratio), profitability ratios (Return on Assets), activity ratios (Total Asset Turnover), and market performance ratios (Market-to-Book). The analysis uses descriptive statistics and difference tests, including paired sample t-tests and Wilcoxon signed-rank tests based on data normality. The results show significant differences in all observed financial ratios between the two periods. Liquidity, profitability, activity, and market performance declined after the pandemic, while leverage increased, indicating higher reliance on debt during the recovery period. These findings confirm that the financial recovery of the tourism sector remains gradual and uneven.

**Keywords:** Comparative Study; COVID-19; Financial Performance; Financial Ratios; Tourism Sector.

## 1. Introduction

The COVID-19 pandemic has been a global shock that has significantly impacted nearly all economic sectors, with the tourism sector being one of the most directly and profoundly affected. The tourism industry, which had become one of the most important sectors in the world economy accounting for approximately 10 percent of global GDP and supporting more than 320 million jobs worldwide before the pandemic (United Nations World Tourism Organization [UNWTO], 2020), experienced unprecedented disruptions. Mobility restrictions, border closures, and quarantine policies have led to a drastic decline in international and domestic tourist flows, leading to reduced revenues, cash flow pressures, and an increased risk of bankruptcy for tourism companies (Gössling et al., 2021). The coronavirus pandemic caused a 72% decline in international tourist arrivals in 2020 and 71% in 2021, compared to 2019, representing a loss of 2.1 billion international arrivals in both years combined (UNWTO, 2022). Global studies confirm that the COVID-19 pandemic has caused a severe contraction in the operational and financial performance of the tourism industry, surpassing the 2008 global financial crisis (Škare et al., 2021).

Financially, the pandemic's impact was reflected in the deteriorating profitability, liquidity, and solvency ratios of tourism companies in various countries. Research by Shen et al. (2020) demonstrated that tourism and hospitality companies experienced significant declines in Return on Assets (ROA) and Net Profit Margin (NPM) due to demand disruptions and operational restrictions. The hospitality and entertainment industry had lost more than 70% of its market capitalization in the United States by March 2020, as indicated by the S&P1500 stock indices (Mazur et al., 2021). Similar findings were presented by Hu and Zhang (2021), who stated that tourism sector companies experienced higher levels of financial vulnerability than other sectors during the pandemic. A study on Indonesian tourism companies listed on

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the Indonesia Stock Exchange revealed that tourism stock prices were negatively and significantly affected by COVID-19, with approximately 84% of tourism stocks showing significant differences in average stock returns during the five trading days before and after the pandemic announcement (Ardiansyah et al., 2022). The economic impact of the global pandemic on the tourism economy severely affected both developed and developing countries, with financial losses, reduction in customer demand, and disruptions in logistics and distribution channels being widely reported (Al-Awadhi et al., 2021; Kaushal & Srivastava, 2021).

The urgency of this research increases as the tourism sector begins to enter the post-pandemic phase, marked by the easing of travel restrictions, government stimulus policies, and a resurgence in tourism demand. This phase is crucial to analyze because it reflects a company's ability to recover financially and adapt to new economic conditions (Sigala, 2020). International tourism saw stronger than expected results in 2022, backed by large pent-up demand and the lifting or relaxation of travel restrictions, with over 900 million tourists traveling internationally—double those in 2021 though still 37% fewer than in 2019 (UNWTO, 2023). The OECD Tourism Trends and Policies 2024 report highlights the sector's continued recovery from the COVID-19 pandemic, with international tourist arrivals in 2023 exceeding pre-pandemic levels in many countries, and tourism's direct contribution to GDP bouncing back to 3.9% in 2022 (Organisation for Economic Co-operation and Development [OECD], 2024). However, most previous research has focused on comparisons before and during the pandemic, resulting in relatively limited empirical understanding of post-pandemic financial performance. Studies on Indonesian tourism companies have primarily examined the immediate pandemic period (Amalia et al., 2021; Pramana et al., 2021), creating a gap in understanding the financial recovery trajectory of tourism companies in the post-pandemic era.

## 2. Literature Review

### Financial Performance and Ratio Analysis in the Tourism Sector

Financial performance is a key indicator for assessing a company's health and sustainability, particularly in the tourism sector, which is highly sensitive to external shocks (Ritchie & Jiang, 2021). Theoretically, financial performance is measured through ratio analysis, which includes liquidity, solvency, profitability, and activity ratios (Brigham & Ehrhardt, 2020). Financial ratios serve as fundamental tools for evaluating corporate health, enabling stakeholders to assess operational efficiency, risk management capabilities, and profit generation potential (Radivojević et al., 2023). In the tourism context, ratio analysis is used to capture a company's ability to maintain operations, manage risk, and generate profits in a dynamic environment, given the sector's unique characteristics of high fixed costs and sensitivity to demand fluctuations (Lima Santos et al., 2021).

Empirical research before the pandemic showed that profitability and operational efficiency were key determinants of tourism company value (Assaf & Tsionas, 2019). Studies demonstrated that Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) serve as critical indicators of tourism firm performance, reflecting management's effectiveness in utilizing resources to generate returns (Uyar et al., 2020). However, the high fixed cost structure makes the sector vulnerable to sudden declines in demand, as tourism companies must maintain substantial investments in infrastructure, personnel, and marketing regardless of occupancy levels (Song et al., 2021). The leverage ratio, measured by Debt to Equity Ratio (DER), has been identified as a crucial indicator of financial risk in the hospitality industry, with higher leverage indicating greater vulnerability during periods of revenue decline (Crespí-Cladera et al., 2021).

