

Article

Navigating Financial Frontiers in the Tourism Economies of Kosovo and Albania during and beyond COVID-19

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Abstract: The problem addressed in this study is the profound impact of the COVID-19 pandemic on the tourism economies of Kosovo (KOS) and Albania (AL), which led to economic–financial stagnation and price increases. The aim was to analyze the financial frontier challenges facing the tourism industry during COVID-19 and beyond and propose effective strategies for shaping a sustainable future for countries within Europe with great potential for tourism development in the current decade. The survey was conducted in 102 locations, including cities, municipalities, regions, villages, and neighborhoods in both countries over the years 2020–2023, while data analysis was performed using a cluster analysis (K-means and hierarchical) and the multidimensional scaling method (Alscal). The results highlighted (a) the severe impact of COVID-19 on both the population and businesses in the tourism sector, which will persist beyond the pandemic, (b) the indispensable role of government intervention in alleviating the financial crisis, (c) the need for innovative approaches and accurate financial management by both the country and businesses to attract tourists, and (d) the importance of control and management for financial sustainability. This paper is of significant importance to tourism destinations as it provides insights into the severe impact of COVID-19 on both the population and businesses in the tourism economies. By highlighting the indispensable role of government intervention, the need for innovative approaches and accurate financial management, and the importance of control and management for financial sustainability, the study offers valuable guidance for tourism destinations in navigating the current crisis and attracting tourists. Furthermore, the paper emphasizes the need for future studies to explore opportunities for long-term financial resilience and growth, contributing to the development of sustainable tourism destinations.

Keywords: financial frontiers; tourism economies; COVID-19; financial econometrics; empirical studies



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1. Introduction

COVID-19 brought a wide range of problems at various levels, as well as a number of challenges. Most countries' economic, financial, and social systems were disrupted, and it will be tough to assess short- and long-term consequences (Villacé-Molinero et al. 2021). The tourism and hospitality sector has been hit harder than any other industry, and the consequences will be felt well into the future (Dube et al. 2020). The fear of COVID-19 affected all industries, but the tourism industry was particularly shocked by the measures taken by all countries. The tourism industries in Albania and Kosovo, in particular, have been significantly affected by COVID-19, leading to a crisis due to their status as a significant contributor to their respective economies.

This study delves into the complex landscape of financial frontiers within the tourism sector and explores the profound impact of the pandemic on both nations. The capitals of Kosovo and Albania, as well as several other cities in the region, were under quarantine. As a result, restaurants and non-essential retail stores were closed. This led to the suspension of

flights and the closure of tourism and hospitality facilities. The tourism sector was severely impacted by COVID-19, making it one of the hardest-hit industries. In Albania and Kosovo, the 'lockdown' started on 13 March 2020, shutting tourism and hospitality businesses. The industry resulted in a loss of up to 50 billion dollars in spending and a decline in international tourist arrivals by up to 3% worldwide. The implementation of restrictions on passenger transportation to prevent close contact between travelers, including buses, trains, and airplanes, has hurt the sector (UNWTO 2020). Regarding navigating frontiers in the tourism economies of Kosovo according to Lulaj et al. (2022) it is emphasized that the lack of resources (staff, funds, infrastructure, tools, etc.) as well as the allocation of public expenditures to increase economies in the development of tourism should be right and according to priorities and funding (Lulaj 2021).

Researchers (Lin et al. 2022) have highlighted that economic and financial development leads to a change in the financial structure of countries and companies, in this case it is essential to understand that economic development involves a gradual shift from reliance on financial intermediaries to market-driven mechanisms. Meanwhile, Cagliesi and Guidi (2021) stated that the global financial crisis caused by COVID-19 has negatively impacted the level of integration of companies in the market. This transition has significant implications for the growth trajectories of tourism economies. Moreover, the findings of Agrawal et al. (2022) underscore the importance of minimizing operating costs in the context of financial frontiers. Furthermore, Zhang et al. (2015) showed that the use of dynamic models provides a better fit to empirical data compared to static models, especially concerning the financial frontiers relevant to the tourism economies of different countries.

Tang et al. (2024), on the other hand, highlighted the importance of monitoring real estate and stock market conditions to accelerate recovery from shocks during pandemic. Kohler et al. (2023) investigated external monetary vulnerability to global financial frontier uncertainty shocks from COVID-19 and their impact. However, Hsiao et al. (2023) found that the effects of financial acceleration of foreign business risk challenges on the domestic economy are insignificant. Finally, Xie et al. (2023) suggested that countries should move towards a development stage driven by innovation and governance based on accurate financial strategies after global financial frontiers.

Therefore, the novelty of this article compared to the previous literature lies in its comprehensive analysis of the financial frontiers faced by the tourism economies in the midst of the COVID-19 era and beyond. This study goes beyond mere analysis by conducting a comprehensive survey in 102 different locations, spanning various geographical areas in both countries. The objective is to assess the importance of tourism to the economies of Kosovo and Albania and its impact on their financial development. By unraveling the complex financial shocks faced by the tourism industry, this study aims to provide valuable insights and effective strategies for the recovery of tourism economies in these nations, which can be replicated in other countries with the same characteristics. The research questions addressed in this article include (1) What is the significance of tourism in the economies of Kosovo and Albania? (2) How has the tourism sector been affected by the COVID-19 pandemic? (3) What are the financial shocks and challenges faced by the tourism industry in these countries?

The research of the complex financial challenges faced by the tourism industry in Kosovo and Albania is a gap that should be reduced because understanding the financial frontiers and their impact on the tourism sector will improve the development of effective strategies and help foster a resilient and sustainable future for the industry in these countries. As this research unfolds, the primary goal is to dissect and illuminate a path towards sustainable financial frontiers for the tourism industry in Kosovo (KOS) and Albania (AL). The findings promise to provide critical insights that go beyond mere analysis and serve as a beacon for effective strategies in the recovery and future development of the tourism sector in these nations.

2. Literature Review and Developing Hypotheses

Tourism contributed approximately 8.5 percent (1.12 billion dollars) to Albania's GDP in 2017 and 9.3 percent to Kosovo's GDP in 2019, in this case Kosovo experienced a significant decline in foreign tourists, with a projected decline of 29%, much higher than the global decline of 3.99% recorded in 2009 (UNWTO 2020). The tourism industry in these countries, both of which have achieved high levels of human development, plays an important role in their GDP and enhances the well-being of their inhabitants. The pandemic disrupted Albania's positive economic trend, particularly affecting its financial statements, with 50% of revenues coming from Kosovo. The earthquake in 2019 and the subsequent impact of COVID-19 made 2020 one of the most challenging years for the economy and public finances in the last thirty years (Ministry of Finance 2023).

