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RESEARCH PAPER

THE IMPACT OF GLOBAL AND REGIONAL CHALLENGES ON THE DECREASE IN TOURIST FLOWS

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ABSTRACT. The article presents a comprehensive analysis of the impact of global and regional events on the dynamics of tourist flows. The primary reasons for the decrease in inbound tourist flows have been identified and categorized into three main groups: military-political class, economic class, and natural-technological class. Additionally, a hybrid class was identified, to which COVID-19 was assigned. The article is based on causal and comparative analysis, utilizing statistical data on tourist flows provided by the World Bank and UNWTO, as well as an assessment of similar patterns among countries worldwide. The main characteristics of tourist flows from 1995 to 2022 have been identified, pinpointing leaders among countries in increasing and decreasing the number of tourists per year. During the study, countries with similar patterns of tourist flow dynamics were identified. It was concluded that relying solely on quantitative analysis has limited applicability in identifying these patterns. Therefore, it is recommended that quantitative analysis be complemented with expert assessments for a more comprehensive understanding. The basic strategies for responding to the identified classes of causes were outlined. The research will benefit tourism professionals, governmental authorities, and researchers in socio-economic and political disciplines.

KEYWORDS: international events, trends, geopolitics, tourist flows, causal analysis, crisis management, strategic tourism planning

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INTRODUCTION

Tourism is a complex phenomenon that plays a vital role in regions' and countries' development, acting as a catalyst for economic, social, and cultural progress (Creaco and Querini 2003). It generates revenue through direct tourist spending on accommodations, transportation, and other services. This capital has a cascading effect, stimulating other sectors such as hospitality, retail, and entertainment. Tourism not only creates job opportunities but also fosters entrepreneurship and infrastructure development to meet the growing demands of visitors. Beyond the economic impact, tourism promotes cross-cultural exchange (Reisinger & Turner 1998; Bakir et al. 2017), building connections and a deeper understanding of diverse communities and cultural groups. Sustainable tourism practices can encourage environmental conservation and the preservation of cultural heritage (Lussetyowati 2015), contributing not only to the overall well-being but also to the resilience of regions and countries.

In recent decades, the world has experienced a series of significant crises affecting all components of society's social and economic life, including the tourism sector. Changes in the geopolitical landscape, economic fluctuations, social transformations, public health challenges, and environmental issues all have a significant impact on global tourism, directing tourist flows to new points of attraction or impeding them. For instance, international or regional economic conditions affect potential travelers' demand and purchasing power, and conflicts and revisions of visa policies can significantly alter a country's tourist appeal. The COVID-19 pandemic has vividly demonstrated how the rapid spread of disease can impact tourism, highlighting the importance of competent state and regional management and adaptation to new risks in the tourism industry (Zhong et al. 2022).

Research on tourist flows can be divided into several groups. The first includes studies of flows in specific countries and regions, such as Spain (Garin-Munoz & Amara 2000), Australia (Kulendran 1996), China (Mou et al. 2020), Europe (Jansen-Verbeke & Spee 1995) etc. The second group includes general patterns and trends of international interest (Williams and Zelinsky 1970; Yang and Wong 2013; World Tourism Organization and International Labour Organization 2013; Santana-Gallego et al. 2016; Klimova et al. 2017; Li and Cao 2018; Shao et al. 2020). The third group talks about specific reasons affecting the tourist flow, such as common (Gidebo 2021), natural (Hamilton et al. 2005; Rosselló et al. 2020), economic (Khalid et al. 2020) or geopolitical factors (Webster and Ivanov 2015). Additionally, we will examine several studies more precisely.

Khalid et al. (2020) examine the impact of economic and financial crises on international tourism flows across 200 countries from 1995 to 2010. Findings indicate that inflation crises reduce tourism flows in host and origin countries, while domestic debt crises boost tourism arrivals in host nations but negatively affect originating countries.

Chung et al. (2020) analyzed international tourism data from 124 countries between 2000 and 2013. They use cluster analysis and social network models to identify global tourism network structures, emphasizing that reduced transaction costs are more influential in attracting international tourists than natural and cultural attractions. The most comparable study in terms of data volume is Shao et al. (2020), whose research uses data on international tourist arrivals from 221 countries/regions between 1995 and 2018 and applies network analysis to explore the structure and evolution of these flows. It reveals that the network density of international tourist flows is increasing in Europe, East Asia, and North America.

