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# Financial Performance Analysis of Companies in the Stock Exchange Istanbul Tourism Index

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## ABSTRACT

This study aimed to evaluate the financial performance of tourism companies listed on the Borsa Istanbul Stock Exchange (BIST) using a multi-criteria decision-making method called the Range of Values (ROV) technique. This approach was chosen because it allows multiple financial indicators to be considered simultaneously, thus providing a more holistic assessment than single-metric evaluations. The researchers selected eight financial ratios, spanning liquidity, leverage, profitability, and activity measures, as evaluation criteria. These ratios were applied to assess the financial performance of the nine tourism companies traded on BIST from 2015 to 2021. The results of the ROV analysis revealed that the financial leverage ratio is the most critical indicator in determining the overall financial performance of tourism firms. This suggests that a company's capital structure and debt management are crucial to its financial standing within the tourism industry. By ranking the nine companies based on their aggregated financial performance scores, this study provides insights into their relative financial health. This information can be valuable for investors, creditors, and industry analysts when making informed decisions regarding the tourism sector. The findings of this study demonstrate the utility of multi-criteria decision-making methods, such as the ROV technique, in comprehensively evaluating companies' financial performance. The authors conclude that financial ratios can be effectively employed to assess the performance of tourism companies, and that the ROV approach offers a robust framework for such assessments. This study contributes to the literature by providing a nuanced understanding of the financial drivers of performance in the tourism industry, which can inform strategic decision-making and resource allocation within the sector.

## KEYWORDS

Financial Performance, Financial Ratios, ROV Method, Tourism Enterprises.

## ARTICLE HISTORY

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## 1. Introduction

Tourism is one of the most critical sectors in world economies because of its income-generating effect, foreign exchange inflow, and employment-enhancing features. Tourism is also the fastest-growing sector in the 21st century world economy. Tourism affects economic growth and development in the long run. With the development of tourism in a country, foreign exchange shortage decreases, the competitiveness and efficiency of domestic firms with their foreign competitors increases, it has a positive effect on the foreign trade balance, creates employment, and increases national income (Brohman, 1996, p. 49-52; Bahar, 2006, p. 137-138; Akın et al., 2012). The World Tourism Organization predicts that the tourism sector will develop further and tourism revenues will increase interest in the tourism sector. Therefore, conducting a financial analysis before investing in tourism is essential. Tourism generates significant income and foreign exchange revenues for the country. As the fastest growing industry in the 21st century, the tourism sector helps alleviate foreign exchange shortages and enhances the competitiveness of domestic firms against foreign competitors (Bahar & Kozak, 2005; Akın et al., 2012). The World Tourism Organization (2022) predicts continued expansion of the tourism sector and rising revenues, making it a critical driver of economic growth. Second, the tourism industry has created substantial employment opportunities. Tourism is a labor-intensive sector that provides jobs across various skill levels, from hotel and restaurant workers to tour guides and travel agents (Brohman, 1996; UNWTO, 2021). This employment generation can be particularly beneficial for developing countries seeking to reduce poverty and unemployment. Third, tourism contributes to improving trade balance. By attracting international visitors who spend money on goods and services, tourism can offset trade deficits and improve a country's overall balance of payments (Akın et al., 2012). This is particularly important for developing economies, which may struggle with trade imbalances. Fourth, tourism is linked to other industries, including transportation, hospitality, food and beverages, and retail. As tourists engage in these complementary sectors, their spending generates additional economic activity and supports the growth of related businesses (Bahar, 2006; Çelik, 2021). This multiplier effect amplifies the impact of tourism on the national income and employment. Finally, tourism can drive regional development and help reduce the economic disparities within a country. By attracting visitors to less-developed areas, tourism can stimulate infrastructure investments, create jobs, and foster entrepreneurial opportunities in these regions (Brohman, 1996; Ecer & Günay, 2014). This can contribute to more balanced and inclusive growth across a country's geographic areas.

Financial management provides financial resources and invests in appropriate assets. Financial analysis can facilitate the assessment of a company's financial position. These evaluations are an essential source for share investors who are thinking of becoming a partner of the company, creditors who are thinking of lending money, and other information users. As a result of these evaluations, defined as "Financial Statement Analysis," it is possible to inform decision-making mechanisms and take measures against potential risks (Saraç, 2012; Tekin, 2017). Financial analysis is a critical success factor for companies to survive in developing economies. The use of audited financial statements in their analysis of financial statements is of great importance. Analysts can assess a company's profitability, liquidity, solvency, and efficiency by examining its income statement, balance sheet, and cash flow statement (Weygandt et al., 2018; Brigham & Houston, 2019). This insight is essential to determine a company's financial standing and ability to meet its obligations. A financial analysis enables the identification of trends and patterns in a company's financial performance over time. Analysts can detect improvements, declines, or significant changes in a company's financial condition by comparing financial ratios and other key metrics across multiple periods (Palepu & Healy, 2008; Subramanyam, 2014). This longitudinal perspective is crucial for evaluating a company's financial trajectory and identifying the potential areas of concern or opportunity. Analysts can determine a company's relative strengths and weaknesses by benchmarking its financial ratios and performance indicators against industry averages or competitors (Helfert, 2001; Brigham & Houston, 2019). This comparative analysis helps inform strategic decision-making and identify areas where the company may need to improve its operations or financial management. Potential investors, lenders, and other stakeholders rely on insights gained from financial statement analysis to evaluate a company's risk profile, growth potential, and overall investmentworthiness (Palepu & Healy, 2008; Subramanyam, 2014). This analysis is critical for assessing a company's long-term viability and ability to generate sus-

tainable returns. Understanding a company's historical financial performance and trends allows managers to develop more accurate budgets, make informed strategic decisions, and forecast future financial outcomes (Helfert, 2001; Helfert al., 2018). This financial planning and decision-making process ensures continued growth and profitability.

The importance of tourism to investors, related sectors, and the national economy makes it necessary to evaluate the financial performance of tourism enterprises. Companies can effectively perform healthy decision-making, planning, and auditing functions (Ecer et al., 2011; Ecer & Günay, 2014; Aytekin, 2019; Çelik, 2021). Managers, shareholders, and investors must evaluate a company's performance. Company performance is assessed by analyzing, measuring, evaluating, and interpreting the answers to various questions related to company structure, financial structure, and capital structure. Performance measurements show how effectively resources are used. Financial performance analysis provides a comprehensive understanding of a company's profitability, liquidity, solvency, and efficiency (Brigham & Healy, 2008; Brigham & Houston, 2019). By examining financial ratios and other performance indicators, analysts can assess a company's ability to generate profits, meet short-term obligations, manage long-term debt, and utilize assets effectively. This insight is essential to evaluate a company's financial health and viability. A financial performance analysis enables the identification of trends and patterns in a company's financial metrics over time. Analysts can detect improvements, declines, or significant changes in a company's financial condition by comparing ratios and performance indicators across multiple periods (Subramanyam, 2014; Weygandt et al., 2018). This longitudinal perspective is crucial for evaluating the company's financial trajectory and identifying potential areas of concern or opportunity.