According to Eurostat, the tourism industry in the European Union is recovering strongly after COVID-19, with the first half of 2023 seeing the highest number of nights spent in tourist accommodation in the last decade. This is a positive indicator for the industry in many countries, with significant increases in overnight stays compared to previous years (Eurostat 2024).

Despite challenges, Albania's tourism industry is showing signs of recovery, with over 10 million tourists expected in 2023. In Kosovo, the economic situation improved in 2021 due to measures to support businesses and families, with around 5 million tourists in 2022, which had a positive impact on the country's finances (Ministry of Finance, Labour and Transfers 2024). Funding from various sources, including the Ministry of Culture, Youth and Sport (MCYS) and the Ministry of Agriculture Forestry and Rural Development (MAFRD), along with municipal support, is allocated for tourism development through cultural heritage. Funding and investment in innovative strategies are important in overcoming the impact of the COVID-19 pandemic on tourism destinations and in increasing financial stability (Lulaj et al. 2024). The relationship between tourism's financial statements and the economic development of Albania and Kosovo is significant. The impact of COVID-19 on the tourism industry in these countries poses challenges but also presents opportunities for sustainable development.

Tourism is a sector that is sensitive to local and national socio-economic development and relies heavily on energy use. Many studies have used stock price fluctuations to analyze the level of impact of different macroeconomic and non-macroeconomic forces on the tourism industry (Anguera-Torrell et al. 2021). Studies suggest that fluctuations in natural resource prices can have a negative impact on economic growth (Huang and Lei 2022). While limited prior literature directly addresses the impact of epidemics or pandemics on financial markets, lessons can be drawn from the experience of natural disasters (Goodell 2020). The main challenge lies in estimating the specific impact of COVID-19 on financial statements and its link to the tourism sector in Albania and Kosovo (Kapecki 2020). The tourism industries in these countries should position themselves as a unified destination to attract tourists and inspire new adventures (Matiza 2020).

As per Cardoso et al. (2021), the Swiss TL&HM-SR (Swiss Tourism, Leisure and Hospitality Management Scientific Research) performance indicator is a valuable tool for stakeholders looking to enhance sustainability performance through strategic destination management. In terms of financial development through tourism economies, Cardoso et al. (2020) highlight the significant role played by TLHM (Tourism, Leisure, and Hospitality Management).

According to Maehara et al. (2024), financing inclusion emerges as a pivotal and multifaceted concern that has garnered significant traction on the global stage in recent years. Regarding navigating frontiers in the tourism economies of Kosovo and Albania during and after COVID-19, according to Lulaj (2022), it is emphasized that there was a large increase in expenses, as well as to remove the consequences of the pandemic, countries (KOS and AL) must collect taxes to influence the growth of tourism, the economies, and financial development in general (Lulaj and Dragusha 2022). Ante and Saggiu (2024) emphasize the strategic considerations essential for stakeholders to effectively plan, utilize,

and influence economic activities, thereby enhancing comprehension and optimization within a rapidly evolving economy.

Hence, by drawing on the literature of various authors, hypotheses can be formulated as important and valid. Then, the following hypothesis was formulated:

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H₀: *There is no significant difference between the observation groups in terms of navigating financial frontiers in the tourism economies of Kosovo and Albania during and beyond COVID-19*

$$\text{if } x^2 > x^2_{\alpha(r-1)\alpha(c-1)} - H_0 \text{ rejected}$$

$$\text{if } x^2 < x^2_{\alpha(r-1)\alpha(c-1)} - H_0 \text{ not rejected}$$

3. Materials and Methods

3.1. The Purpose of the Paper

The purpose of this paper is of particular importance, including important issues such as the impact of COVID-19 on financial frontiers and its consequences after COVID-19, and to look at the opportunities for the sustainability of the tourism industry through the indicators taken in this study. Thus, the main goal is to analyze the financial frontier shocks and challenges faced by the tourism industry during and beyond COVID-19 and to propose effective strategies. By pursuing these goals and utilizing the variables considered in the study, the formulated hypotheses will be confirmed through the analysis of the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS) created using an econometric model.

3.2. Data Collection

The study was conducted in 102 locations, including cities, municipalities, regions, villages, and neighborhoods during the years 2020–2023 in Albania (AL) and Kosovo (KOS). Participants who were experts in the fields of economics, finance, and tourism willingly completed a questionnaire addressing navigating financial frontiers in the tourism economies during and beyond COVID-19 (KOS and AL). The questionnaire was conducted in two countries (AL and KOS). The questionnaire (Appendix A) was designed based on the studies referenced by the authors of this paper, utilizing Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 1 presents the description of the variables related to navigating financial frontiers in the tourism economies of Kosovo and Albania during and beyond COVID-19. The main factors F1 [(Effectiveness of inhibitory measures in preventing the spread of COVID (navigating financial frontiers in the tourism economies COVID-19 (KOS and AL)), and F2 [State support for tourism economies beyond COVID-19 in both countries] are highlighted beyond COVID-19 in both countries (KOS and AL) (the aspect of financial frontiers growth in KOS and AL beyond COVID-19)]. Ten variables (F1–10) were analyzed in the first factor (F1), while five variables were analyzed in the second factor (F2), which were explained in the introduction and literature review section, taking into account the contributions of different authors, while the contributions of other authors will be presented for each variable and research findings in the discussion section.

Table 1. Definition and description of the study variables.

Items	A. Effectiveness of Inhibitory Measures in Preventing the Spread of COVID-19 ((Navigating Financial Frontiers in the Tourism Economies during COVID-19 (KOS and AL)
F1.1	Collection of health information by tourists (ex. temperature control, COVID testing, etc.)
F1.2	International travel restrictions
F1.3	Restrictions on domestic and regional travel

Table 1. Cont.

F1.4	Mandatory quarantine for visitors
F1.5	Physical distance in travel and tourism
F1.6	Mandatory use of masks in travel and tourism
F1.7	Mandatory use of COVID-19 tracking applications
F1.8	Hygiene training for staff in travel and tourism
F1.9	Regular testing of workers' infection in travel and tourism
F1.10	Vaccination against COVID-19
B. State support for tourism economies beyond COVID-19 in both countries (KOS and AL)-(the aspect of financial frontiers growth in KOS and AL beyond COVID-19)	
F2.1	Financial support and stimulus packages to shape sustainability in the tourism industry
F2.2	Changes in tourism demand and consumer behavior through innovation and accurate financial management
F2.3	The impact of control and management on the financial sustainability of the tourism industry due to financial shocks and revenue loss
F2.4	Adaptation strategies for financial resilience in the tourism industry
F2.5	Investing in sustainable tourism practices for long-term financial growth and shaping sustainability

Source: Prepared by the authors.

3.3. Data Analysis

To test the hypothesis defined, two models were used: Cluster Analysis (K-means Cluster and Hierarchical Cluster) and Multidimensional Scaling Method (Multidimensional Scaling-Alscal), in conjunction with relevant tests appropriate for these analyses (e.g., Chi-Square, ANOVA, Friedman test, and Z-test).