The cited studies do not specifically address the niche targeted by this research. They offer valuable insights into the structure and evolution of international tourist flows or define and analyze specific causes of the reduction in tourist flow in various countries. However, the need for a more comprehensive analysis and classification of the reasons for the decrease in tourist flow across countries and territories remains relevant. This article *aims to identify the primary reasons for the significant decrease in tourist flows in various countries worldwide*.

Understanding dynamics, leveraging global best practices and adapting them to each country's unique circumstances and requirements is a valuable tool for enhancing competitiveness within the tourism sector. This may involve adopting successful management strategies for tourist flows, integrating innovative technologies, or implementing sustainable and environmentally responsible tourism practices. It is crucial to note that the primary aim of this study is not to propose specific and detailed strategies for response for each class of cause of decrease.

MATERIALS AND METHODS

The study's analytical framework is based on different scientific theories and approaches: economic cycles, political instability, climate change models and disaster risk management, demographic transition, technological innovation, and diffusion. Economic downturns often lead to reduced travel spending, while political conflicts or terrorism can deter tourists from visiting certain regions due to safety concerns. Climate change and natural disasters can damage infrastructure and disrupt tourism, while demographic, religious, or cultural changes influence travel preferences.

Methods

The study analyze global trends and specific country cases to understand and describe the overall state and dynamics of tourist flows worldwide. To achieve this, the study relies on various sources, including scientific articles, official reports, and news portals. The methodology employs comparative analysis to establish correlations and causations within tourism events, as well as case studies to understand the nuances of individual country scenarios. Statistical analysis is deployed to quantify these trends. At the same time, visualization techniques are used to map and interpret the data, offering a clear visual representation of the current state and dynamics of the tourism industry. These methods, combined, provide a robust framework for comprehensively understanding the multifaceted nature of tourism trends.

Data source

The combined dataset from the World Bank (WB) and the United Nations World Tourism Organization (UNWTO) is used for quantitative analysis. It contains information on the number of arriving international tourists (1995 – 2022; data for some countries for 2022 are still unavailable). According to the methodology, international inbound tourists are defined as the number of tourists travelling to a country different from where they usually reside for a period not exceeding 12 months, whose primary purpose of the visit is not an activity remunerated within the visited country. If data on the number of tourists is unavailable, the number of visitors displayed includes tourists, same-day visitors, cruise passengers, and crew members.

The dataset gathers data from various sources, including border statistics (police, immigration, etc.), border surveys, and tourist accommodation establishments. Some countries include the arrival of citizens living abroad, while others do not. Therefore, caution should be exercised when comparing arrivals across different countries.

This study uses the total number of inbound tourists, including same-day and overnight visitors. It is crucial to include both groups, as they can serve as significant economic, political, and cultural actors. Same-day and overnight tourists contribute differently to the tourism sector, with each group impacting local economies, cultural exchanges, and political landscapes in various ways. For instance, around 80% of visitors in Poland are same-day tourists, while in Paraguay, before 2003, more than 90% stayed there for less than a day. On the other hand, in Greece, more than 90% of tourists were overnight visitors in 2019. Excluding such a significant portion of tourists would result in an incomplete and potentially misleading analysis. While the author acknowledges that, at the country and region level, one group of tourists may have a more pronounced impact on the development of the tourism industry, using the total number of tourists is deemed appropriate for researching a global-scale dynamic.

The countries for the case studies emerged during discussions and were selected as follows: countries that experienced a decline in less than four separate years with an average number of tourist trips of less than 1.5 million per year and 'stable' were excluded. It was also decided that there should be at most five countries from various geographical regions to test the methodology without overloading it with data. As a result, Brazil, Egypt, Russia, Turkey, and Japan were selected. Additionally, Dominica was included as an example of one of the most unstable countries regarding tourist flows.

Data preparation

At the preparatory stage, regional unions, country classifiers, countries, quasi-countries, and individual regions with zero indicators (Afghanistan, Channel Islands, Faroe Islands, Gibraltar, Isle of Man, etc.) were excluded from the data analysis. On the other hand, some overseas territories, such as Montserrat or the Northern Mariana Islands, were deliberately included in the dataset because, being located far from the main territory, they may have their own patterns of tourist behavior.

The dataset contains 339 missing values – 5.70% of the total dataset. Initially, attempts were made to fill these gaps using linear, cubic, and spline interpolations, but these methods were later abandoned due to the resulting distortions in the data. Linear interpolation was explicitly employed to identify patterns in percentage change dynamics while absolute values remained unfilled. The calculation model was adjusted to exclude the year following the missing data to maintain analysis integrity and reliability.