Owing to financial performance analysis, it may be possible for analysts to determine the relative strengths and weaknesses of a company by comparing the company's financial ratios and performance indicators with industry averages or competitors (Helfert, 2001; Brigham & Houston, 2019). This comparative analysis also helps inform strategic decision-making and identify areas where the company may need to improve its operations or financial management. Through performance analysis, potential investors, lenders, and other stakeholders benefit from the findings of financial performance analysis to evaluate the company's risk profile, growth potential, and overall investment value (Helfert, 2001; Palepu & Healy, 2008; Subramanyam, 2014; Weygandt et al., 2018). This analysis is critical for assessing a company's long-term viability and ability to generate sustainable returns.

Multi-criteria decision-making (MCDM) techniques used in financial analysis are frequently used in financial performance analysis by analyzing financial statements (Aytekin, 2019; Pala, 2021; Čabinová et al., 2021). However, no study has measured the financial performance of tourism businesses using the ROV method, which is a multi-criteria decision-making method. In this study, it is thought that evaluating the 2015-2021 financial performances of tourism companies operating in the Borsa Istanbul (BIST) Tourism Index, considering the criteria determined by the ROV method, will contribute significantly to filling this gap in the literature. Various criteria have been used in the literature to measure financial performance. Financial ratios were used to analyze financial statements. Other ratios have also been used in academic studies. In response to this difference, a detailed literature review was conducted to determine the financial ratios that are of great importance for the tourism sector.

## 2. Literature Review

### 2.1 Financial Performance Studies in Tourism

There are two essential objectives in studies conducted using multicriteria decision-making methods. The first is the selection of companies with successful financial performance, when there are many criteria. The second is to rank the companies with the most successful financial performance (Altın, 2021). Many studies have used multicriteria decision-making methods. From the literature review, studies on financial performance evaluation in tourism using multi-criteria decision-making methods are shown in Table 1.

**Table 1.** Financial Performance Studies in Tourism

| Article | Method | Criteria |
|---|---|---|
| Erdoğan, M., & Yamaltdinova, A. (2018). | TOPSIS | CR, QR, ROE, ROS, DAR, cash ratio, receivables turnover, equity turnover, net working capital turnover, |
| Lam, W.S., Lam, W.H., Jaaman, S.H. and Liew, K.F. (2021) | Fuzzy VIKOR | CR, DAR, DER, EPS, ROA, ROE, |
| Kah Fai Liew, Weng Siew Lam and Weng Hoe Lam | DEMATEL<br>TOPSIS | EPS, DAR, ROE, CR, ROA, DER |
| Čabinová, V., Gallo, P., Pártlová, P., Dobrovič, J. & Stoch, M. (2021). | Confirmatory Factor Analysis Data Envelopment Analysis Financial network analysis with Entropy-DEMATEL, | ROE, CR ve DER |
| Aytekin, A. (2019). 2014-2018 yılları arası | MAUT, TOPSIS, PROMETHEE ve BORDA<br>CRITIC: weight determination<br>Borda Result merge | CR, QR, cash ratio, debt ratio, DER, ROS, ROE, interest coverage ratio, asset turnover, inventory turnover, and receivables Turnover. |
| Hwang, S. N. ve Chang, T. Y. (2003). The activity of 45 hotels from 994 to 1998 | Data Envelopment Analysis | Qualitative data were used. It has been revealed that managerial performance depends on the level of internationalization of hotels. |
| Wu, W. Y., Hsiao, S. W., & Tsai, C. H. (2008). | Time series regression and Gray Relational Analysis (GRA). | To determine the performance of 56 international hotels over the 1992-2005 period, hotel occupancy rates, revenue per room, revenue per employee, and revenue per square meter were used. |
| Chen, M. H. (2011). | Panel regression tests | Revenue, profitability, and hotel stock data were used. The reaction of hotel performance to international performance was examined. The occupancy rate, revenue per room, ROA, ROE, EPS, hotel stock return risk |
| Altın, H. (2021). | MABAC | It is calculated according to four crucial performance criteria: market Capitalization/Book Value, Price/Profit, Market Cap, and Net Profit. |
| Süslü, C., Alpaslan, A. T. E. Ş., & GÖK, M. A. (2019). | AHP<br>(Analytic Hierarchy Process) | Liquidity, Leverage, Profitability, and Activity ratios were selected as the main criteria, and 16 sub-performance criteria were chosen depending on the main criteria. |
| Talip, A., & Ayçin, E. (2020). | MACBETH: Criterion weighting<br>EDAS: benchmarking. | The most important criteria were ROS, ROE and cash ratio, respectively. The financial data in the 2018 balance sheet of 11 BIST hotels and restaurant sector enterprises were analyzed. |
| Soy Temür, A. (2022). 2019-2020 yıllarına ilişkin mali tablo analizi | EDAS, TOPSIS AND WASPAS, Entropy (criterion weighting), Spearman Rank Relationship Test (measurement of consistency between ranking results) | CR, QR, nakit oran, aktif devir hızı, alacak devir hızı, stok devir hızı, DAR, ROE, ROA, ROS, EPS |
| Osman, P. A. L. A. (2021). 2016-2020 dönemleri boyunca | CILOS: Criterion Weighting<br>MAIRCA: benchmarking | QR, cash ratio, debt ratio, equity multiplier ratio, ROS, ROE, equity turnover rate, and stock turnover rate: the ratios used in tourism. |
| Yılmaz, E. & Arslan, T. (2017). 2013-2016 yılları arası | TOPSIS | CR, cash ratio, share turnover ratio (stock turnover ratio), ownership turnover ratio, and ROS, ROE, profitability determination, and net sales ratio. |
| Kahveci, M. & Turna, İ. (2016). 2010-2015 yılları arası | TOPSIS | CR, QR, fixed asset turnover rate, stock turnover rate, asset turnover rate, debt-to-total asset ratio, ROS, ROE, ROA. |
| Özçelik, H., & Kandemir, B. (2015). BIST yedi turizm şirketi 2010-2014 yılları arasında finans performans | TOPSIS | NARROW, cash ratio, CR, inventory turnover, ROE, equity turnover, ROS, cost of goods sold/net sales. |
| Özer, N. (2021). 2012-2020 yılları arasında hisse senedi performansları incelenmiştir. | Sharpe, Treynor, Jensen Alfa, Sortino ve Omega | Monthly price data of companies used. |
| Günay, F., & Fatih, ECER (2020). | Entropy-MAIRCA | Cash flow ratio, ROA, cash return on fixed assets, cash turnover rate, net profitability, operating profitability, net profit/long-term liabilities ratio, ROE, EPS |
| Zhang, D., Xie, J., & Sikveland, M. (2021). | Dynamic panel models | The most commonly applied indicator measures financial performance, ROA, further parsed into profit margin and asset turnover. |
| Jang, S. C. S., Hu, C., Bai, B. (2006). | Correlation | ROA and Turnover and some non-financial hotel evaluation criteria |
| Kandır, S. Y., Karadeniz, E., Özmen, M., Önal, Y. B. (2008). 1991-2003 yılları arası | A correlation matrix has been created | ROA, ROE, the profitability of sales, ROS, ratio of tourism revenues to national income, occupancy rate |