The analysis has undergone several processes to ensure the model's validity. Using SPSS version 23.0 for Windows, certain factors were eliminated from the model. In this particular case, 15 variables (Table 1) were tested and categorized into three groups: Gr1 AL, Gr2 KOS, and Gr3ALKOS. Distances between groups and variables were measured for both countries. Group analysis, being a statistical method that involves multiple variables, classifies data based on their similarities (Hastie et al. 2009) according to the algorithms of the groups contributed by the authors (Yuan and Yang 2019), as well as according to maximum expectations (Ankerst et al. 1999). Returning to the idea of these econometric models (Steinhaus 1957). The term "K-means" was used for the first time by (MacQueen 1967). Jain, Duin, and Mao suggest trying some algorithms to gain the best possible understanding of the database (Lloyd 1982). Cluster analysis is efficient and effective if it includes as few groups as possible and should be statistically significant (Sig., 0.000). In this case, all the variables and the interviewers of Albania and the state of Kosovo were divided into three groups ($k = 3$). To calculate the distance between these groups, Euclidian distance was used

$$dE = \sqrt{\sum_i^k (c_i - x_i)^2} \tag{1}$$

where c_i represents the centroid (center) of the groups, x_i represents the data points of each group being compared (Gr1AL, Gr2KOS, and Gr3ALKOS), and (k) is the total number of dimensions of these groups ($k = 3$).

Euclidian Square distance was used for the model of financial frontiers for navigating challenges through tourism economies during and beyond COVID-19 (KOS and AL):

$$dE^2 = \sum_i^k (c_i - x_i)^2 \tag{2}$$

Therefore, in Equations (1) and (2), C_i represents the center of the groups, which are the variables and interviewers of Albania and Kosovo divided into three groups (Gr1AL, Gr2KOS, and Gr3ALKOS). X_i represents the comparison of these groups, and k represents the total dimensions of the groups.

Also, in K-means (Cluster analysis for shock effects), Manhattan distance was used:

$$dMht = \sum_i^k |c_i - x_i| \tag{3}$$

or the maximum distance between the distribution of vectors for the shock effects on navigating financial frontiers through tourism economies in both countries (KOS and AL) during and beyond COVID-19. Therefore, Equation (3) uses the Manhattan distance, which is the maximum distance between the distribution of the vectors for the shock effects on the financial frontiers through the tourism economies in both countries (AL and KOS).

Equation (4) represents the minimization of the variance within groups ($n = 3$) through the K-means algorithm. $dMax_i$ represents the number of cases included in the cluster (k) for both countries AL and KOS, and the collection technique of (Gr1AL, Gr2KOS, and Gr3ALKOS) the groups is used for minimizing the variance.

$$dMax_i = 1, \dots, k = \sum_i |c_i - x_i| \tag{4}$$

The algorithm (K-means) represents the minimization of quantities of variance within groups ($n = 3$) through the equation

$$E = \sum_i^k \sum_{j=1}^{ni} \|X_{ij} - C_i\|^2 \tag{5}$$

ni is the number of cases included in the cluster (k AL and KOS) and $\sum_1^k ni = n$ is the collection technique of (Gr1AL, Gr2KOS, and Gr3ALKOS) groups for the minimization of variance (102R). Mathematically, the K-means analysis is a model that is estimated through maximum probabilities. The equation for shock research through tourism in financial frontiers for AL and KOS.

Equation (6) represents the equation for challenges research through tourism in financial frontiers for Albania and Kosovo. The data space has dimensions (d), and equation C helps minimize and solve the problem of challenges of the financial frontier for the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS).

$$[x_1, x_2, \dots, x_n] \in R^d \tag{6}$$

where, (R^d) is the data space with dimensions (d). Equation

$$C = [c, c_2, \dots, c_n] \in R^d \tag{7}$$

helps to minimize and solve the problem of shocks and challenges for the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS)

$$E = \sum_{i=1}^k \sum_{j=1}^n d(C_i, X_{ij}) \tag{8}$$

is discreet distribution of financial frontiers $d(C_i, X_{ij})$ in research,

$$E = \sum_{i=1}^k \int p(x) d(c_i X_{ij}) dx \tag{9}$$

The abbreviations used in (9) are the continuous distribution in the model of financial frontiers, $p(x)$ is the function of probability density, and (d) is the function of the distance between cases of variables. While looking at the impact of the Stress test on the multidimensional measurement for navigating financial frontiers in the tourism economies during and beyond COVID-19, statistics z is used.

$$\text{Stress}_D(x_1, x_2, x_N) = \left(\sum_{i \neq j=1 \dots N} (d_{ij} - \|x_i - x_j\|)^2 \right)^{\frac{1}{2}} \tag{10}$$

$$\text{Stress}_D(x_1, x_2, x_N) = \left(\frac{\sum_{ij} (\sum_{ij} - \|x_i - x_j\|)^2}{\sum_{ij} d_{ij}^2} \right)^{\frac{1}{2}} \tag{11}$$

where, (p: d_{ij}^0 and $-d_{ij}^2$) are the distance control exponents for navigating financial frontiers. The data were analyzed as highlighted above for three groups in (AL and KOS) looking at their impact on financial frontiers in both countries or denoted by (M) in which the function of distance is defined (d_{ij} = distance between cases and variables (i, y).

4. Results

In the results section of the study, the data were analyzed using two methods:

- Cluster analysis of navigating financial frontiers in the tourism economies of Kosovo and Albania during and beyond COVID-19

This analysis grouped the data based on similarities in the observed navigating financial frontiers in the context of tourism economies during and beyond COVID-19. The clusters were formed for two countries, Kosovo (KOS) and Albania (AL).

- Multidimensional measurement of navigating financial frontiers in the tourism economies of Kosovo and Albania during and beyond COVID-19

This analysis focused on measuring the navigating financial frontiers in the context of tourism economies during and beyond COVID-19 using a multidimensional approach.

4.1. Cluster Analysis of Navigating Financial Frontiers in the Tourism Economies of Kosovo and Albania during and beyond COVID-19

Table 2 Based on the results, the analysis was conducted in 102 locations, including cities, communes, regions, neighborhoods, municipalities, and villages, in two countries, Albania (AL) and Kosovo (KOS). The analysis aimed to examine the navigating financial frontiers of the tourism economies during and beyond COVID-19 in both countries (KOS and AL). The Euclidean squared distance and the Ward method were utilized in the analysis to assess these shocks and challenges.

Table 2. Case Processing summary of both factors (Factor I during the pandemic and Factor II—beyond the pandemic).