Data analysis is initiated by evaluating the overall state of global tourist flows, identifying years with more than a 5% change in incoming tourists. Subsequently, it combines the identification of countries with both unstable and stable tourist dynamics into one step. This involves distinguishing nations with significant fluctuations exceeding 5% from those showing stability or minor decreases in tourist flow (up to 10%).

Determining a decrease in the percentage of tourist flow in a country, which can be considered substantial, is quite challenging and depends on the study context, market specifics, and existing trends in the tourism industry. Among the factors to consider are the tourism sector's role in a country's economy, the dynamics of tourist flow in previous years, the level of dependence on international visitors, and government policies affecting tourism.

During the early stages of the study, we looked at groups of countries based on their income levels (Fig. 1) and discovered that the changes in tourist flows were only significantly higher than 5% once, in 2011. So, this level could be used as an appropriate threshold.

This approach is debatable, and we plan further to develop a more complex and comprehensive model that uses the share of tourism in a country's GDP and the result of the tourism dynamic in the previous year.

Technical tools used in analyzing and visualizing data include Python with libraries such as Pandas, Sklearn, Matplotlib, and Scipy, as well as Tableau Desktop 2024. The *'pdist'* function and Euclidean distance are used to find groups of countries based on their tourist dynamics. The *'pdist'* function calculates pairwise distances between observations in a dataset. The *'squareform'* function converts the compact representation into a readable square distance matrix.

RESULTS

Overall state of tourist flows

Understanding long-term trends in tourist flows is critical for industry management. Identifying countries where tourism has consistently grown or declined can indicate successful tourism development strategies or problem areas that require attention. Fig. 2 displays the country's total number of positive and negative changes in tourist flows. The results point to a generally positive dynamic in international tourism. Armenia has observed a significant increase in tourist flow (24 times), while Dominica, the Northern Mariana Islands, Palau, Paraguay, and Venezuela faced a significant flow reduction (12 times). Countries with unstable dynamics are shown in Fig. 3. Such statistics may be of interest because they provide insights into the volatility and unpredictability of specific regions.