| | | |
|---|---|---|
| Karadeniz, E., Beyazgül, M., Dalak Kahiloğulları, S., Günay, F. (2017). 2014 yılı verileri | Vertical financial analysis | Vertical analysis is based on the financial statements of enterprises for a single period. In the financial statement, each item is evaluated in terms of percentage. |
| Koyuncugil, A. S., Özgülbaş, N. (2010). | Mann-Whitney U test | All proportions used |
| Karakaş, A., & Öztel, A. (2020). 2014-2018 yılları arası | ENTROPY: Weights determined<br>TOPSIS: benchmark<br>Python Computer Program | CR, cash ratio, QR, and equity turnover rate were most important, while net working capital turnover rate, ROS, and DAR ratios were the lowest. 12 ratios used: CR, QR, DAR, cash ratio, short-term foreign resource/liability ratio, long-term foreign resource/liability ratio, asset turnover rate, equity turnover rate, net working capital turnover rate, ROA, ROS, ROE |
| Karadeniz, E., & Kahiloğulları, S. (2013). | Frequency analysis. | It was determined that hotel enterprises most frequently used hotel activity rates and receivable turnover ratio, borrowing ratio, cash ratio, ROS, operating profitability, average room price, and income per saleable room ratios were the highest significant rates. |
| Ecer, F., & Günay, F. (2014). Not: 2008- 2012 yılında BIST 9 işletme | Gray Relational Analysis (GRA) Method | Seventeen financial ratios were used from liquidity, profitability, leverage, and operating indicators. It has been established that the most important is the leverage indicator. |
| Ergül, N. (2014). 2005-2012 yılları arasında | ELECTRE<br>TOPSIS | CR, cash ratio, NARROW financial structure ratio, inventory turnover rate, asset turnover rate, net profitability, ROA |
| Karkacier, O., & YAzgan, A. E. (2017). 2015 yılı | Gray Relational Analysis (GIA) | CR, QR, DER, debt ratio, weight ratio of short-term liabilities, equity multiplier ratio, gross margin ratio, ROS, ROA, ROE. Note: The DAR rate (69.75%) was the most critical |
| Fu, H. P., Chu, K. K., Chao, P., Lee, H. H. ve Liao, Y. C. (2011), | Fuzzy AHP, VIKOR | 3 of the profitability and financial structure ratios |
| Kitsios, F. C. ve Grigoroudis, E. (2020), | Sequential Regression analysis | Gross margin, ROS, asset transfer, equity transfer, debt transfer, ROE, ROA, and solvency ratio. |
| Weerathunga, P. R., Chen, X. ve Samarathunga, M. (2019), 2012'den 2018'e kadar | For criterion weights, Entropy Analysis: Panel Regression | ROA<br>ROE |
| Bilici, N. (2019). 1996-2016 yılları arası merkez bankası | TOPSIS | Liquidity, financial structure, activity and profitability ratios |
| Paça, M., & Karabulut, M. T. (2019). 2013-2017 yılları arası | Kolmogrov-Smirnov ve Shapiro-Wilk, Spearman, Korelasyon, Kruskal Wallis H testi | Liquidity ratios<br>Financial ratios<br>Profitability ratios |
| Lee, J. W., & Manorungrueangrat, P. (2019). 2011 -2015 yılları arası | Multiple regression analysis with dummy variables, correlation analysis, and chi-square tests. | ROA, ROE, and profitability of sales ROS, Risk ratio, Tobins'Q', Market value |
| Çelik, P. (2021). | Fuzzy ELECTRE | Liquidity, financial leverage, profitability, operating ratios. |

Abbreviations: ROE: Return on Equity, ROA: Return on Asset, ROS: Return on Sales, EPS: Earnings Per Share, CR: Current Ratio, CAR: Cash Ratio, DAR: Debt to Assets Ratio, DER: Debt Equity Ratio, QR: Quick Ratio.
Source: Own Elaboration

In addition to the financial performance literature listed in the table above, several recent studies have been conducted on this topic. Sainaghi et al. (2019) examined the relationship between firm characteristics, such as firm size, leverage, diversification, and the financial performance of tourism companies. For instance, Sainaghi et al. found that larger hotel firms and those with higher levels of diversification tend to have better financial performance. Altın et al. (2018) investigated how changes in economic conditions such as GDP growth, exchange rates, and inflation affect the financial performance of tourism companies. This study found that macroeconomic factors such as GDP growth and exchange rates significantly impact the financial performance of hotel companies in the United States. Hao et al. (2020) examined how adopting innovative technologies and practices such as e-commerce, revenue management systems, and sustainability initiatives can affect the financial performance of tourism companies. Hao et al. (2020) showed that implementing various technological innovations improved the financial performance of hotels in China. Other studies have examined the impact of corporate governance structures such as board structure, ownership structure, and executive salaries on the financial performance of tourism companies. For example, Baum and Mooney (2020) find that greater board independence and CEO duality are associated with improved financial performance in the hospitality industry. Some studies have examined how tourism companies react to crises, such as natural disasters, political instability, and epidemics, how they overcome them, and how this affects their financial performance. Gössling et al. (2021) analyzed the

financial impact of the COVID-19 pandemic on the tourism industry, highlighting the need for resilience and adaptation strategies. These examples illustrate the diversity and evolution of scientific research on the financial performance of the tourism sector. By understanding the factors affecting financial performance, tourism businesses can make informed decisions and develop strategies to increase their long-term viability and competitiveness.

## 2.2 Critical Financial Performance Analysis of Tourism Companies

The study by Günay and Fatih (2020) is critical, as it examines the financial performance of 11 companies included in the BIST Tourism Index. To evaluate the overall efficiency of these tourism companies, researchers calculated fundamental profitability ratios, such as operating profit margin, net profit margin, and return on assets (ROA). Their findings show that more prominent companies in the index exhibit higher profitability and efficiency than their smaller counterparts do. This can be attributed to economies of scale, resource access, and improved market positioning. Understanding these performance differences can help investors and industry stakeholders make informed decisions. The study by Altın et al. (2018) on the restaurant industry, an essential component of the tourism industry, provides valuable information on the role of financial leverage. Researchers have found that higher levels of debt financing are associated with lower levels of firm investments. Hao et al. (2020) study on the Chinese hotel industry parallels the Turkish tourism industry. Their findings suggest that adopting innovative technologies and sustainability initiatives can positively impact tourism-related firms' financial performance. The existing literature provides a solid basis for understanding the economic performance of the companies included in the BIST Tourism Index. Additionally, comparative analyses between the financial performance of Turkish tourism companies and their international counterparts can provide valuable benchmarking opportunities and insights for policymakers and industry leaders.

The financial performance of companies in the Borsa Istanbul Tourism Index has received significant academic attention. Studies have often focused on various financial ratios and factors that affect the performance of these companies. Akben-Selcuk (2016) examined the effect of financial ratios on the stock returns of tourism companies traded in Borsa Istanbul. The panel data analysis concluded that profitability ratios significantly impact stock returns and emphasized the critical role of effective management practices in increasing financial performance. Çelik (2012) analyzed the comparative performance of tourism companies in Turkey using financial ratio analysis. The findings show that liquidity and leverage ratios are fundamental in assessing the financial health of these companies, providing insights into their operational efficiency and risk management strategies. In a broader context, Özcan (2014) investigated the relationship between macroeconomic variables and the financial performance of tourism companies in Borsa, Istanbul. Tufan and Hamarat (2014) investigated the role of corporate governance in the financial performance of tourism companies traded in Borsa Istanbul. The study highlighted that companies with strong corporate governance practices tend to perform better financially, suggesting that transparency and accountability are essential for attracting investment and achieving sustainable growth. These studies provide a comprehensive overview of the factors affecting the financial performance of the tourism companies in the Borsa Istanbul Tourism Index. This underlines the importance of internal management practices and external economic conditions in shaping the financial results.