Case Processing Summary ^{a,b}					
Albanian/Kosovo					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
102	100.0	0	0.0	102	100.0

Source: Prepared by the authors. Note: ^a Squared Euclidean Distance used, ^b Ward Linkage.

Figure 1 illustrates the maps of two countries, Albania (AL) and Kosovo (KOS), figuratively presenting the clustering of groups in 102 locations included in the research, as detailed in Table 1. Thus, Southeast European countries depend heavily on tourism, with Albania standing out due to its significant natural and cultural heritage. Blue tourism plays a pivotal role in Albania’s GDP, capitalizing on diverse landscapes within a compact space, and Kosovo benefits from a favorable climate and abundant natural resources, establishing a robust foundation for tourism (Tase and Lulaj 2022). The cities as cluster groups where questionnaires were conducted encompass Tirana, Durres, Fier, Shkodra, Pristina, Peja, Prizeren, Gjakova, Klina, and Istog, covering urban centers, surrounding villages, districts, and neighborhoods.

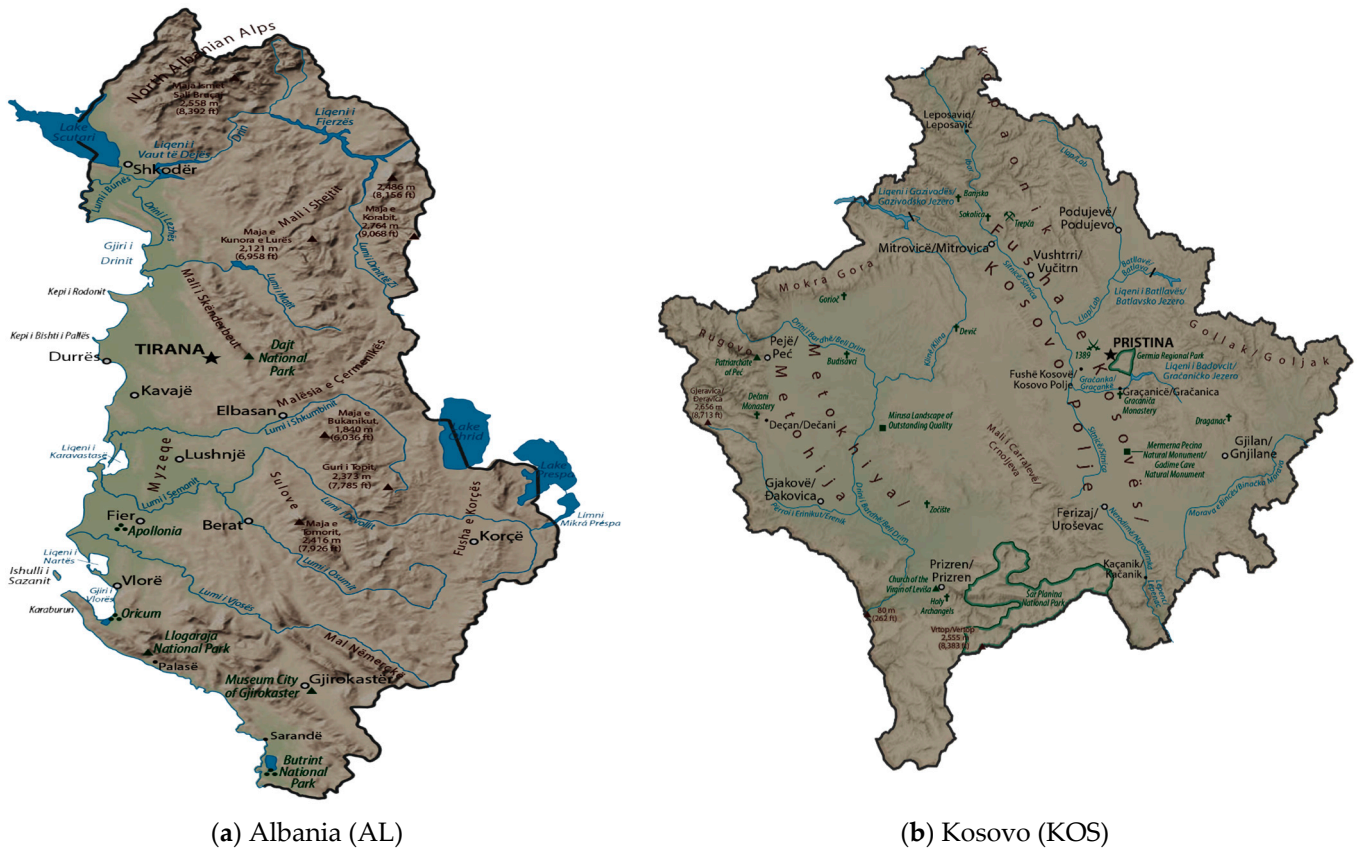


Figure 1. Map for Cluster ((a) is Albania (AL) and (b) is Kosovo (KOS)). Source: Paper (Tase and Lulaj 2022).

Table 3 presents the final data of the groups navigating financial frontiers in the tourism economies of Kosovo and Albania during and beyond COVID-19 (KOS and AL). The analysis includes three observations across 10 variables for three groups of residents from Albania and Kosovo (AL and KOS). In variable (F1.1 = 4.40), Group 3 (Gr3) provided the highest response, highlighting that the lack of information about tourists (e.g., COVID-19 tests) may result in financial shocks and challenges caused by an increase in COVID-19 cases among individuals who had contact, particularly within the hotel industry.

For variable (F1.2 = 4.09), Gr3 gave a higher response, emphasizing that restrictions on international travel have significantly impacted the financial development of Kosovo and Albania in terms of tourism and hospitality. Regarding variable (F1.3 = 4.14), Gr3 once again provided higher responses, emphasizing that both internal and regional restrictions have severely affected the financial frontiers during the pandemic, with lingering consequences even after its end. In relation to variable (F1.4 = 3.86), Gr3 had a higher response indicating that mandatory quarantine measures for visitors–tourists have deterred many tourists from visiting Kosovo and Albania, resulting in adverse effects on financial development and the hotel industry, with consequences extending beyond the pandemic.

As for variable (F1.5 = 4.16), Gr3 emphasizes that physical distancing measures in travel and tourism have saved lives by reducing virus transmission. However, this has also led to a decrease in the number of individuals visiting hotels, restaurants, cafes, shops, markets, etc., impacting financial development and carrying consequences even after the pandemic in both Albania and Kosovo. Regarding variable (F1.6 = 4.16), Gr3 highlights that the mandatory use of masks in travel and tourism has significantly limited people’s movement except in emergencies. This has had negative implications for the economy and financial development, resulting in a reduced number of individuals affected by COVID-19 measures from both countries and carrying consequences even after the pandemic. Further, the variable (F1.7 = 4.00) emphasizes that the mandatory use of COVID-19 tracking

applications has increased costs for the economies of both countries due to the procurement and provision of various materials (masks, gloves, medical and hygienic supplies) in institutions and the hotel industry.