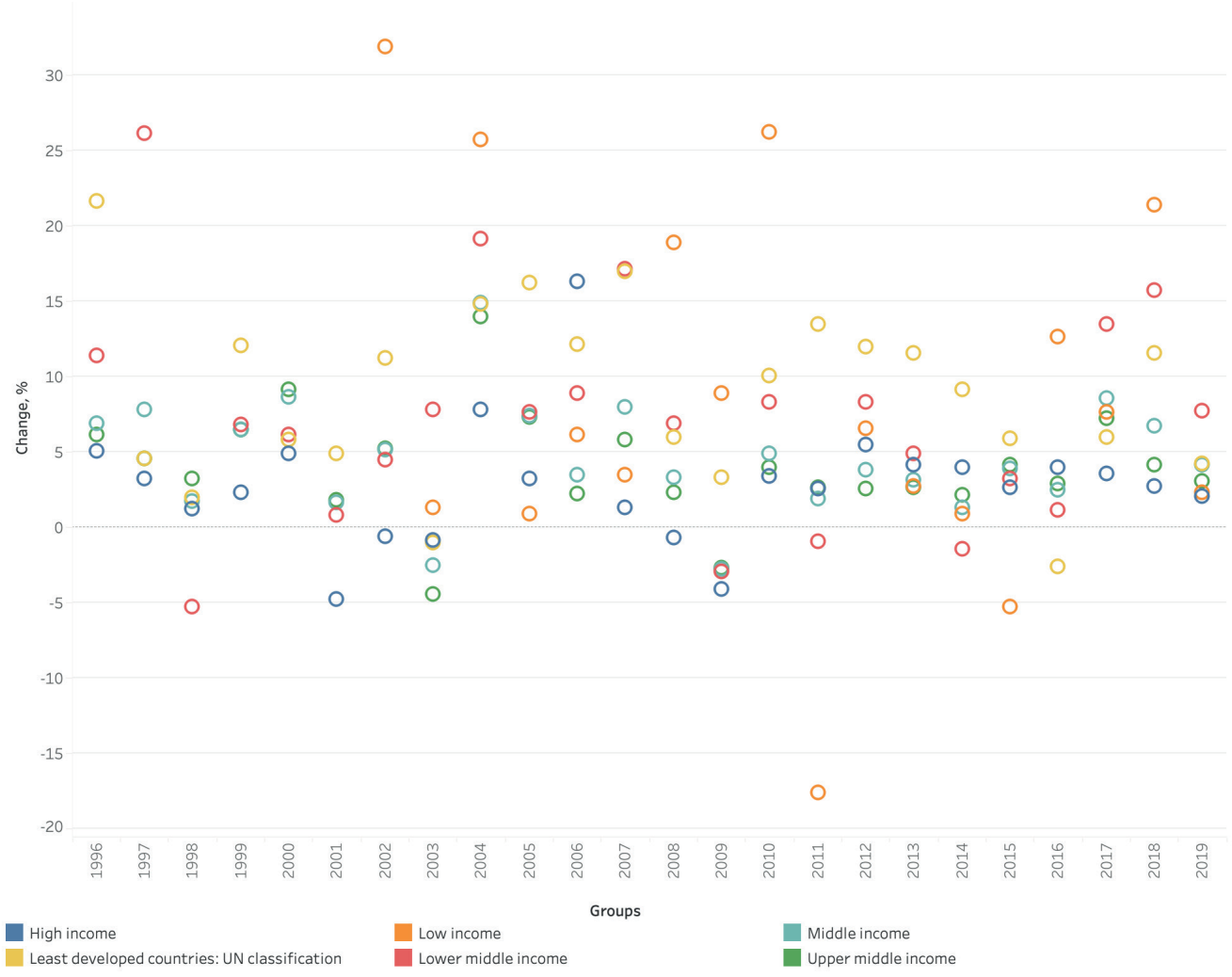


Fig. 1. Dynamics of tourist flow by groups of countries

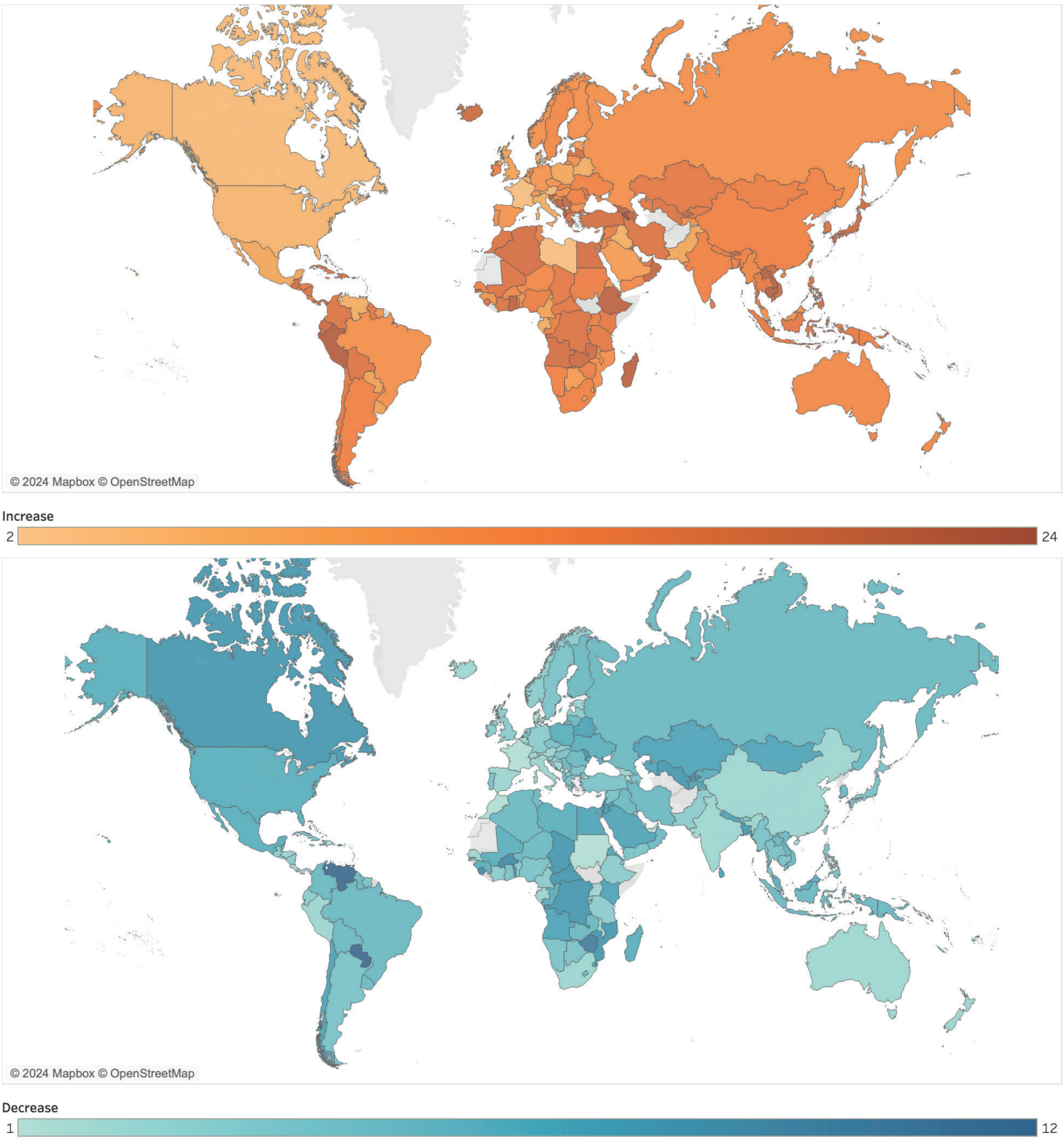


Fig. 2. Number of years with over 5% change in incoming tourist arrivals by country (1995-2022)

Fig. 4 depicts countries with three groups of decreased tourist flows. In Fig. 5, we categorize countries (without COVID-19 years) into two groups based on the annual variation in tourist numbers: a decrease of less than 5% and from 5 to 10% annually. For example, France showed no significant decreases in tourist flow during the study period, indicating its resilience and attractiveness as a destination. Spain experienced a minor setback in 2009 with a 6% decrease in tourist numbers, likely due to the global financial crisis impacting travel behavior. On the other hand, the USA has experienced a decrease of several years below 10% annually (1998, 2001, 2002, 2009, 2011). This resilience in the face of economic and other challenges may highlight the adaptability of the tourism sectors in these countries.

We can observe in Figs. 4 and 5 that Europe (except the eastern part) is the most stable region regarding tourist flows. Data on both stable and unstable dynamics in tourist flows informs decision-making in investment strategies, policy formulation, and itinerary and infrastructure creation. Moreover, it is recognized that higher instability implies higher risks and, consequently, the potential for higher returns for businesses operating in such environments. We have also identified values of decrease and increase in the number of tourists by country, in addition to the general trends discussed earlier (Table 1).

The data review indicates that the most significant changes in tourist numbers were connected to the COVID-19 pandemic. The growth in tourism in most countries is due to the low-base effect; for instance, Bhutan welcomed only one tourist who stayed for 113 days in 2001. Both Taiwan and Bhutan experienced a substantial decline for two consecutive years.

Fig. 3. Countries with unstable dynamics of tourist flows (1995 – 2019), increase or decrease, number of times