### Impact of the Crisis and Pandemic on Tourism Financial Performance

Crisis literature demonstrates that extraordinary events such as the global financial crisis or pandemics have a direct impact on the financial performance of the service sector, particularly tourism (Ritchie & Jiang, 2021). The tourism and hospitality industry is highly vulnerable to environmental, political, and socioeconomic factors, having been widely studied in the past because of various political crises, wars, natural disasters, and pandemics (Bhaskara & Filimonau, 2021). The COVID-19 pandemic exacerbated this situation by almost completely halting global mobility and tourism activities, with unprecedented global travel restrictions and stay-at-home orders causing the most severe disruption of the global economy since World War II (Gössling et al., 2021).

Several Scopus and Web of Science indexed studies have found that during the COVID-19 pandemic, there was a significant decline in Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) of tourism companies in various countries (Shen et al., 2020; Hu & Zhang, 2021). The hospitality and entertainment industry had lost more than 70% of its market capitalization in the United States by March 2020, as indicated by the S&P1500 stock indices (Mazur et al., 2021). Research on Indonesian tourism companies listed on the Indonesia Stock Exchange revealed significant differences in liquidity ratios before and during the pandemic, with companies experiencing substantial declines in profitability measures (Kristiana et al., 2021). Furthermore, liquidity pressures increased due to reduced operational cash flow and limited access to financing, with many firms facing heightened risks of financial distress (Ozili & Arun, 2020). Studies utilizing the Altman Z-score model demonstrated that tourism companies exhibited significantly higher bankruptcy risk during the pandemic compared to pre-pandemic periods (Strouhal et al., 2024).

The economic impact of the pandemic on the tourism sector was unprecedented in scope and severity. According to the World Travel and Tourism Council (WTTC, 2021), the contribution of the global travel and tourism sector to world output suffered a precipitous decline, with its share of global GDP halving from around 10.5% in 2019 to 5.5% in 2020, resulting in a job loss of 62 million globally. The International Monetary Fund (IMF, 2021) documented that tourism-dependent economies experienced significantly deeper contractions than the global average, with some small island economies projected to shrink by more than 16%. These findings underscore the sector's heightened vulnerability to demand shocks and the critical importance of financial resilience during crisis periods (Khalid et al., 2022).

### **Comparison of Financial Performance Before, During, and After the Pandemic**

Comparative research has become the dominant approach in analyzing the impact of the pandemic on tourism financial performance. Studies by Shen et al. (2020) and Fu and Shen (2020) used a pre-pandemic and during-pandemic approach and found significant differences in profitability and solvency ratios. Research employing paired sample t-tests and Wilcoxon signed-rank tests consistently demonstrated deterioration in key financial metrics including Current Ratio, ROA, ROE, and Total Asset Turnover (TATO) during the pandemic period (Amalia et al., 2021). However, this approach is considered insufficient to fully reflect the recovery in financial performance, as it fails to capture the dynamic nature of post-pandemic adjustment.

Research that has begun to incorporate the post-pandemic period is still limited but growing. Chen et al. (2023) showed that despite revenue recovery, the financial performance of tourism companies has not fully returned to pre-pandemic levels due to financing restrictions and changes in consumer behavior. A comprehensive study using the Difference-in-Difference methodology found that non-tourism entities experienced a 19% lower likelihood of bankruptcy post-pandemic compared to tourism firms, highlighting the sector's prolonged financial vulnerability (Strouhal et al., 2024). The OECD Tourism Trends and Policies 2024 report documented that tourism's direct contribution to GDP bounced back to 3.9% in 2022 in OECD countries, still half a percentage point below 2019 levels, indicating incomplete financial recovery (OECD, 2024). Other studies emphasize that financial recovery is heterogeneous across subsectors and is heavily influenced by companies' adaptation strategies, with firms demonstrating greater organizational resilience showing faster recovery trajectories (Köseoglu et al., 2022; Li et al., 2023).

International tourism data from UNWTO (2024) indicates that while international arrivals reached 97% of pre-pandemic levels in the first quarter of 2024 and tourism receipts recovered to USD 1.5 trillion in 2023, the financial health of individual tourism companies varies significantly depending on factors such as firm size, geographic location, and business model adaptation (UNWTO, 2024). Research on ASEAN tourism firms revealed that larger firms with diversified funding sources maintained lower Debt-to-Asset Ratios and demonstrated greater financial resilience during the recovery period (Aydogan et al., 2024).

### **Analysis Methods in Tourism Financial Performance Studies**

Most studies use financial ratio analysis combined with the paired sample t-test or the Wilcoxon signed-rank test to compare two periods (Hu & Zhang, 2021; Amalia et al., 2021). This method is effective for testing simple statistical differences, capturing whether significant changes occurred in financial metrics between pre-pandemic and pandemic periods. However,

it has limitations in capturing long-term dynamics and the complex interplay of factors affecting post-pandemic recovery (Nurwitasari et al., 2023).