Table 3. Final Cluster Centers for Albania (AL) and Kosovo (KOS) about Factor I during COVID-19 pandemic.

Variables	Final Cluster Centers		
	Effectiveness of inhibitory measures in preventing the spread of COVID-19 (navigating financial frontiers in the tourism economies of Kosovo (KOS) and Albania (AL))		
	Cluster		
	Gr1 AL	Gr2 KOS	Gr3 AL and KOS
F1.1—Collection of health information by tourists (e.g., temperature control, COVID testing, etc.)	3.62	3.27	4.40
F1.2—International travel restrictions	2.41	2.68	4.09
F1.3—Restrictions on domestic and regional travel	2.08	2.55	4.14
F1.4—Mandatory quarantine for visitors	2.32	2.50	3.86
F1.5—Physical distance in travel and tourism	3.59	2.50	4.16
F1.6—Mandatory use of masks in travel and tourism	3.68	2.41	4.16
F1.7—Mandatory use of COVID-19 tracking applications	3.22	2.09	4.00
F1.8—Hygiene training for staff in travel and tourism	4.19	3.55	4.37
F1.9—Regular testing of workers’ infection in travel and tourism	4.08	3.00	4.44
F1.10—Vaccination against COVID-19	3.76	2.00	4.26

Source: Prepared by the authors.

Compliance with pandemic measures has incurred additional costs, carrying consequences even after the pandemic. For variable (F1.8 = 4.37), it is highlighted that both countries have invested in hygiene training for staff in travel and tourism to prevent COVID-19 transmission. Variable (F1.9 = 4.44) highlights that both countries have conducted regular testing of workers in travel and tourism to prevent the spread of the virus. While it has prevented the virus from spreading, it has also caused shocks to the economy and financial development due to the measures implemented by governments, resulting in consequences even after the pandemic.

The variable (F1.10 = 4.26) underscores the importance of the COVID-19 vaccination in gradually reviving the economy and financial growth. The reopening of restaurants, hotels, and other tourism-related businesses has contributed to a gradual recovery of economic and financial development in both countries. During the COVID-19 period, the two variables that held significant importance were (F1.1 = 4.19), namely collecting information on the countries most affected by COVID-19 and regular testing. Countries heavily impacted by the virus experienced extensive closures of businesses, including in the manufacturing and service sectors, leading to job losses and reduced tourist inflow. This adversely affected the countries’ income and the welfare of their inhabitants and had a minor impact on economic and financial recovery due to testing costs and the provision of medical and hygiene supplies.

The hotel industry also suffered from compliance with government measures, further hindering recovery of the navigating financial frontiers in tourism economies of Kosovo (KOS) and Albania (AL) during and beyond COVID-19. Therefore, the analysis in Table 2 reveals significant findings regarding the financial frontiers for navigating financial frontiers through tourism economies during and beyond COVID-19 in both countries (KOS and AL). Group 3 (Gr3) consistently provided higher responses across various variables, indicating the profound impact of factors such as a lack of tourist information, travel restrictions, quar-

antifine measures, physical distancing, mask usage, tracking applications, hygiene training, regular testing, and vaccination on the financial frontiers and shaping the sustainability of Albania and Kosovo. These findings highlight the complex interplay between the pandemic and the tourism sector, emphasizing the need for comprehensive strategies to address the challenges and ensure a sustainable recovery in the post-pandemic era.

In Table 4, the results of the ANOVA test reveal significant differences between the variables, indicating that the distribution of group observations during the COVID-19 pandemic is not random. The distances between the Final Cluster Centers indicate that the first group is positioned between the second and third groups. Additionally, the Friedman test statistics demonstrate a significant difference among the variables influencing financial shocks and challenges in the tourism industry of both Albania and Kosovo (AL and KOS). These findings reject the null hypothesis (H_0), confirming that there are differences between the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS).

Table 4. Final Cluster Centers about Albania (AL) and Kosovo (KOS) for Factor I during the pandemic.

ANOVA							Friedman
Effectiveness of inhibitory measures in preventing the spread of COVID-19 (navigating financial frontier shocks through tourism during pandemic)							Test
Variables	Cluster		Error		F	Sig.	Mean ranks
	Mean Square	df	Mean Square	df			
F1.1	10.999	2	0.781	99	14.078	0.000	6.42
F1.2	31.752	2	0.680	99	46.694	0.000	4.57
F1.3	45.690	2	0.580	99	78.840	0.000	4.29
F1.4	27.110	2	0.836	99	32.425	0.000	4.00
F1.5	20.120	2	0.609	99	33.044	0.000	5.47
F1.6	22.513	2	0.902	99	24.963	0.000	5.83
F1.7	26.745	2	1.092	99	24.496	0.000	4.93
F1.8	5083	2	0.517	99	9833	0.000	6.98
F1.9	15.319	2	0.620	99	24.716	0.000	6.76
F1.10	37.855	2	0.939	99	40.298	0.000	5.74
Distances between Final Cluster Centers					Test Statistics—Friedman test		
Cluster	1	2	3	N	102		
1		3030	3410	Chi-Square	158,065		
2	3030		4998	df	9		
3	3410	4998		Asymp. Sig.	0.000		

Source: Prepared by the authors. if $\chi^2 < \chi^2_{\alpha(r-1)(c-1)}$ —rejected H_0 .

Table 5 presents the final data of the groups after the COVID-19 pandemic, focusing on the state support for tourism economies beyond COVID-19 in both countries (KOS and AL) and its effect on the aspect of financial frontiers growth. The analysis includes three observations across five variables in both Albania and Kosovo (AL and KOS) for all three groups (Gr1AL, Gr2KOS, and Gr3ALKOS). In the variable (F2.1 = 3.10), the highest response was given by Gr3, which emphasizes the importance of financial support and stimulus packages of the states (KOS and AL) to shape sustainability in the tourism industry due to the big shocks and challenges that hotels, restaurants and businesses in general in the tourism industry experienced during COVID-19, influencing the draw of tourists to tourist attractions to strengthen financial frontiers. Therefore, governments should consider measures to support financial growth through tourism. For the variable (F2.2 = 3.00), the highest response was given by Gr3, which emphasizes the importance of

innovation and accurate financial management by the tourism industry and governments. This has a significant impact on economic growth and financial development through tourism because tourists want innovation to attract their attention to visit tourist attractions. In the variable (F2.3 = 4.50), Gr3 gave a higher response, emphasizing the impact of control and management on the financial stability of the tourism industry by countries and business managers due to financial shocks and loss of income. This plays a crucial role in stimulating post-pandemic economic growth and financial development while reducing the shocks experienced during the pandemic. In the variable (F2.4 = 3.00), Gr3 gave a higher response, emphasizing the importance of adaptation strategies for financial stability in the tourism industry for both countries. Therefore, the strategy of innovation in prices, technology, offers, and tourist attractions increases financial sustainability after COVID-19. In the variable (F2.5 = 4.93), Gr3 gave a higher response, emphasizing the importance of investing in valuable training practices for long-term financial growth and the formation of compassion. Therefore, both businesses and governments in both countries should pay attention to this variable.