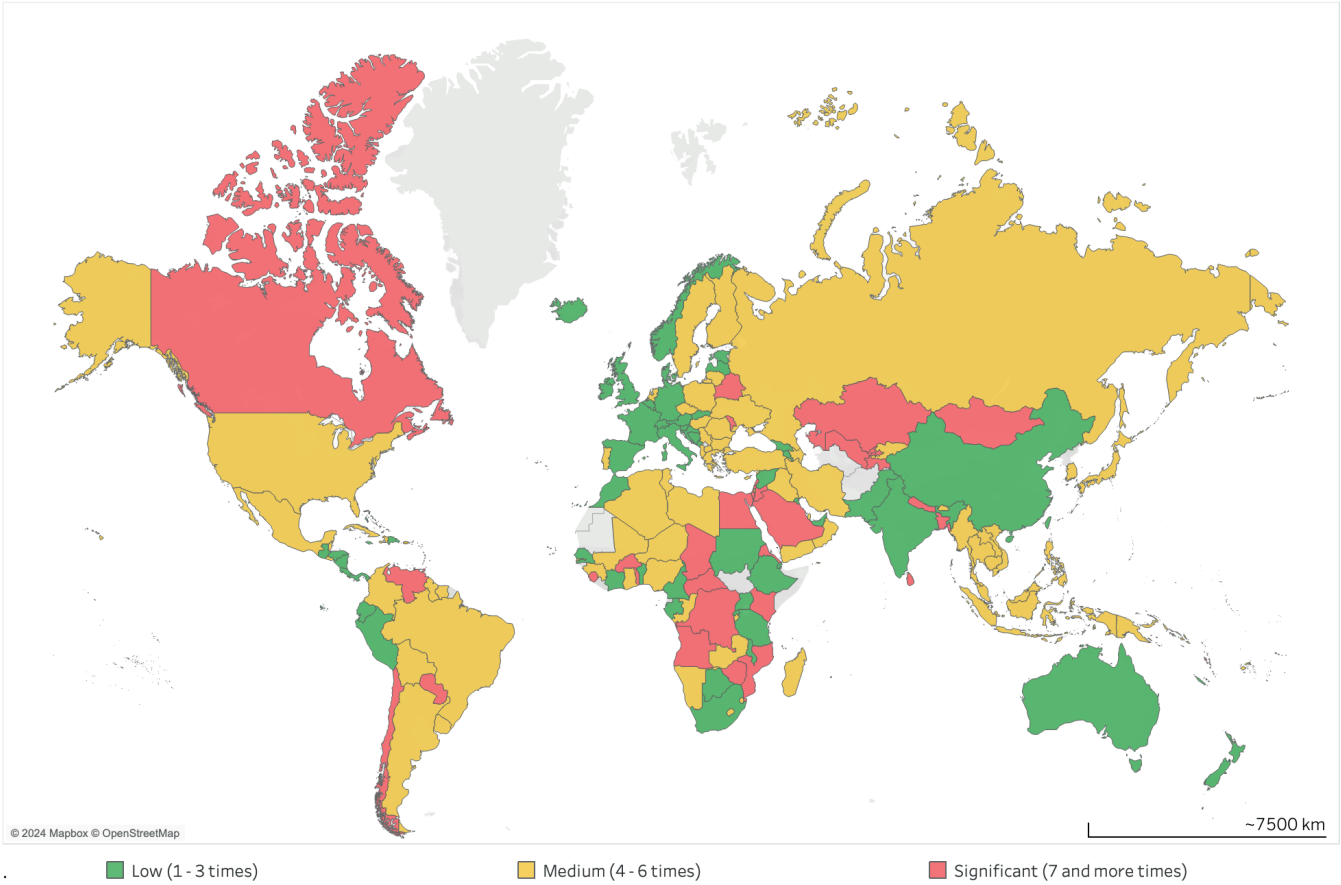


Fig. 4. Groups of countries by the level of decrease in tourist flow

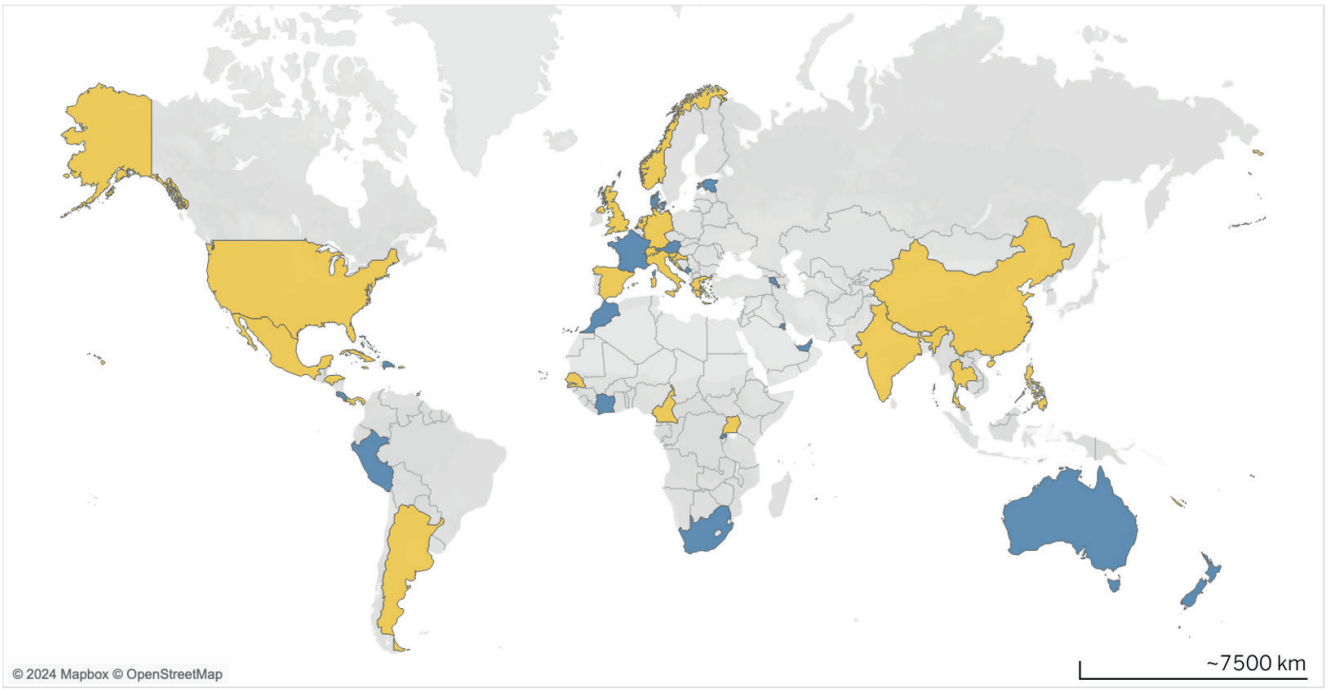


Fig. 5. Countries with annual tourist flow decrease of 0-5% and 5-10% (1995-2019)

Table 1. Top 20 countries with highest yearly increase and decrease in tourist arrivals