This study is expected to identify existing research on the financial performance analysis of companies included in the BIST Tourism Index. Standard methodologies for such analyses (e.g., ratio analysis and multicriteria decision-making techniques) should be revealed. There are increasing studies on financial performance analysis in the tourism sector (Ecer & Günay, 2014; Aytekin, 2019; Çelik, 2021). Studies emphasize the importance of financial analysis for tourism companies in making informed decisions and ensuring their long-term viability (Saraç, 2012; Tekin, 2017). Financial ratio analysis remains the standard method for performance evaluation (Ecer et al., 2011). While existing research provides valuable information, applying new methodologies, such as the Range of Values (ROV) MCDM technique proposed in this study, creates a potential gap in the literatüre focused on the BIST Tourism Index. This study provides a more comprehensive analysis by including a broader range of factors beyond traditional ratios. Different methods can be used to analyze the financial performance of tourism companies. One of these is the Pan-

el Data Analysis. Akben-Selcuk (2016) used panel data analysis to examine the impact of financial ratios on the stock returns of tourism companies traded in Borsa Istanbul. The power of this method is that it provides a comprehensive view of how different variables interact over time, thus providing data across multiple dimensions.

Another method used to determine the financial performance of tourism companies is financial ratio analysis. Çelik (2012) conducted a comparative performance analysis of tourism companies in Turkey using financial ratio analysis. This method is advantageous because of its simplicity and ability to provide rapid information about a company's financial conditions. Financial ratios such as liquidity, profitability, and leverage are easy to understand and are widely used in financial analysis. However, a limitation is that financial ratio analysis often lacks depth and context because it does not consider external factors or a broader economic environment. It also assumes that past data can predict future performance, although this may not always be accurate. Macroeconomic Analysis is another type of analysis. Özcan (2014) investigated the relationship between macroeconomic variables and the financial performance of tourism companies in Borsa Istanbul. This approach effectively highlights the impact of external economic factors such as GDP growth, exchange rates, and inflation on company performance. The strength of this method is that it can contextualize financial performance within a broader economic environment. However, a limitation is that macroeconomic analyses can be too broad and may not consider company-specific factors that significantly affect performance.

Each methodology used to analyze the financial performance of companies included in the Borsa Istanbul Tourism Index provides unique information and has particular strengths and limitations. Panel data analysis provides a comprehensive view but requires large data sets. The financial ratio analysis is simple but lacks depth. Macroeconomic analysis contextualizes performance, but can be very broad. Time series analysis identifies trends, but can be complex. Integrating the ROV method and addressing the limitations of the methods described here can significantly increase the robustness and applicability of future research. The The ROV offers a more dynamic and flexible approach to evaluating investment opportunities and corporate decision-making processes under uncertainty, especially in the volatile tourism sector (Trigeorgis, 1996). ROV provides a more realistic assessment of financial performance by assessing managerial flexibility and the ability to adapt and revise strategies in response to changing conditions (Copeland & Antikarov, 2001). Financial performance analysis often focuses on historical financial data, which may not fully reflect the strategic value of potential investments (Mun, 2002; Schwartz & Trigeorgis, 2004). ROV includes the value of strategic options such as expanding, postponing, or abandoning projects, and provides a more comprehensive assessment of a company's financial health and prospects (Dixit & Pindyck, 1994). ROV provides a framework that includes various scenarios and managerial flexibility, enabling informed and potentially profitable decisions. ROV can complement existing methodologies by providing a more dynamic perspective. Additionally, the ROV can be integrated into panel data analysis to include real options in the panel's regression models, providing a richer analysis of factors affecting financial performance. Incorporating the ROV method into the financial performance analysis of companies in the Borsa Istanbul Tourism Index addresses the critical gaps identified in previous research. By combining the value of managerial flexibility and strategic options, the ROV provides a more comprehensive and realistic assessment of financial performance, particularly in the uncertain and dynamic context of the tourism sector.

## 3. Methodology

Borsa Istanbul (BIST) is the only stock exchange in Turkey where companies are publicly traded. The dataset of the study consists of the financial statements of tourism companies traded on BIST between 2015 and 2021. The financial ratios were calculated from financial statements published on the official websites of BIST and KAP (BIST, 2021; KAP, 2021). In this study, the Range of Value (ROV) method, a multi-criteria decision-making method, was used to examine the financial performance of companies included in the BIST Tourism Index. The ROV method evaluates a company's financial performance based on multiple criteria such as various financial ratios (liquidity, leverage, profitability, and activity). This multifaceted approach weighs the variables by calculating the relative importance of each criterion, providing a more

holistic assessment. Thus, the criteria' relative impact was also considered. Because the methodology is based on mathematical principles, it can be used to objectively and systematically evaluate company performance. In addition, the ROV method was preferred in this study because it helps to determine the position of companies in the industry by providing the opportunity to compare companies by ranking them according to their performance scores (Tutar & Erdem, 2020). The study established criteria based on literature review and expert opinions. The Standard Deviation (SD) method was used to determine the objective weights of the criteria.

### 3.1 ROV Method

The Range of Values (ROV) method is a multi-criteria decision-making method introduced by Yakowitz et al. (1993). The method only requires the decision maker to indicate the importance of the ranked criteria. Therefore, using the ROV method can be beneficial when decision makers face problems in determining the weights of the criteria. The main advantages of the ROV method are its simple calculation procedure, easy applicability, and short processing time compared with other multi-criteria decision-making methods. The method is applied in three steps (Madić et al., 2016, p. 247-248):

**Step 1.** A decision matrix is created.

**Step 2.** Normalization is performed to eliminate outliers when comparing criteria.

**Step 3.** The best and worst utility values are calculated for each alternative. In calculating the best benefit value, benefit criteria are considered, while in calculating the worst benefit value, cost criteria are considered.

## 4. Results

Within the scope of this study, the financial performance of ten companies in the BIST Tourism Index was analyzed. The companies in this index are listed in Table 2.

**Table 2.** BIST Tourism Sector Companies Used in the Study

| BIST CODE | COMPANY NAME |
|---|---|
| MERIT | Merit Turizm Yatırım Ve İşletme A.Ş. |
| KSTUR | Kuştur Kuşadası Turizm Endüstri A.Ş. |
| PKENT | Petrokent Turizm A.Ş. |
| TEKTU | Tek-Art İnşaat Ticaret Turizm Sanayi Ve Yatırımlar A.Ş. |
| ULAS | Ulaşlar Turizm Yatırımları Ve Dayanıklı Tüketim Malları Ticaret Pazarlama A.Ş. |
| UTPYA | Utopya Turizm İnşaat İşletmecilik Ticaret A.Ş. |
| MAALT | Marmaris Altınyunus Turistik Tesisler A.Ş. |
| AYCES | Altın Yunus Çeşme Turistik Tesisler A.Ş. |
| AVTUR | Avrasya Petrol Ve Turistik Tesisler Yatırımlar A.Ş. |
| MARTI | Martı Otel İşletmeleri A.Ş. |

Source: Own Elaboration

ULAS was not included in the study sample because of the lack of data suitable for the analysis to calculate financial ratios. This company was also excluded from Günay and Fatih's (2020) study. The table lists the Borsa Istanbul (BIST) codes and company names of the ten tourism sector companies analyzed in this study. The BIST codes are unique stock exchange codes that identify tourism companies listed on Borsa Istanbul. The company names provided are the full Turkish names of the ten tourism companies included in the analysis. These include well-known tourism companies such as Merit Turizm, Kuştur Kuşadası Turizm, Petrokent Turizm, Tek-Art İnşaat Ticaret Turizm, and others. The table indicates that ULAS

(Ulaşlar Turizm Yatırımları Ve Dayanıklı Tüketim Malları Ticaret Pazarlama A.Ş.) was not included in the study sample because of the lack of suitable data to calculate specific financial ratios. It should also be noted that ULAS was not included in the study by Günay and Fatih (2020). In summary, this table provides critical details about the ten tourism companies that were the focus of the financial performance analysis conducted within the scope of this particular study. The exclusion of ULAS was also clearly highlighted.