Table 5. Final Cluster Centers about Albania (AL) and Kosovo (KOS) for Factor II beyond COVID-19.

Final Cluster Centers			
State support for tourism economies beyond COVID-19 in both countries (KOS and AL)-(the aspect of financial frontiers growth in KOS and AL beyond COVID-19)			
Variables	Cluster		
	Gr1 AL	Gr2 KOS	Gr3 AL and KOS
F2.1—Financial support and stimulus packages to shape sustainability in the tourism industry	2.00	2.94	3.10
F2.2—Changes in tourism demand and consumer behavior through innovation and accurate financial management	3.00	3.86	4.00
F2.3—The impact of control and management on the financial sustainability of the tourism industry due to financial shocks and revenue loss	4.00	3.46	4.50
F2. 4—Adaptation strategies for financial resilience in the tourism industry	2.00	2.87	3.00
F2.5—Investing in sustainable tourism practices for long-term financial growth and shaping sustainability	3.30	3.72	4.93

Source: Prepared by the authors.

The analysis presented in Table 4 highlights the importance of key factors in the financial frontiers through tourism and the hotel industry after the COVID-19 pandemic. In summary, the analysis suggests that financial support, innovation, effective control and management, adaptation strategies, and investment in training practices are key factors in navigating financial frontiers through tourism economies and the hotel industry in the post-COVID-19 era.

Table 6 presents the results of the ANOVA test, demonstrating the significance of all data points and the normal differences between variables. However, the distribution of observations across groups is not random after the COVID-19 pandemic. Based on the distance between the Final Cluster Centers, the first group falls between the second and third groups. Additionally, the statistics from the Friedman test reveal a significant difference between the variables that impact financial frontiers through the tourism industry in both countries (Albania and Kosovo). These findings suggest a reduction in economic–financial shocks and challenges within tourism especially in the hotel industry. Consequently, the null hypothesis (H_0) is rejected, indicating a notable distinction among the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS).

Table 6. Final Cluster Centers about Albania (AL) and Kosovo (KOS).

ANOVA							Friedman
State support for tourism economies beyond COVID-19 in both countries (KOS and AL)-(the aspect of financial frontiers growth in KOS and AL beyond COVID-19)							Test
Variables	Cluster		Error		F	Sig.	Mean ranks
	Mean Square	df	Mean Square	df			
F2.1	0.676	2	1399	99	0.483	0.000	1.61
F2.2	48.874	2	0.823	99	59.364	0.000	2.24
F2.3	8784	2	0.981	99	8956	0.000	2.15
F2.4	7164	2	0.847	99	8158	0.000	2.01
F2.5	7034	2	0.839	99	7903	0.000	1.19
Distances between Final Cluster Centers					Test Statistics–Friedman test		
N				102			
Chi-Square				38,486			
df				2			
Asymp. Sig.				0.000			

Source: Prepared by the authors. if $\chi^2 < \chi^2_{\alpha(r-1)\alpha(c-1)}$ —rejected H_0 .

4.2. Multidimensional Measurement of Navigating Financial Frontiers in the Tourism Economies of Kosovo and Albania during and beyond COVID-19

Table 7 shows that the repetition for $k = 2$ in both factors (F1 and F2) was stopped in the fourth iteration as the result reached a value of 0.001000 for both countries (Albania and Kosovo) across the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS). Similarly, in the case of variables (items 1–13), the replication was stopped at 0.001000. The value of the stress matrix according to the Crucial formula was found to be 0.82108 for participants and 0.74054 for variables. These matrices explain 82% and 74% of the navigating financial frontiers in the tourism economies during and beyond COVID-19 in both countries (KOS and AL). The high percentages indicate that the data are reliable and can be used to make recommendations for Albania and Kosovo.

Table 7. MDS-Cluster analysis (F1 and F2 during and beyond COVID-19).

Iteration History for the 2-Dimensional Solution (in Squared Distances) Young’s S-Stress Formula (1) Is Used (Variable-Cases)			For Matrix			Interpretation
Iteration	S-stress	Improvement	Iteration	S-stress	Improvement	
1	0.34181		1	0.29545		Iterations stopped because S-stress improvement is less than 0.001000 Iteration history for the 2-dimensional solution (in squared distances) Young’s S-stress Formula 1 is used (Variable–Variable)
2	0.26762	0.07419	2	0.27490	0.02055	
3	0.26109	0.00653	3	0.27008	0.00482	Iterations stopped because S-stress improvement is less than 0.001000 For matrix Stress = 0.24086 RSQ = 0.74054
4	0.26052	0.00057	4	0.26971	0.00037	

Source: Prepared by the authors.

Figure 2 illustrates the linear correspondence and coherent relationship between respondents and variables, providing a clear representation of the distances. This analysis facilitates the determination of navigating financial frontiers in the tourism economies in Albania and Kosovo during and after the COVID-19 pandemic based on the data recommendations in the respective tables for the three groups. Especially during COVID-19, there is a notable increase in the coefficients of financial frontiers in both countries (KOS

and AL). The cases (37, 79, 19, 58, 68, 96, 16, 70, 100, 49, 9, 50, 58, 24, and 21) indicate a significant impact on the population that persists beyond the pandemic. In particular, tourism enterprises (58th in Albania and 50th in Kosovo) have faced significant financial challenges that have affected economic development. The aftermath of COVID-19 shows an increase in the coefficients for financial development through tourism in both countries (cases: 18, 2, 66, 76, 28, 87, 33, 7, 1, and 41), suggesting a resurgence in the hotel industry and increased tourist demand. In particular, Albanian Tourism Enterprise No. 53 and Kosovo Tourism Enterprise No. 86 show positive economic and financial development, signaling recovery and a promising future for tourism in the region. These findings underscore the critical role of control, management, and sustainable practices in shaping financial stability, strategies, and investments. Policymakers and stakeholders can use these findings to make informed decisions and implement measures to mitigate negative impacts and improve the financial performance of the tourism industry in both countries.