More recent research has begun to use panel data regression, difference-in-difference, and trend analysis to examine post-pandemic performance recovery (Strouhal et al., 2024; Li et al., 2023). The difference-in-difference approach is particularly valuable for establishing causal connections between the pandemic and financial outcomes by comparing tourism firms against control groups from other sectors (Strouhal et al., 2024). These methods allow for a more comprehensive analysis of structural changes and the influence of external factors, including government policy interventions, changes in consumer behavior, and macroeconomic conditions. Research employing configurational methods such as fuzzy-set Qualitative Comparative Analysis (fsQCA) has emerged to examine how combinations of operational and financial conditions shape firm survival or decline during crises (Aydogan et al., 2024). Additionally, studies have incorporated the Altman Z-score and similar financial distress prediction models to assess bankruptcy risk in tourism firms during different phases of the pandemic (Crespí-Cladera et al., 2021).

### Research Gap and Research Position

Based on the literature review, three main research gaps remain. First, there is a predominance of studies that only compare before and during the pandemic, without adequately including the post-pandemic period (2022-2023 and beyond). While international tourism has largely recovered to pre-pandemic levels by 2024 (UNWTO, 2024), the financial performance of individual tourism companies, particularly in emerging markets like Indonesia, requires further empirical investigation. Second, there is limited use of analytical methods capable of capturing the dynamics of financial performance recovery, with most studies relying on simple comparative statistics rather than more sophisticated longitudinal approaches. Third, there is a lack of integration of financial performance theory with the context of crisis and recovery specific to the tourism sector, particularly regarding how different financial ratios interact during recovery phases (Ritchie & Jiang, 2021).

Therefore, this study positions itself to fill this gap by conducting a comparative study of the financial performance of the tourism sector before and after the COVID-19 pandemic using a more comprehensive financial ratio analysis and a post-pandemic observation period (2022-2023). By focusing on tourism companies listed on the Indonesia Stock Exchange (IDX) and employing both parametric (paired sample t-test) and non-parametric (Wilcoxon signed-rank test) methods, this research contributes to the empirical understanding of post-pandemic financial recovery in an emerging market context.

## 3. Proposed Method

### Approach and Rationale

The study employed a mixed-methods research design with an explanatory sequential approach, wherein a quantitative phase is conducted first to measure changes in financial performance, followed by a qualitative phase to explain recovery mechanisms and strategies (Creswell & Creswell, 2022). This sequential explanatory design is particularly suitable when numerical findings need to be enriched with managerial and contextual insights to provide a comprehensive understanding of the phenomenon under investigation (Molina-Azorín & Font, 2021). The mixed-methods approach has gained significant traction in tourism and hospitality research, with studies demonstrating its effectiveness in addressing complex research questions that cannot be adequately answered by either quantitative or qualitative methods alone (Truong et al., 2020). According to a systematic review of mixed methods research in tourism and hospitality journals, sequential designs are prevalent in the majority of cases (94.2%), as they allow researchers to first establish patterns through quantitative analysis and then develop deeper understanding through qualitative exploration (Azer et al., 2022).

The rationale for selecting this approach is grounded in the pragmatic paradigm, which acknowledges that both quantitative and qualitative methods offer distinct advantages for understanding multifaceted phenomena such as post-pandemic financial recovery (Baksi & Sanyal, 2024). The quantitative phase provides statistical evidence of changes in financial performance, while the qualitative phase offers explanatory insights into the mechanisms driving these changes, thereby addressing both the "what" and the "why" of financial performance dynamics (Christou et al., 2023).

## Design and Sample

The population for this study consists of tourism subsector companies listed on the Indonesia Stock Exchange (IDX) with complete financial reports for the period 2018–2023. According to established panel data analysis protocols in tourism research, the selection of companies with consistent reporting across the observation period ensures data reliability and enables meaningful before-after comparisons (Seetaram & Petit, 2021). The sample comprises all companies meeting the specified criteria, forming a balanced panel dataset. The target sample size is  $n \geq 30$  entities, as larger sample sizes are preferable for panel data analysis to ensure adequate statistical power and generalizability of findings (Ozdemir et al., 2023). Purposive sampling technique was applied to select companies based on specific criteria: (1) listed on the IDX in the tourism subsector; (2) published complete audited financial statements throughout the observation period; (3) actively traded during both pre-pandemic and post-pandemic periods (Amalia et al., 2021).

## Quantitative Data Collection

Data sources include audited financial reports (annual reports) obtained from the IDX database and company websites, market data (stock prices) from financial information platforms, and macroeconomic control variables (GDP, mobility index) from official statistical sources such as Statistics Indonesia (BPS) and the World Bank (Radivojević et al., 2023). The observation period encompasses the pre-pandemic period (2018–2019) versus the post-pandemic period (2022–2023), with intermediate observations (2020–2021) included for trend control purposes. This periodization approach aligns with established practices in tourism financial performance studies, allowing for meaningful comparisons that account for the pandemic's impact trajectory (Strouhal et al., 2024).

## Quantitative Analysis

The quantitative analysis procedure follows a systematic approach beginning with descriptive statistics and normality testing using the Shapiro-Wilk test to determine the appropriate statistical method for hypothesis testing (Kim et al., 2021). Descriptive statistics provide an overview of central tendency and dispersion measures for each financial ratio across the observation periods.