Although many ratios can be used in financial performance measurements, each random ratio may cause deviations from the desired purpose (Ecer & Günay, 2014). For this reason, many ratios (ratios) are used in the literature to determine financial performance. It was determined that the ratios used in the study were necessary because of literature research and interviews with academics who were experts in the subject. The eight ratios calculated in this study are listed in Table 3. The table lists the eight financial performance indicators or ratios calculated and used in the analysis within the scope of this study. For each ratio, the table provides the full name and abbreviation used for that particular ratio. These ratios cover different aspects of financial performance, including profitability:

Operating Profitability Ratio (OPR) and Net Profit Margin (Return on Sales - ROS)

Liquidity: Current Ratio (CR) and Quick Ratio (QR) Leverage: Debt to Assets Ratio – Financial Leverage (DAR)

Cash Management: Cash Ratio (CAR)

Overall Efficiency: Return on Equity (ROE) and Return on Assets (ROA)

Using this comprehensive set of eight financial ratios, the researchers could assess the financial performance of the ten tourism companies from multiple perspectives, as indicated by the literature and subject matter experts.

Using these specific ratios, as opposed to random selection, was deemed necessary to provide a thorough financial performance evaluation within the scope of this study. In summary, this table outlines the key economic indicators and their abbreviations that were the focus of the financial analysis conducted on the ten tourism companies included in this research project.

**Table 3.** Financial Performance Indicators

| Ratios | Abbreviations |
|---|---|
| 1. Operating Profitability ratio | OR |
| 2. Net Profit Margin (Return on Sales) | ROS |
| 3. Current Ratio | CR |
| 4. Quick Ratio | QR |
| 5. Debt to Assets Ratio- Financial Leverage | DAR |
| 6. Cash Ratio | CAR |
| 7. Return on Equity | ROE |
| 8. Return on Asset | ROA |

Source: Own Elaboration

The ratios found by utilizing the figures in the annual balance sheets and income statements for the years 2015-2021 published on PDP are shown in Table 4. These tables constitute the decision matrix.

### Step 1 - Creating the Decision Matrix

In this study, we determined the alternatives to be evaluated by determining the decision matrix and the criteria to be used to evaluate the alternatives. We then created a matrix in which rows represent the alternatives and the columns represent criteria. For each cell in the matrix, we assign a value that represents the performance of the alternative against the relevant criterion. These values consist of raw data, scores, and ratings. In the next step, we normalize the values in the matrix to make them comparable. We used various normalization techniques such as min-max normalization or z-score normalization.

By utilizing the balance sheets and income statements of the BIST Tourism companies, ratios that are thought to impact financial performance were calculated. The results of the ratios mathematically calculated with a decision matrix are listed in Table 4.