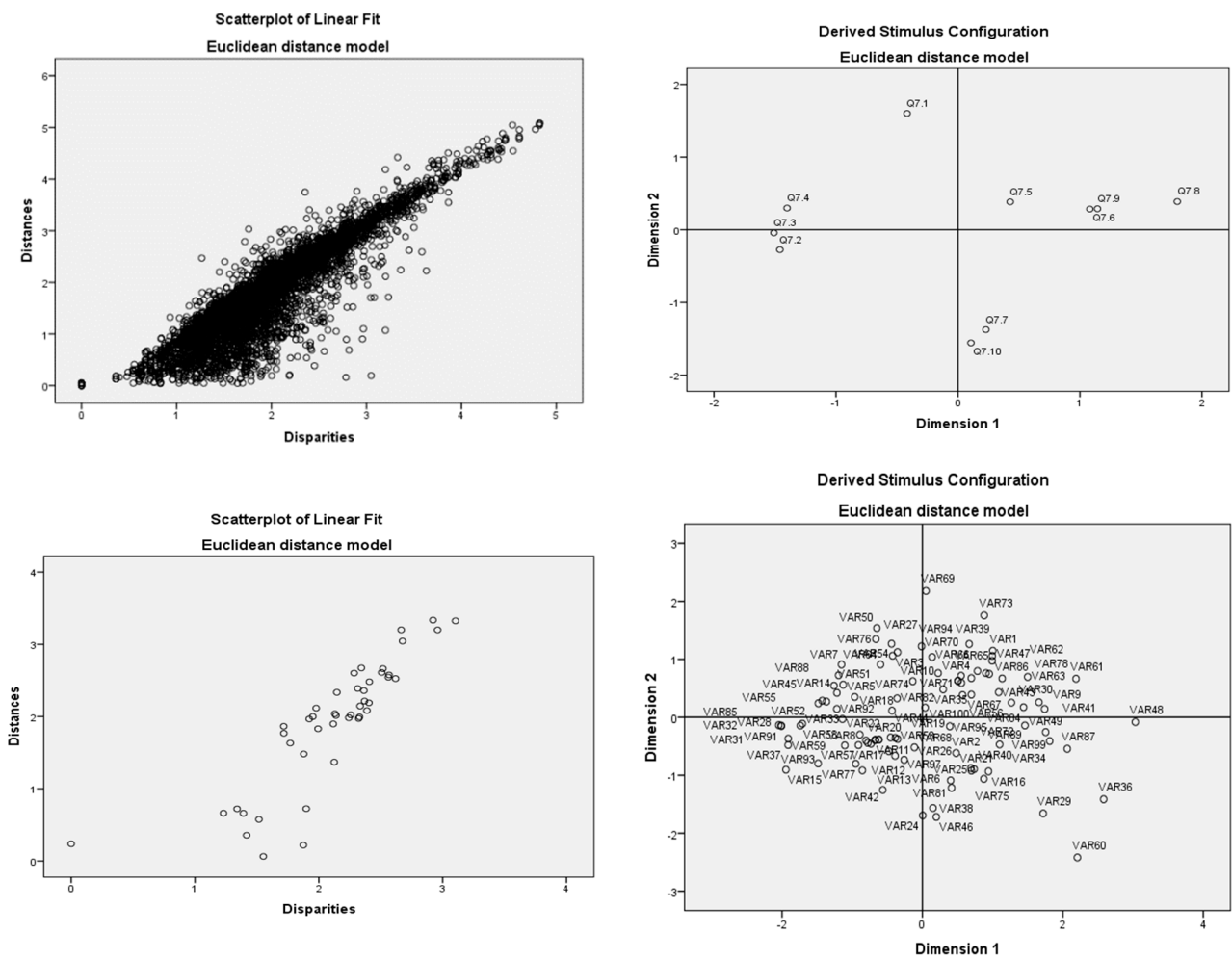


Figure 2. Euclidean distance—between respondents and variables.

5. Discussion

The discussion section aims to highlight the connection between the findings of other authors and the research conducted in this study. By examining and synthesizing the existing literature, this section provides valuable insights into the broader context of navigating financial frontiers in the tourism economies of Kosovo (KOS) and Albania (AL) during and beyond COVID-19. According to [Lulaj \(2023\)](#), it is emphasized that having an economic development and financial frontiers through a sustainable profit of businesses, the behavior of employees and staff, the faster handling of requests, business support before and after the purchase, the provision of informative applications (discounts, usage, term expiration date, product content, payment methods, and the delivery of business-to-consumer shipping, as well as attention should be paid to the improvement of technology, total liabilities, total assets, financial income, etc. in terms of navigating financial frontiers ([Lulaj et al. 2023](#)).

In the context of tourism ([Buultjens et al. 2017](#)), industry resilience refers to an industry's ability to overcome self-inflicted disasters and crises, effectively maintaining stability, flexibility, and diversity and promoting innovation and development. It is seen as a comprehensive program involving the participation of all sectors of society and the economy, directly or indirectly. In this case, the decrease in the number of tourists and their expenditures led to the crisis of activity of Albanian hotels. Based on the data from the Institute of Statistics (INSTAT) in Albania, there was a significant decrease of about 63% in the activity level of the tourism sector during the closure period. According to [Wikipedia \(2024\)](#), despite facing various challenges at different stages of development, Kosovo's tourism industry is aligning with the overall growth of the country's economy. Positioned in the heart of the Balkan Peninsula as a potential tourist hotspot, Kosovo is a crucial area that can contribute to the advancement of tourism in the region and Europe.

Drawing on the findings and perspectives of other researchers, this discussion section enriches the understanding of the financial frontiers that need to be navigated and the strategies that can shape a sustainable future for the tourism sector. Meanwhile, the findings of this research are discussed, adding value to the importance of financial frontiers for navigating financial frontiers through tourism economies during and beyond COVID-19 in both countries (KOS and AL). The analysis involved 102 participants from various locations in Albania and Kosovo, investigating financial frontiers for navigating financial frontiers through tourism economies during and beyond COVID-19. Using Euclidean squared distance and the Ward method, the final data demonstrates observations across 15 variables for three resident groups (Gr1AL, Gr2KOS, and Gr3ALKOS). Notably, Group 3 consistently provided higher responses, emphasizing the profound impact of factors like the lack of tourist information, travel restrictions, quarantine measures, and hygienic practices on the financial frontiers of Albania and Kosovo.