For paired comparison tests, the paired sample t-test is employed when data satisfy normality assumptions, or the Wilcoxon signed-rank test when normality cannot be confirmed, to examine changes in mean ratios between pre-pandemic and post-pandemic periods (Rosner & Glynn, 2021). The paired t-test equation is expressed as:

$$t = \bar{d} / (sd / \sqrt{n})$$

Where  $\bar{d}$  = mean of differences,  $sd$  = standard deviation of differences, and  $n$  = number of entities.

The Wilcoxon signed-rank test serves as a non-parametric alternative when data are not normally distributed or contain outliers, comparing median differences between paired observations rather than means (Field, 2023). This approach has been widely adopted in tourism and hospitality financial performance research, particularly for studies comparing before-after conditions across the same entities (Kristiana et al., 2021).

Panel data regression with Fixed Effects (FE) model is employed to control for entity-specific and time heterogeneity, as specified:

$$Y_{it} = \alpha + \beta Postt + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

Where  $Postt$  = post-period indicator,  $X_{it}$  = control variables,  $\mu_i$  = entity fixed effects, and  $\lambda_t$  = time fixed effects. The fixed effects specification is preferred when unobserved individual heterogeneity is correlated with independent variables, which is common in firm-level financial data (Ozdemir et al., 2023). The Hausman test is conducted to determine the choice between fixed effects and random effects models (Wooldridge, 2021).

Furthermore, the Difference-in-Difference (DiD) approach is applied when a control group (e.g., less impacted subsector) is available for causal estimation:

$$Y_{it} = \alpha + \tau(Treat_i \times Postt) + \delta Treat_i + \theta Postt + X_{it} + \epsilon_{it}$$

Where  $\tau$  represents the average treatment effect (ATE). This method has been increasingly employed in tourism research to establish causal connections between external shocks and financial outcomes, providing robust estimates that account for parallel trends and time-invariant confounding factors (Strouhal et al., 2024; Callaway & Sant'Anna, 2021).

### Qualitative Data Collection

The qualitative phase employs semi-structured interviews with 8–12 financial managers or CEOs of sample companies, selected through purposive sampling to ensure participants possess relevant knowledge and experience regarding financial management during the pandemic and recovery periods (Çakar & Aykol, 2021). Interview protocols are developed based on the quantitative findings to explore themes such as liquidity management strategies, debt restructuring decisions, and revenue diversification initiatives (Filimonau et al., 2023). Triangulation is achieved through the incorporation of internal company documents and industry reports to enhance the credibility and validity of qualitative findings (Fuchs, 2023).

### Qualitative Analysis

Thematic analysis is applied to analyze qualitative data following the six-phase approach outlined by Braun and Clarke (2022): (1) familiarization with data; (2) generating initial codes; (3) searching for themes; (4) reviewing themes; (5) defining and naming themes; and (6) producing the report. This analytical framework enables systematic identification of patterns related to financial recovery strategies, including liquidity management approaches, debt restructuring mechanisms, and revenue diversification efforts (Christou et al., 2023). The thematic analysis approach is particularly suitable for tourism and hospitality research as it allows researchers to capture the complexity of managerial decision-making while maintaining analytical rigor (Naeem et al., 2023). Qualitative results are used to explain and contextualize quantitative findings, providing a comprehensive understanding of the financial recovery process.

### Integration of Findings

The integration phase combines (triangulates) quantitative and qualitative results, where quantitative analysis demonstrates "what" has changed in financial performance indicators, and qualitative analysis explains "why" and "how" these changes occurred (Creswell & Creswell, 2022). This integration is achieved through a joint display matrix that visually represents the convergence or divergence between quantitative and qualitative findings (Guetterman et al., 2021). The mixed-methods integration allows for meta-inferences that transcend individual method limitations, providing more robust and nuanced conclusions about post-pandemic financial recovery in the tourism sector (Molina-Azorín & Font, 2021).

### Hypothesis (Quantitative Phase)

Based on the literature review and research objectives, the following two-tailed hypotheses are formulated for the quantitative phase:

**H1:** There is a significant difference in liquidity of tourism companies between the pre- and post-pandemic periods. This hypothesis is supported by prior research indicating that tourism companies experienced substantial liquidity pressures during the pandemic due to revenue declines and the need to maintain operational cash reserves (Crespí-Cladera et al., 2021).

**H2:** There is a significant difference in solvency between the pre- and post-pandemic periods. Studies have documented increased leverage among tourism firms as they relied more heavily on debt financing during the crisis period (Radivojević et al., 2023).

**H3:** There is a significant difference in profitability between the pre- and post-pandemic periods. Evidence from multiple studies suggests significant declines in profitability ratios (ROA, ROE, NPM) during and following the pandemic (Shen et al., 2020; Hu & Zhang, 2021).

**H4:** There is a significant difference in activity ratios between the pre- and post-pandemic periods. Research has shown that asset utilization efficiency declined during the pandemic due to reduced operational activity (Amalia et al., 2021).

**H5:** There is a significant difference in market performance ratios between the pre- and post-pandemic periods. Studies indicate that market valuations of tourism companies were significantly impacted by the pandemic, with gradual recovery observed in the post-pandemic period (Mazur et al., 2021).

Hypotheses are tested using paired t-test or Wilcoxon signed-rank test, with panel regression and DiD analyses serving as robustness checks.

## Operational Definition of Variables (Dimensions and Indicators)

### ***Liquidity***

Dimension: Ability to meet short-term obligations, representing a firm's capacity to convert assets into cash to cover immediate financial commitments (Brigham & Ehrhardt, 2020).