**Table 4.** Annual Standard Decision Matrices for the 2015-2021 Period

| 2015 | OR | ROS | CR | QR | DAR | CAR | ROE | ROA |
|---|---|---|---|---|---|---|---|---|
| MERIT | 0,407 | 0,314 | 4,167 | 4,167 | 0,086 | 2,405 | 0,179 | 0,164 |
| KSTUR | 7,657 | 10,761 | 2,342 | 2,342 | 0,175 | 1,369 | 0,117 | 0,096 |
| PKENT | 0,077 | 0,023 | 0,564 | 0,412 | 0,546 | 0,029 | 0,040 | 0,018 |
| TEKTU | 0,059 | 0,110 | 4,362 | 4,359 | 0,354 | 2,552 | 0,012 | 0,008 |
| UTPYA | -0,019 | -0,628 | 0,656 | 0,606 | 0,530 | 0,028 | -0,199 | -0,093 |
| MAALT | 0,321 | 0,483 | 10,182 | 10,177 | 0,040 | 10,095 | 0,057 | 0,054 |
| AYCES | -0,007 | -0,057 | 0,643 | 0,564 | 0,152 | 0,152 | -0,010 | -0,008 |
| AVTUR | 0,147 | 0,823 | 0,796 | 0,793 | 0,122 | 0,006 | 0,026 | 0,023 |
| MARTI | -0,266 | -1,260 | 0,262 | 0,262 | 0,653 | 0,004 | -0,377 | -0,130 |
| **2016** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,356 | 0,281 | 3,464 | 3,464 | 0,084 | 0,004 | 0,185 | 0,170 |
| KSTUR | 0,013 | 0,145 | 6,839 | 6,423 | 0,051 | 6,213 | 0,041 | 0,039 |
| PKENT | -0,474 | -0,492 | 0,320 | 0,232 | 0,758 | 0,035 | -0,953 | -0,229 |
| TEKTU | -2,410 | -4,318 | 1,882 | 1,880 | 0,451 | 0,117 | -0,074 | -0,041 |
| UTPYA | -0,256 | -1,264 | 0,486 | 0,445 | 0,630 | 0,009 | -0,341 | -0,126 |
| MAALT | -0,999 | 0,394 | 3,486 | 3,485 | 0,119 | 3,428 | 0,017 | 0,015 |
| AYCES | -0,334 | -0,412 | 0,399 | 0,358 | 0,204 | 0,083 | -0,056 | -0,044 |
| AVTUR | -1,814 | 4,283 | 0,297 | 0,295 | 0,178 | 0,007 | 0,110 | 0,090 |
| MARTI | -0,632 | -2,681 | 0,340 | 0,330 | 0,789 | 0,005 | -0,700 | -0,147 |
| **2017** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,444 | 0,363 | 3,595 | 3,595 | 0,117 | 0,003 | 0,235 | 0,207 |
| KSTUR | 0,313 | 0,336 | 6,509 | 6,122 | 0,064 | 5,859 | 0,141 | 0,132 |
| PKENT | 0,165 | 0,058 | 0,420 | 0,402 | 0,721 | 0,053 | 0,180 | 0,050 |
| TEKTU | -0,043 | 0,673 | 1,156 | 1,152 | 0,430 | 0,013 | 0,004 | 0,023 |
| UTPYA | 0,037 | -0,501 | 0,462 | 0,452 | 0,644 | 0,054 | -0,215 | -0,076 |
| MAALT | 0,081 | 0,381 | 3,247 | 3,246 | 0,148 | 3,240 | 0,042 | 0,035 |
| AYCES | -0,094 | -0,192 | 0,231 | 0,206 | 0,240 | 0,087 | -0,033 | -0,025 |
| AVTUR | -0,727 | -2,551 | 0,690 | 0,674 | 0,209 | 0,009 | -0,116 | -0,092 |
| MARTI | -0,073 | -0,307 | 0,248 | 0,231 | 0,819 | 0,003 | -0,121 | -0,021 |
| **2018** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,418 | 0,767 | 1,506 | 1,506 | 0,143 | 0,001 | 0,189 | 0,162 |
| KSTUR | 0,516 | 0,505 | 3,635 | 3,453 | 0,156 | 3,197 | 0,329 | 0,277 |
| PKENT | 0,256 | 0,215 | 0,966 | 0,949 | 0,600 | 0,023 | 0,544 | 0,217 |
| TEKTU | -0,386 | -1,667 | 1,140 | 1,131 | 0,265 | 0,004 | -0,059 | -0,044 |
| UTPYA | 0,159 | -0,517 | 0,357 | 0,352 | 0,707 | 0,015 | -0,397 | -0,116 |
| MAALT | -0,052 | 2,946 | 15,606 | 15,605 | 0,531 | 15,586 | 0,187 | 0,088 |
| AYCES | 0,100 | 0,013 | 0,222 | 0,199 | 0,237 | 0,067 | 0,003 | 0,002 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| AVTUR | 0,490 | 0,519 | 4,957 | 4,947 | 0,159 | 0,007 | 0,030 | 0,025 |
| MARTI | 0,021 | -1,121 | 0,389 | 0,378 | 0,915 | 0,004 | -1,532 | -0,128 |
| **2019** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,543 | 0,170 | 4,076 | 4,076 | 0,095 | 0,010 | 0,142 | 0,157 |
| KSTUR | 0,373 | 0,364 | 8,410 | 7,972 | 0,069 | 7,856 | 0,284 | 0,264 |
| PKENT | 0,199 | 0,130 | 1,355 | 1,276 | 0,375 | 0,158 | 0,334 | 0,208 |
| TEKTU | -0,206 | -0,927 | 0,719 | 0,716 | 0,294 | 0,005 | -0,049 | -0,035 |
| UTPYA | 0,216 | -0,051 | 1.079 | 1,079 | 0,776 | 0,009 | -0,052 | -0,011 |
| MAALT | -0,162 | 3,517 | 15,548 | 15,547 | 0,465 | 15,507 | 0,194 | 0,104 |
| AYCES | 0,159 | 0,058 | 0,533 | 0,474 | 0,203 | 0,244 | 0,012 | 0,009 |
| AVTUR | 0,117 | 1,420 | 2,527 | 2,520 | 0,113 | 0,010 | 0,080 | 0,071 |
| MARTI | -0,116 | -0,840 | 0,108 | 0,105 | 0,949 | 0,001 | -2,060 | -0,104 |
| **2020** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,727 | 0,506 | 8,888 | 8,888 | 0,066 | 0,024 | 0,051 | 0,048 |
| KSTUR | 1,498 | 0,352 | 11,555 | 10,539 | 0,047 | 9,868 | 0,030 | 0,029 |
| PKENT | -0,133 | -0,033 | 1,226 | 1,155 | 0,391 | 0,065 | -0,030 | 0,018 |
| TEKTU | -0,850 | -2,694 | 0,968 | 0,967 | 0,356 | 0,013 | -0,066 | -0,042 |
| UTPYA | 0,141 | -0,910 | 0,913 | 0,913 | 0,871 | 0,005 | -0,881 | -0,113 |
| MAALT | 0,010 | 3,395 | 16,648 | 16,647 | 0,403 | 16,076 | 0,159 | 0,095 |
| AYCES | -0,355 | -0,466 | 0,211 | 0,195 | 0,217 | 0,102 | -0,048 | -0,037 |
| AVTUR | 0,227 | 0,807 | 6,023 | 6,023 | 0,105 | 0,091 | 0,026 | 0,023 |
| MARTI | -1,048 | 1,402 | 0,129 | 0,126 | 0,903 | 0,019 | 0,609 | 0,058 |
| **2021** | **OPR** | **ROS** | **CR** | **QR** | **DAR** | **CAR** | **ROE** | **ROA** |
| MERIT | 0,486 | 0,342 | 1,650 | 1,650 | 0,042 | 0,009 | 0,004 | 0,004 |
| KSTUR | 0,296 | 0,829 | 16,613 | 16,042 | 0,045 | 15,436 | 0,257 | 0,245 |
| PKENT | 0,304 | 0,395 | 2,133 | 2,074 | 0,245 | 0,622 | 0,356 | 0,268 |
| TEKTU | - 0,752 | -2,314 | 0,434 | 0,433 | 0,404 | 0,004 | -0,081 | -0,048 |
| UTPYA | 27,529 | 28,207 | 0,481 | 0,435 | 0,382 | 0,024 | 0,806 | 0,498 |
| MAALT | -0,172 | 9,031 | 10,910 | 10,910 | 0,333 | 10,460 | 0,295 | 0,197 |
| AYCES | 0,278 | 0,255 | 1,116 | 1,074 | 0,166 | 0,592 | 0,029 | 0,024 |
| AVTUR | 0,063 | 9,141 | 6,234 | 6,234 | 0,098 | 5,007 | 0,252 | 0,227 |
| MARTI | -0,097 | 0,097 | 0,299 | 0,286 | 0,658 | 0,084 | 0,011 | 0,004 |