Specifically, Group 3 highlighted the consequences of limited information for tourists (F1.1) and referred to the negative effects of international travel restrictions (F1.2) and both internal and regional restrictions (F1.3). Quarantine measures for visitors (F1.4) and physical distancing (F1.5) were associated with reduced tourism activity and with implications for financial development. Mandatory use of masks (F1.6) was seen as restricting freedom of movement and negatively affecting the economy. The use of COVID-19 tracking apps (F1.7) resulted in additional costs, and hygiene training (F1.8) and regular testing of workers (F1.9) caused shock but were aimed at preventing the spread of the virus. Vaccination (F1.10) was highlighted as critical to economic recovery. The ANOVA test revealed significant differences between variables, rejecting the null hypothesis and supporting differences between groups (Gr1AL, Gr2KOS, and Gr3ALKOS). Friedman test statistics further confirmed differences in variables influencing financial shocks and challenges, highlighting the non-random distribution of group observations during the pandemic. Cluster analysis results showed that Group 1 was positioned between Groups 2 and 3, suggesting distinct patterns in their responses. The results showed that there was a significant increase in the coefficients representing financial shocks within the tourism economies in both Albania

and Kosovo during the COVID-19 period. The highlighted cases (37, 79, 19, 58, 68, 96, 16, 70, 100, 49, 9, 50, 58, 24, and 21) underscore the substantial impact of COVID-19 on the populations of these countries, leading to lasting post-pandemic consequences. In particular, tourism businesses in Albania (indicated by No. 58) and Kosovo (indicated by No. 50) have experienced significant financial shocks and challenges, resulting in closures or reduced operations and a decline in tourist visits. Given the economic dependence on tourism in both countries—Albania for its coastal tourism and Kosovo for its mountain tourism—these shocks have had a negative impact on the overall economy, affecting the financial sustainability of tourism.

Moving on to the results presented, this analysis focused on government support for sustainability through tourism beyond COVID-19 in both countries (KOS and AL). Group 3 (Gr3) consistently provided the highest responses across various variables (F2.1 to F2.5), emphasizing the importance of financial support, innovation, effective control and management, adaptation strategies, and investment in training practices. These factors emerged as critical elements in shaping the financial sustainability of the tourism and hospitality industry in the post-COVID-19 era. The ANOVA test and Friedman's test further supported the significance of these findings, rejecting the null hypothesis and confirming the differences between the three groups (Gr1AL, Gr2KOS, and Gr3ALKOS). Moving forward, there was a notable increase in the coefficients indicating financial development through tourism in both countries (Albania and Kosovo) in Factor II after the COVID-19 pandemic. This positive trend is observed in different phases, indicating a resumption of hotel operations and an increasing demand for tourists. In particular, specific tourism enterprises in Albania (No. 53) and Kosovo (No. 86) showed a gradual economic and financial development, characterized by an increase in the number of employees and visitors. These positive trends indicate the contribution of effective control and management, strategic initiatives, and sustainable investments in recovering from the negative effects of the COVID-19 pandemic.

The multidimensional scaling (MDS) analysis, as presented, further enhances the reliability of our findings. The high percentages explained by the stress matrix (82% for participants and 74% for variables) indicate the robustness of the data and support the reliability of our recommendations. The demonstrated linear consistency and coherent relationship provide insights into the characteristics of both countries (Albania and Kosovo) regarding financial shocks and challenges through tourism economies during and after the pandemic. These insights, derived from the data, provide valuable information for policymakers and stakeholders to make informed decisions and implement measures to mitigate the negative impacts and improve the financial resilience of the tourism industry in Albania and Kosovo.

6. Conclusions

This study conducted a comprehensive analysis of the financial frontier shocks and challenges faced by the tourism industry in Kosovo and Albania during and beyond COVID-19. Covering 102 diverse locations through a comprehensive survey, the study illuminated the significance of tourism to their economies, outlined the resulting financial shocks, and aimed to contribute effective strategies for recovery and sustainable future development. Addressing the key research questions, the findings confirmed the importance of tourism to the economies of Kosovo and Albania. The study highlighted the profound impact of the COVID-19 pandemic on the tourism economies, identified the financial shocks and challenges faced by the tourism industries, and proposed strategies for fostering resilience and sustainability.

Supported by ANOVA and Friedman tests, the hypotheses were rejected, highlighting significant differences among observation groups and underlining the importance of understanding financial frontiers through tourism economies. Analysis of the 102 locations revealed challenges such as a lack of tourist information, travel restrictions, and quarantine measures, all significantly impacting the financial frontiers. Notably, financial challenges increased during the pandemic, leading to closures and reduced operations. Government

support emerged as a crucial factor for sustainability beyond COVID-19, emphasizing financial aid, innovation, effective management, adaptation strategies, and training.

In the variable (F2.3 = 4.50), Gr3 gave a higher response, emphasizing the impact of control and management on the financial stability of the tourism economies by countries and business managers due to financial challenges and loss of income. This plays a crucial role in stimulating post-pandemic economic growth and financial development while reducing the shocks experienced during the pandemic. In the variable (F2.4 = 3.00), Gr3 gave a higher response, emphasizing the importance of adaptation strategies for financial stability in the tourism industry for both countries. Therefore, the strategy of innovation in prices, technology, offers, and tourist attractions increases financial sustainability after COVID-19.

The study also highlighted the negative impact of a lack of information about tourists and the restrictions on international travel. These factors have adversely affected the economy, financial development, and the hotel industry. Additionally, internal and regional restrictions during the pandemic have had lingering consequences, even after its end. The mandatory quarantine measures for visitors have deterred many tourists from visiting Albania and Kosovo, further impacting the economy. While measures such as physical distancing, mask usage, and tracking applications have been crucial for curbing the spread of the virus, they have had negative implications for the economy and financial development.

Recommendations for policymakers and stakeholders included improving tourist information, implementing effective control and management practices, promoting innovation and adaptation, providing financial support, encouraging sustainable investment, and strengthening cooperation between Albania and Kosovo. Continuous monitoring and evaluation of implemented measures were deemed essential for future adaptability, and future research should explore the long-term effects on financial frontiers, make targeted decisions to promote tourism and financial growth, and contribute to a deeper understanding of evolving dynamics within the tourism sector. These insights would be invaluable for informed decision-making and actions to mitigate negative impacts and enhance the financial frontiers of the tourism industry in Kosovo and Albania.

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Appendix A. Scales Survey

Effectiveness of Inhibitory Measures in Preventing the Spread of COVID-19 ((Navigating Financial Frontiers in the Tourism Economies during COVID-19 (KOS and AL).

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Collection of health information by tourists (e.g., temperature control, COVID testing, etc.)					
International travel restrictions					
Restrictions on domestic and regional travel					
Mandatory quarantine for visitors					
Physical distance in travel and tourism					
Mandatory use of masks in travel and tourism					
Mandatory use of COVID-19 tracking applications					
Hygiene training for staff in travel and tourism					
Regular testing of workers' infection in travel and tourism					
Vaccination against COVID-19					

State support for tourism economies beyond COVID-19 in both countries (KOS and AL)- (the aspect of financial frontiers growth in KOS and AL beyond COVID-19)

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Financial support and stimulus packages to shape sustainability in the tourism industry					
Changes in tourism demand and consumer behavior through innovation and accurate financial management					
The impact of control and management on the financial sustainability of the tourism industry due to financial shocks and revenue loss					
Adaptation strategies for financial resilience in the tourism industry					
Investing in sustainable tourism practices for long-term financial growth and shaping sustainability					

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