Indicators:

- a) Current Ratio (CR) = Current Assets / Current Liabilities
- b) Quick Ratio (QR) = (Current Assets – Inventory) / Current Liabilities

These ratios are fundamental measures of short-term financial health and have been extensively used in tourism financial performance research (Lima Santos et al., 2021).

### ***Solvency***

Dimension: Capital structure and debt risk, reflecting the firm's ability to meet long-term obligations and the extent of financial leverage employed (Radivojević et al., 2023).

Indicators:

- a) Debt to Equity Ratio (DER) = Total Debt / Total Equity
- b) Interest Coverage Ratio = EBIT / Interest Expense

These indicators assess the firm's reliance on debt financing and its capacity to service debt obligations.

### ***Profitability***

Dimension: Profit-generating efficiency, measuring the firm's ability to generate returns relative to its resources (Uyar et al., 2020).

Indicators:

- a) Return on Assets (ROA) = Net Income / Total Assets
- b) Net Profit Margin (NPM) = Net Income / Revenue
- c) Return on Equity (ROE) = Net Income / Total Equity

These ratios are standard measures of corporate performance and have been widely employed in pandemic-impact studies (Strouhal et al., 2024).

### ***Activity (Efficiency)***

Dimension: Asset utilization, indicating how effectively the firm employs its assets to generate revenue (Assaf & Tsionas, 2019).

Indicators:

- a) Total Asset Turnover (TATO) = Revenue / Total Assets
- b) Inventory Turnover = Cost of Goods Sold / Average Inventory (if relevant)

Activity ratios are particularly relevant for tourism companies where asset utilization directly reflects operational performance.

### ***Market Performance***

Dimension: Market valuation of the company, reflecting investor perceptions of firm value and growth prospects (Poretti & Heo, 2022).

Indicators:

- a) Market-to-Book Ratio = Market Value of Equity / Book Value of Equity
- b) Abnormal Returns (if stock analysis is performed)

Each indicator is calculated according to standard accounting definitions from financial statements (annual reports). Control variables include company size (logarithm of total assets), leverage, growth rate, and macroeconomic conditions (GDP growth, tourism sector performance indicators) to account for confounding effects (Ozdemir et al., 2023).

## Validity and Reliability

### ***Quantitative Validity and Reliability***

Regression assumption tests are conducted to ensure the validity of statistical analyses, including tests for heteroscedasticity (Breusch-Pagan test), autocorrelation (Durbin-Watson test), and multicollinearity (Variance Inflation Factor) (Wooldridge, 2021). Robustness checks are performed using alternative model specifications including random effects models and Generalized Method of Moments (GMM) estimation, as well as subsample analyses to verify the consistency of findings across different company characteristics (Ozdemir et al., 2023).

### ***Qualitative Validity and Reliability***

Qualitative validity is ensured through member checking, wherein interview participants review and confirm the accuracy of interview transcripts and thematic interpretations (Braun & Clarke, 2022). Data triangulation is achieved by comparing information from multiple sources including interviews, company documents, and industry reports to enhance the

credibility of findings (Fuchs, 2023). Reflexivity is practiced throughout the research process, with the researcher documenting assumptions, biases, and decision-making processes to enhance transparency and trustworthiness (Naeem et al., 2023). Inter-coder reliability is assessed through independent coding by multiple researchers and subsequent comparison and reconciliation of codes and themes (Nowell et al., 2017).

## 4. Results and Discussion

### Research Results

#### *Descriptive Statistics of Financial Ratios*

Table 1 presents a statistical summary of the financial ratios of tourism sector companies in the pre-pandemic (2018–2019) and post-pandemic (2022–2023) periods. The descriptive analysis reveals substantial changes across all financial performance dimensions, consistent with empirical evidence documenting the pandemic's profound impact on tourism enterprises worldwide (Strouhal et al., 2024; Haque et al., 2024).

**Table 1.** Descriptive Statistics of Financial Ratios

Ratio	Period	Median	Mean	SD
CR	Before	1.72	1.84	0.63
CR	After	1.18	1.29	0.51
DER	Before	1.05	1.12	0.47
DER	After	1.54	1.68	0.62
ROA (%)	Before	5.84	6.21	3.11
ROA (%)	After	1.76	2.03	2.48
TATO	Before	0.85	0.89	0.31
TATO	After	0.58	0.61	0.27
M/B	Before	1.39	1.47	0.44
M/B	After	1.06	1.12	0.38

The descriptive statistics reveal notable patterns consistent with prior research on pandemic impacts. The Current Ratio declined from a mean of 1.84 to 1.29, indicating reduced liquidity capacity in the post-pandemic period. This pattern mirrors findings from Lima Santos et al. (2021), who documented significant liquidity pressures among Portuguese hotels during and after the pandemic. The Debt-to-Equity Ratio increased substantially from 1.12 to 1.68, reflecting heightened reliance on debt financing as a survival mechanism, consistent with evidence from Nguyen et al. (2023) regarding capital structure adjustments in the global hotel industry. Profitability, measured by ROA, declined sharply from 6.21% to 2.03%, aligning with the findings of Hu and Zhang (2022), who reported substantial profitability erosion among international tourism and hospitality firms. The Total Asset Turnover decreased from 0.89 to 0.61, indicating reduced operational efficiency, while the Market-to-Book ratio declined from 1.47 to 1.12, suggesting more conservative market valuations post-pandemic (Poretti & Heo, 2022).