Source: Own Elaboration

### Step 2: Create Normalized Decision Matrices

**Table 5.** Normalized Decision Matrices

| 2015 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1 | 0,0849 | 0,1309 | 0,3936 | 0,3938 | 0,9250 | 0,2379 | 1,0000 | 1,0000 |
| 2 | 1,0000 | 1,0000 | 0,2097 | 0,2098 | 0,7798 | 0,1353 | 0,8885 | 0,7687 |
| 3 | 0,0433 | 0,1067 | 0,0304 | 0,0151 | 0,1746 | 0,0025 | 0,7500 | 0,5034 |
| 4 | 0,0410 | 0,1140 | 0,4133 | 0,4132 | 0,4878 | 0,2525 | 0,6996 | 0,4694 |
| 5 | 0,0312 | 0,0526 | 0,0397 | 0,0347 | 0,2007 | 0,0024 | 0,3201 | 0,1259 |
| 6 | 0,0741 | 0,1450 | 1,0000 | 1,0000 | 1,0000 | 1,0000 | 0,7806 | 0,6259 |
| 7 | 0,0327 | 0,1001 | 0,0384 | 0,0305 | 0,8173 | 0,0147 | 0,6601 | 0,4150 |
| 8 | 0,0521 | 0,1733 | 0,0538 | 0,0536 | 0,8662 | 0,0002 | 0,7248 | 0,5204 |
| 9 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| **2016** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1 | 1,0000 | 0,5347 | 0,4841 | 0,5220 | 0,9553 | 0,0000 | 1,0000 | 1,0000 |
| 2 | 0,8760 | 0,5189 | 1,0000 | 1,0000 | 1,0000 | 1,0000 | 0,8735 | 0,6717 |
| 3 | 0,6999 | 0,4448 | 0,0035 | 0,0000 | 0,0420 | 0,0050 | 0,0000 | 0,0000 |
| 4 | 0,0000 | 0,0000 | 0,2423 | 0,2662 | 0,4580 | 0,0182 | 0,7724 | 0,4712 |
| 5 | 0,7787 | 0,3551 | 0,0289 | 0,0344 | 0,2154 | 0,0008 | 0,5378 | 0,2581 |
| 6 | 0,5101 | 0,5478 | 0,4875 | 0,5254 | 0,9079 | 0,5515 | 0,8524 | 0,6115 |
| 7 | 0,7505 | 0,4541 | 0,0156 | 0,0204 | 0,7927 | 0,0127 | 0,7882 | 0,4637 |
| 8 | 0,2155 | 1,0000 | 0,0000 | 0,0102 | 0,8279 | 0,0005 | 0,9341 | 0,7995 |
| 9 | 0,6428 | 0,1903 | 0,0066 | 0,0158 | 0,0000 | 0,0002 | 0,2223 | 0,2055 |
| **2017** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1 | 1,0000 | 0,9038 | 0,5358 | 0,5729 | 0,9298 | 0,0000 | 1,0000 | 1,0000 |
| 2 | 0,8881 | 0,8955 | 1,0000 | 1,0000 | 1,0000 | 1,0000 | 0,7911 | 0,7492 |
| 3 | 0,7617 | 0,8092 | 0,0301 | 0,0331 | 0,1298 | 0,0085 | 0,8778 | 0,4749 |
| 4 | 0,5841 | 1,0000 | 0,1473 | 0,1599 | 0,5152 | 0,0017 | 0,4867 | 0,3846 |
| 5 | 0,6524 | 0,6359 | 0,0368 | 0,0416 | 0,2318 | 0,0087 | 0,0000 | 0,0535 |
| 6 | 0,6900 | 0,9094 | 0,4804 | 0,5139 | 0,8887 | 0,5528 | 0,5711 | 0,4247 |
| 7 | 0,5406 | 0,7317 | 0,0000 | 0,0000 | 0,7669 | 0,0143 | 0,4044 | 0,2241 |
| 8 | 0,0000 | 0,0000 | 0,0731 | 0,0791 | 0,8079 | 0,0010 | 0,2200 | 0,0000 |
| 9 | 0,5585 | 0,6960 | 0,0027 | 0,0042 | 0,0000 | 0,0000 | 0,2089 | 0,2375 |
| **2018** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1 | 0,8914 | 0,5276 | 0,0835 | 0,0848 | 1,0000 | 0,0000 | 0,8290 | 0,7160 |
| 2 | 1,0000 | 0,4708 | 0,2219 | 0,2112 | 0,9832 | 0,2051 | 0,8964 | 1,0000 |
| 3 | 0,7118 | 0,4080 | 0,0484 | 0,0487 | 0,4080 | 0,0014 | 1,0000 | 0,8519 |
| 4 | 0,0000 | 0,0000 | 0,0597 | 0,0605 | 0,8420 | 0,0002 | 0,7095 | 0,2074 |
| 5 | 0,6042 | 0,2493 | 0,0088 | 0,0099 | 0,2694 | 0,0009 | 0,5467 | 0,0296 |
| 6 | 0,3703 | 1,0000 | 1,0000 | 1,0000 | 0,4974 | 1,0000 | 0,8280 | 0,5333 |
| 7 | 0,5388 | 0,3642 | 0,0000 | 0,0000 | 0,8782 | 0,0042 | 0,7394 | 0,3210 |
| 8 | 0,9712 | 0,4739 | 0,3078 | 0,3082 | 0,9793 | 0,0004 | 0,7524 | 0,3778 |
| 9 | 0,4512 | 0,1184 | 0,0109 | 0,0116 | 0,0000 | 0,0002 | 0,0000 | 0,0000 |

| **2019** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
|---|---|---|---|---|---|---|---|---|
| 1 | 1,0000 | 0,2468 | 0,0037 | 0,2572 | 0,9705 | 0,0006 | 0,9198 | 0,7092 |
| 2 | 0,7730 | 0,2905 | 0,0077 | 0,5095 | 1,0000 | 0,5066 | 0,9791 | 1,0000 |
| 3 | 0,5407 | 0,2378 | 0,0012 | 0,0758 | 0,6523 | 0,0101 | 1,0000 | 0,8478 |
| 4 | 0,0000 | 0,0000 | 0,0006 | 0,0396 | 0,7443 | 0,0003 | 0,8400 | 0,1875 |
| 5 | 0,5634 | 0,1971 | 1,0000 | 0,0631 | 0,1966 | 0,0005 | 0,8388 | 0,2527 |
| 6 | 0,0587 | 1,0000 | 0,0143 | 1,0000 | 0,5500 | 1,0000 | 0,9415 | 0,5652 |
| 7 | 0,4873 | 0,2216 | 0,0004 | 0,0239 | 0,8477 | 0,0157 | 0,8655 | 0,3071 |
| 8 | 0,4312 | 0,5281 | 0,0022 | 0,1564 | 0,9500 | 0,0006 | 0,8939 | 0,4755 |
| 9 | 0,1202 | 0,0196 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| **2020** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1 | 0,6972 | 0,5255 | 0,5302 | 0,5304 | 0,9778 | 0,0012 | 0,6255 | 0,7740 |
| 2 | 1,0000 | 0,5002 | 0,6917 | 0,6303 | 1,0000 | 0,6137 | 0,6114 | 0,6827 |
| 3 | 0,3594 | 0,4370 | 0,0664 | 0,0623 | 0,5981 | 0,0037 | 0,5711 | 0,6298 |
| 4 | 0,0778 | 0,0000 | 0,0508 | 0,0509 | 0,6390 | 0,0005 | 0,5470 | 0,3413 |
| 5 | 0,4670 | 0,2930 | 0,0475 | 0,0476 | 0,0374 | 0,0000 | 0,0000 | 0,0000 |
| 6 | 0,4156 | 1,0000 | 1,0000 | 1,0000 | 0,5841 | 1,0000 | 0,6980 | 1,0000 |
| 7 | 0,2722 | 0,3659 | 0,0050 | 0,0042 | 0,8014 | 0,0060 | 0,5591 | 0,3654 |
| 8 | 0,5008 | 0,5750 | 0,3568 | 0,3569 | 0,9322 | 0,0054 | 0,6087 | 0,6538 |
| 9 | 0,0000 | 0,6727 | 0,0000 | 0,0000 | 0,0000 | 0,0009 | 1,0000 | 0,8221 |
| **2021** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1 | 0,0438 | 0,0870 | 0,0828 | 0,0866 | 1,0000 | 0,0003 | 0,0958 | 0,0952 |
| 2 | 0,0371 | 0,1030 | 1,0000 | 1,0000 | 0,9951 | 1,0000 | 0,3811 | 0,5366 |
| 3 | 0,0373 | 0,0888 | 0,1124 | 0,1135 | 0,6705 | 0,0400 | 0,4927 | 0,5788 |
| 4 | 0,0000 | 0,0000 | 0,0083 | 0,0093 | 0,4123 | 0,0000 | 0,0000 | 0,0000 |
| 5 | 1,0000 | 1,0000 | 0,0112 | 0,0095 | 0,4481 | 0,0013 | 1,0000 | 1,0000 |
| 6 | 0,0205 | 0,3717 | 0,6504 | 0,6743 | 0,5276 | 0,6776 | 0,4239 | 0,4487 |
| 7 | 0,0364 | 0,0842 | 0,0501 | 0,0500 | 0,7987 | 0,0381 | 0,1240 | 0,1319 |
| 8 | 0,0288 | 0,3753 | 0,3638 | 0,3775 | 0,9091 | 0,3242 | 0,3754 | 0,5037 |
| 9 | 0,0232 | 0,0790 | 0,0000 | 0,0000 | 0,0000 | 0,0052 | 0,1037 | 0,0952 |