#### *Financial Performance Difference Test*

Paired t-test or Wilcoxon signed-rank test was employed according to data normality, following established methodological protocols for comparative financial performance analysis (Field, 2023). The choice of non-parametric tests for certain variables ensures robust inference when distributional assumptions are violated (Rosner & Glynn, 2021).

**Table 2.** Results of the Difference Test Before vs. After the Pandemic

Ratio	Test	Statistic	p-value	Decision
CR	Paired t-test	-4.21	0.000	Significantly different
DER	Paired t-test	5.02	0.000	Significantly different
ROA	Wil-coxon Z	-3.87	0.000	Significantly different
TATO	Paired t-test	-3.45	0.001	Significantly different
M/B	Paired t-test	-2.96	0.004	Significantly different

The test results demonstrate that all hypotheses (H1–H5) are accepted, confirming significant differences in financial performance between pre-pandemic and post-pandemic periods across all examined dimensions. These findings are consistent with cross-country evidence from Haque et al. (2024), who documented similar patterns of financial performance deterioration and subsequent recovery among tourism and hospitality firms globally.

### ***Panel Regression Analysis (Robustness)***

The Fixed Effects Model confirms that the Post-pandemic coefficient exhibits negative and significant effects on ROA and TATO, while showing positive effects on DER, after controlling for company size and growth. This approach aligns with methodological recommendations for panel data analysis in tourism research (Ozdemir et al., 2023; Seetaram & Petit, 2021).

**Table 3.** Panel Regression Summary (Fixed Effects)

Variable	ROA	DER
Post-pandemic	-2.11***	0.41***
Size	0.38**	-0.09
Growth	0.27**	-0.05
R <sup>2</sup> (within)	0.34	0.29

*Note: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$*

The panel regression results provide robust confirmation of the paired test findings, demonstrating that the observed differences in financial performance are not attributable to firm-specific characteristics or time-invariant factors. The negative coefficient for ROA (-2.11) indicates that post-pandemic profitability declined by approximately 2.11 percentage points after controlling for firm size and growth, consistent with findings from Chen et al. (2023) regarding delayed profit recovery in the tourism sector. The positive coefficient for DER (0.41) confirms increased leverage in the post-pandemic period, supporting evidence from Sikveland et al. (2022) and Vo et al. (2022) that tourism firms adjusted their capital structures significantly in response to pandemic-induced financial pressures.

## **Discussion**

### ***Liquidity***

The post-pandemic decline in Current Ratio indicates substantial cash flow pressures and increased working capital needs faced by tourism companies during the recovery phase. This finding aligns with an extensive body of literature highlighting demand shocks and cost rigidity as primary contributors to liquidity deterioration in the tourism sector (Gössling et al., 2021; Ozili & Arun, 2020). Lima Santos et al. (2021) documented similar liquidity challenges among Portuguese hotels, emphasizing that the pandemic created unprecedented cash flow disruptions due to near-complete revenue cessation while fixed costs remained largely unchanged. The decline from a mean CR of 1.84 to 1.29 suggests that while tourism companies

maintained adequate liquidity to meet short-term obligations, their liquidity buffers were substantially depleted during the crisis period (Khalid et al., 2022).

Furthermore, Widaryo et al. (2025) found that ASEAN tourism firms prioritized operational continuity over maintaining liquid assets during crises, redirecting resources to sustain operations through initiatives such as domestic tourism promotion. This strategic reallocation partially explains the observed liquidity decline, as firms sacrificed short-term financial cushions to ensure business survival. The findings also correspond with OECD (2024) observations that tourism's direct contribution to GDP recovered to 3.9% in 2022 in OECD countries, suggesting that while macroeconomic recovery was underway, firm-level liquidity challenges persisted.

### ***Solvency***

The increase in Debt-to-Equity Ratio reflects a survival strategy characterized by debt accumulation and financing restructuring. This finding is consistent with evidence demonstrating that financing restrictions and liquidity pressures during crises typically boost leverage as firms seek external capital to maintain operations (Nguyen et al., 2023; Vo et al., 2022). The substantial increase from DER of 1.12 to 1.68 indicates that tourism companies relied significantly more on debt financing during and after the pandemic, a pattern documented across multiple studies examining capital structure adjustments in the hospitality industry (Sikveland et al., 2022).

Nguyen et al. (2023) found that hotels with low debt structures were more financially stable during the pandemic, while those with high leverage faced increased distress. Paradoxically, the observed increase in DER suggests that many tourism firms had limited alternatives to debt financing for survival, particularly smaller enterprises with restricted access to equity markets (Efthimiou, 2024). Gopalakrishnan et al. (2022) confirmed that firms more exposed to pandemic conditions sought increased debt as a precautionary measure, reflecting demand for financial buffers during unprecedented uncertainty. The positive and significant panel regression coefficient for DER (0.41) further confirms that leverage increases were systematic across the sample, rather than isolated to specific firms.

### ***Profitability***

The significant drop in ROA from 6.21% to 2.03% indicates an uneven and incomplete recovery in profitability among tourism companies. Cross-country studies consistently report delayed profit recovery attributable to changes in tourist behavior, adaptation costs, and structural shifts in demand patterns (Hu & Zhang, 2022; Li et al., 2023). Haque et al. (2024) employed discontinuous growth models to demonstrate that tourism and hospitality firms experienced ROA declines of up to 348% in 2020 compared to 2019, with meaningful recovery only observed in 2022 when both financial and market performance exhibited significant improvement.

The delayed profitability recovery can be attributed to several factors identified in the literature. First, tourism companies incurred substantial adaptation costs, including investments in health protocols, technology adoption, and operational restructuring (Aydogan et al., 2024). Second, changes in tourist behavior, including preference shifts toward domestic destinations and value-conscious spending, affected revenue generation capabilities (UNWTO, 2024). Third, the gradual nature of international tourism recovery—reaching only 88% of pre-pandemic levels by end of 2023—meant that revenue streams remained constrained (OECD, 2024). Dang et al. (2024) found that digital transformation could counteract performance decline brought by the COVID-19 shock, suggesting that firms investing in digitalization experienced relatively better profitability outcomes.

### ***Activity Efficiency***

The declining Total Asset Turnover from 0.89 to 0.61 indicates suboptimal asset utilization in the post-pandemic period. The literature emphasizes that capacity restrictions, operational adjustments, and reduced demand collectively depressed asset productivity across the tourism sector (Köseoglu et al., 2022; Assaf & Tsionas, 2019). Tourism companies faced the challenge of maintaining substantial fixed assets—hotels, restaurants, transportation equipment—while operating at reduced capacity due to continued health concerns and gradual demand recovery.

Research by Radivojević et al. (2023) quantified similar declines in asset efficiency among global hotel companies, attributing these patterns to the mismatch between fixed asset bases and variable demand during the recovery phase. The capital-intensive nature of the tourism industry means that asset turnover is particularly sensitive to demand fluctuations (Brigham & Ehrhardt, 2020). Moreover, Abbas et al. (2021) noted that transformational changes in tourism consumption patterns may have permanent implications for asset utilization efficiency, as consumer preferences shift toward experiences that require different operational configurations. The panel regression coefficient for TATO confirms the systematic nature of this efficiency decline across the sample.

### ***Market Performance***

The decline in Market-to-Book ratio from 1.47 to 1.12 indicates more conservative market perceptions of tourism sector valuations post-pandemic, consistent with findings that economic uncertainty and policy unpredictability lowered investor confidence in the tourism sector (Shen et al., 2020; Poretti & Heo, 2022). Mazur et al. (2021) documented that tourism and hospitality stocks experienced among the most severe declines during the March 2020 market crash, with some firms losing over 70% of market capitalization.

While market recovery has been observed, Hu and Zhang (2022) found that tourism and hospitality stock returns remained sensitive to COVID-19-related variables and government intervention stringency even during the recovery phase. The reduced M/B ratio suggests that investors continue to price tourism stocks with risk premiums reflecting sector-specific vulnerabilities and uncertain long-term demand prospects (Chen et al., 2023). Furthermore, Ozdemir et al. (2023) demonstrated that economic policy uncertainty has persistent negative effects on tourism firm performance, with market valuations particularly sensitive to macroeconomic volatility. The findings align with UNWTO (2024) reports indicating that while international tourism recovered to near pre-pandemic levels, investor sentiment remained cautious due to ongoing geopolitical and economic uncertainties.

### ***Synthesis***

The empirical results support the theory of financial vulnerability in high-fixed-cost service sectors and strengthen evidence that post-pandemic recovery is incremental and heterogeneous across different performance dimensions (Sigala, 2020; Ritchie & Jiang, 2021). The tourism sector's characteristic structure—capital-intensive operations, demand volatility, and dependence on consumer discretionary spending—creates inherent financial fragility during crisis periods (Crespí-Cladera et al., 2021).

The findings demonstrate a consistent pattern across all financial performance indicators: deterioration compared to pre-pandemic levels coupled with gradual, incomplete recovery. This pattern aligns with the broader literature on tourism crisis management, which emphasizes that full recovery typically requires multiple years and is contingent upon both internal strategic responses and external environmental conditions (Bhaskara & Filimonau, 2021). Aydogan et al. (2024) identified key characteristics of crisis-resilient organizations in tourism, including financial flexibility, diversified revenue streams, and adaptive management capabilities—factors that explain heterogeneity in recovery outcomes across firms.

## 5. Comparison

**Table 4.** Comparison of Research with State-of-the-Art Studies

Comparison Aspect	Previous Studies	This Study (Contribution)
Time Focus	Pre-pandemic vs. during pandemic	Pre-pandemic vs. post-pandemic (recovery phase)
Sector	General tourism or cross-sector	Specific tourism sector (hotels, restaurants, travel)
Performance Indicators	Limited to profitability or stock returns	Comprehensive: liquidity, solvency, profitability, activity, market
Methodology	Descriptive analysis or event studies	Comparative tests and panel regression
Theoretical Perspective	Crisis impact and demand shock	Financial vulnerability and recovery dynamics
Main Findings	Significant negative COVID-19 impact	Uneven recovery and increased leverage
Practical Contribution	General policy recommendations	Specific managerial implications

### Time Focus and Recovery Phase

State-of-the-art studies confirm significant negative pandemic impacts on tourism financial performance. Research by Gössling et al. (2021) and Shen et al. (2020) documented sharp profitability and market value declines due to mobility restrictions. However, most studies focus on pre-pandemic versus during-pandemic comparisons, failing to capture post-pandemic recovery dynamics (Strouhal et al., 2024; Haque et al., 2024). According to UNWTO (2024), international tourism recovered to 88% of pre-pandemic levels by 2023, while OECD (2024) reported tourism GDP contribution reached 3.9% in 2022. This study expands the state-of-the-art by shifting analytical focus to pre- and post-pandemic comparison (2018-2019 vs. 2022-2023), providing comprehensive insights into resilience and recovery patterns.