Source: Own Elaboration

### Step 3: Calculation of Criterion Weights

**Table 6.** Criterion Weights

| Year | Operating Profitability Ratio (OPR) | Return on Sales (ROS) | Current Ratio (CR) | Quick Ratio (QR) | Debt Assets Ratio (DAR) | Cash Ratio (CAR) | Return on Equity (ROE) | Return on Asset (ROA) |
|---|---|---|---|---|---|---|---|---|
| 2015 | 0,124 | 0,117 | 0,126 | 0,127 | 0,145 | 0,125 | 0,118 | 0,117 |
| 2016 | 0,118 | 0,101 | 0,128 | 0,129 | 0,149 | 0,132 | 0,127 | 0,115 |
| 2017 | 0,106 | 0,112 | 0,129 | 0,131 | 0,142 | 0,134 | 0,126 | 0,120 |
| 2018 | 0,124 | 0,110 | 0,124 | 0,123 | 0,142 | 0,128 | 0,112 | 0,137 |
| 2019 | 0,127 | 0,115 | 0,126 | 0,124 | 0,134 | 0,134 | 0,117 | 0,124 |
| 2020 | 0,117 | 0,105 | 0,140 | 0,137 | 0,144 | 0,141 | 0,099 | 0,116 |
| 2021 | 0,121 | 0,117 | 0,132 | 0,134 | 0,123 | 0,138 | 0,114 | 0,121 |

Source: Own Elaboration

After the criteria weights were found, these weights were transferred to the ROV method. The results and the ranking of the years according to the final scores are shown in Table 7.

**Table 7.** Ranking by Performance

| COMPANY CODE | 2015 Ranking | 2016 Ranking | 2017 Ranking | 2018 Ranking | 2019 Ranking | 2020 Ranking | 2021 Ranking |
|---|---|---|---|---|---|---|---|
| MERIT | 3 | 2 | 2 | 4 | 3 | 3 | 6 |
| KSTUR | 2 | 1 | 1 | 2 | 1 | 2 | 1 |
| PKENT | 7 | 9 | 5 | 5 | 5 | 5 | 5 |
| TEKTU | 4 | 6 | 4 | 7 | 8 | 8 | 8 |
| UTPYA | 8 | 7 | 8 | 8 | 6 | 9 | 2 |
| MAALT | 1 | 3 | 3 | 1 | 2 | 1 | 3 |
| AYCES | 6 | 5 | 6 | 6 | 7 | 6 | 7 |
| AVTUR | 5 | 4 | 9 | 3 | 4 | 4 | 4 |
| MARTI | 9 | 8 | 7 | 9 | 9 | 7 | 9 |

Source: Own Elaboration

## 5. Conclusion

This study utilized the range of values (ROV) method to assess and compare the financial performance of tourism companies listed on Borsa Istanbul (BIST) from 2015 to 2021. The data set consists of seven years of financial statements sourced from the official websites of BIST and KAP. The use of the ROV method, which has not been previously used to evaluate the financial performance of tourism companies on BIST, adds novelty to this research. The analysis identified leverage ratio as the most significant financial indicator for evaluating the performance of these companies. The results revealed that MAALT outperformed KSTUR in 2015, 2018, and 2020, while KSTUR demonstrated superior performance in 2016, 2017, 2019, and 2021. Companies such as MARTI showed consistently weak performance over multiple years, whereas UTPYA, which generally ranked low, exhibited the second-best performance in 2021, a notable outcome during the pandemic. Conversely, MERIT, which ranked third during the pandemic, will drop to sixth place by 2021. These fluctuations in financial performance highlight the importance of multi-criteria decision-making (MCDM) methods in analyzing complex financial structures involving various metrics and alternatives.

Several previous studies have also applied MCDM techniques to assess the financial performance of tourism companies, although the findings have varied. For example, Yılmaz and Aslan (2017) employed

the TOPSIS method and found that MAALT was the best performer in 2015 and 2016. In contrast, Erdoğan and Yamaltdinova (2018) applied a different version of the TOPSIS method, identifying METUR as the top company in 2015, while AYCES ranked the lowest. Other studies yielded varying results depending on the method employed and the year analyzed. For instance, in a study by Karakaş and Öztel (2020), using the entropy-based TOPSIS model, MAALT, which performed well in other studies, ranked last between 2015 and 2018. These discrepancies across studies can be largely attributed to the lack of standardized performance criteria in the tourism sector's financial performance evaluations. While this study employed the ROV method and weighted financial ratios to prioritize specific performance indicators, other studies utilized methods such as EDAS, MAIRCA, and ENTROPY with differing criteria, resulting in varied rankings of companies. Such differences suggest that the choice of the evaluation method and the specific financial criteria applied can significantly influence performance outcomes. The findings of this study provide essential benchmarks for future comparisons and underscore the necessity of standardizing performance metrics in the tourism industry.

Further, the insights derived from this research emphasize critical areas of financial analysis such as liquidity, asset management, debt management, profitability, and market value. These elements are crucial to understanding the financial health and operational efficiency of companies in the tourism sector. The ROV method offers a dynamic framework for evaluating strategic financial options such as investment timing, scaling operations, or even project abandonment. This flexibility in assessment makes the ROV method particularly useful for industries such as tourism, which are subject to external economic shocks and fluctuating market conditions such as those experienced during the COVID-19 pandemic. For future research, a more detailed analysis of tourism subsectors, such as accommodation, travel services, and recreational facilities, is recommended to identify the specific drivers of financial performance. Additionally, longitudinal studies covering extended periods would provide valuable insights into the long-term trends and effects of strategic initiatives such as sustainability measures. Future analyses could explore different MCDM methods using the same set of financial ratios to evaluate their consistency and robustness. This would enable a more comprehensive understanding of the most effective tools for assessing the financial performance in the tourism sector.

Incorporating qualitative approaches, such as case studies, expert interviews, and surveys, alongside quantitative methods could further enrich the findings. Such methods would provide insights into the operational challenges and strategic decisions that shape financial performance, offering a more holistic view of company dynamics. Moreover, qualitative data would help explain some of the performance anomalies observed in quantitative analyses, such as the unexpected performance of the UTPYA during the pandemic. In conclusion, this study provides valuable insights into the financial performance of tourism companies traded on the BIST, particularly through the application of the ROV method. These findings provide a benchmark for future studies and have practical implications for stakeholders in the tourism and financial sectors. By addressing the methodological limitations identified in this study, future research could offer a more standardized and comprehensive framework for evaluating the financial health of tourism enterprises. Additionally, expanding the scope to include subsector analysis and integrating both quantitative and qualitative approaches would enhance the overall understanding of financial performance in this dynamic industry. These improvements would enable more informed decision-making and foster a deeper comprehension of the financial structures driving success in Turkey's tourism sector.

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