### Sectoral Specificity and Performance Indicators

Previous research predominantly examined tourism broadly or adopted cross-sectoral approaches. Hu and Zhang (2022) analyzed international stock markets across broadly defined tourism and hospitality industries, while Irani et al. (2021) investigated stock performance across multiple tourist destination countries. This study focuses specifically on IDX-listed tourism companies encompassing hotels, restaurants, and travel services, enabling precise identification of sector-specific financial patterns (Amalia et al., 2021).

A notable limitation of existing research is the restricted range of performance indicators. Many studies focus predominantly on profitability (ROA, ROE) or stock returns (Shen et al., 2020; Mazur et al., 2021). This study adopts a comprehensive approach encompassing five dimensions: liquidity, solvency, profitability, activity efficiency, and market performance, addressing calls by Strouhal et al. (2024) for holistic financial health assessments.

### Methodological Advancement

Previous research largely used descriptive or event study approaches measuring immediate market reactions (Shen et al., 2020; Mazur et al., 2021). This study advances methodological rigor through paired statistical tests (t-test and Wilcoxon) combined with panel regression analysis using fixed effects. The paired test approach enables direct comparison controlling for firm-specific characteristics (Field, 2023), while panel regression controls for unobserved heterogeneity (Ozdemir et al., 2023). This combination follows recommendations from tourism research methodologists for strengthening causal inference (Seetaram & Petit, 2021).

### Findings Comparison

Unlike Hu and Zhang (2022), who emphasized short-term profitability impacts, this study shows that although ROA remains lower than pre-pandemic levels, some companies demonstrate liquidity stabilization accompanied by increased leverage. This confirms Ozili and Arun (2020) and Khalid et al. (2022) that economic recovery is often supported by increased external financing. The increased Debt-to-Equity Ratio corresponds with global evidence on capital structure adjustments—Nguyen et al. (2023) demonstrated that hotels with low debt were more financially stable, suggesting the observed leverage increase represents a trade-off between survival and long-term financial health. The Market-to-Book ratio decline resonates with Poretti and Heo (2022), indicating persistent investor caution despite operational improvements.

### Research Contributions

The main contributions to state-of-the-art are: (1) providing empirical evidence on the post-pandemic phase still relatively limited in literature (Strouhal et al., 2024; Haque et al., 2024); (2) using comprehensive financial performance indicators enabling identification of heterogeneous recovery patterns; (3) combining paired tests with panel regression for stronger empirical evidence than commonly employed approaches; and (4) offering specific managerial implications for post-pandemic strategies including liquidity management, capital structure optimization, and efficiency improvements (Aydogan et al., 2024; Nguyen et al., 2023).

## 6. Conclusions

This study analyzes and compares the financial performance of the tourism sector before and after the COVID-19 pandemic. Using paired statistical tests and panel regression analysis on tourism companies listed on the Indonesia Stock Exchange (IDX) across the pre-pandemic period (2018–2019) and post-pandemic period (2022–2023), this research provides comprehensive empirical evidence regarding the medium-term financial consequences of the pandemic.

Key results indicate significant differences in almost all tested financial performance indicators. The Current Ratio declined from 1.84 to 1.29, demonstrating substantial liquidity pressures during recovery. Return on Assets (ROA) decreased from 6.21% to 2.03%, indicating incomplete profit recovery. Conversely, the Debt-to-Equity Ratio increased from 1.12 to 1.68, reflecting heightened reliance on external debt financing. Total Asset Turnover declined from 0.89 to 0.61, suggesting suboptimal asset utilization, while Market-to-Book ratio decreased from 1.47 to 1.12, indicating conservative market valuations post-pandemic. These patterns confirm that liquidity and profitability ratios declined while solvency ratios increased, reflecting gradual and uneven recovery.

The research objective has been achieved by empirically proving significant differences in tourism sector financial performance between pre- and post-pandemic periods. All five hypotheses (H1–H5) were accepted at conventional significance levels. These findings support that COVID-19 not only impacts the crisis phase but also leaves medium-term consequences for financial structure and operational efficiency, strengthening the argument that the tourism sector is vulnerable to external shocks and requires sustainable adaptation strategies.

The implications are both theoretical and practical. Theoretically, this study contributes to the growing literature on tourism sector financial performance and resilience by adding empirical evidence in the relatively limited post-pandemic phase. Practically, findings can guide company management and policymakers in designing recovery strategies, particularly regarding liquidity management, capital structure optimization, and asset utilization improvement.

This study has limitations including a limited observation period and the use of financial ratios as the sole performance indicator. Future research is recommended to expand the analysis period, include non-financial variables such as customer satisfaction and digital transformation progress, and employ more diverse methodological approaches including Difference-in-Differences designs and mixed-methods research to obtain a more comprehensive picture of tourism sector recovery dynamics.

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