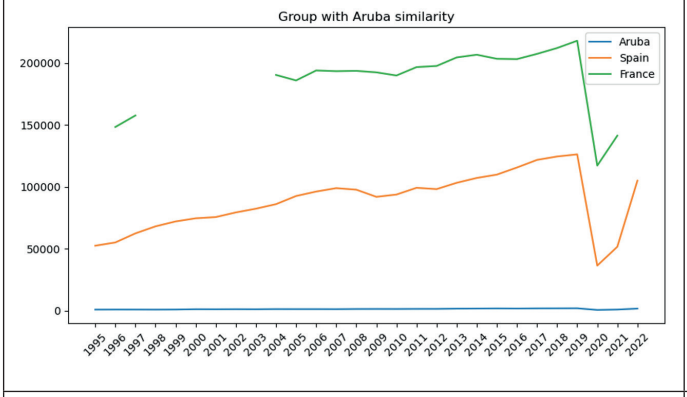
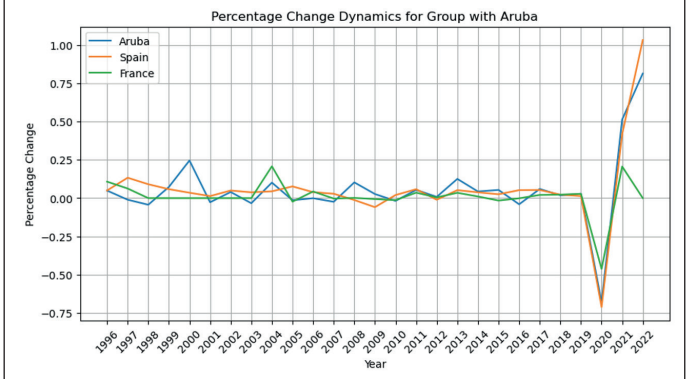
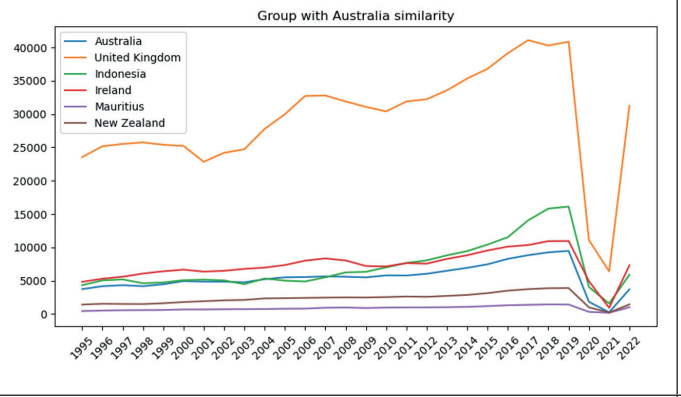
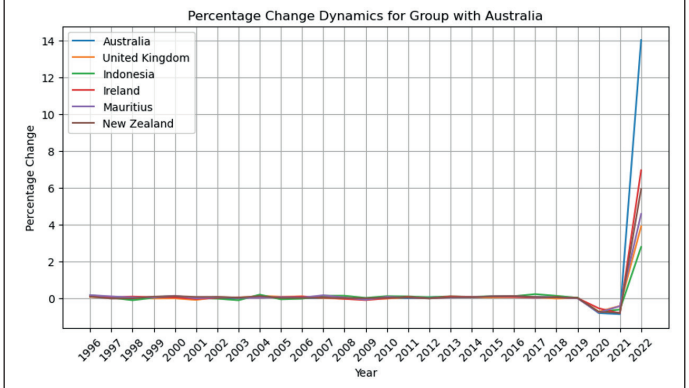
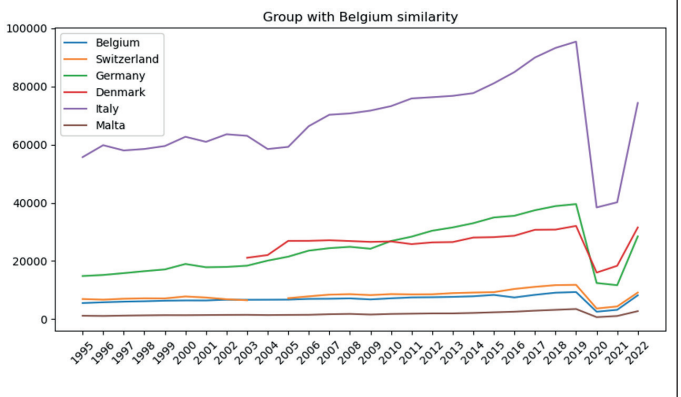
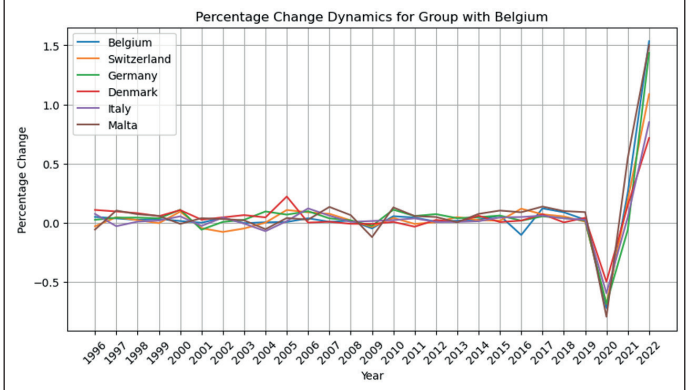
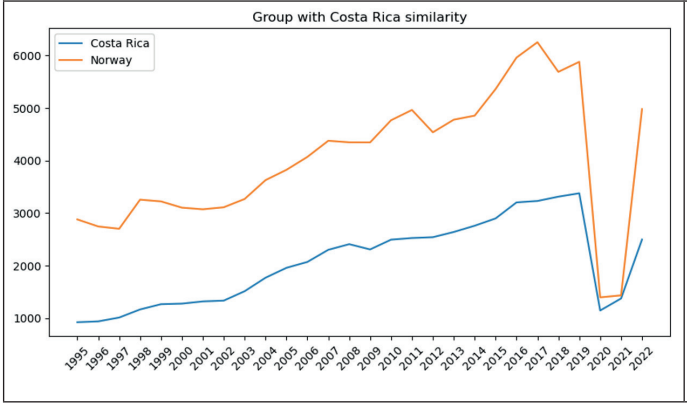
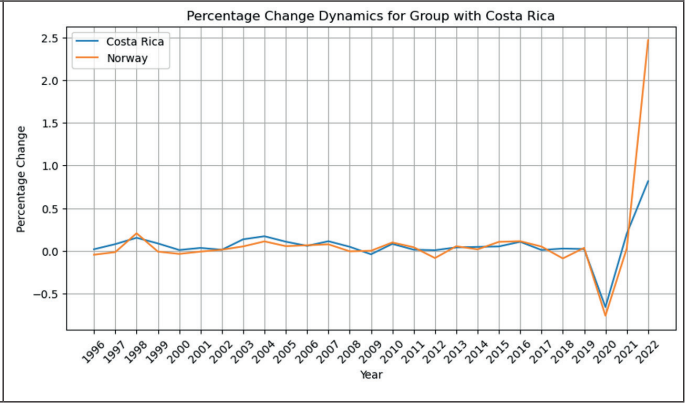
№	Country	Year	Increase, %	Country	Year	Decrease, %
1	Bhutan	2022	2,089,900	Tonga	2021	-100
2	Malaysia	2022	7360	Bhutan	2021	-99.997
3	Viet Nam	2022	2231.84	Hong Kong SAR, China	2021	-97.45
4	Fiji	2022	1937.5	Malaysia	2021	-96.884
5	Singapore	2022	1810.91	Marshall Islands	2021	-96.667
6	Samoa	2022	1533.33	Viet Nam	2021	-95.908
7	Philippines	2022	1518.29	American Samoa	2020	-95.313
8	Japan	2022	1457.72	Japan	2021	-94.023
9	Australia	2022	1401.63	Bermuda	2020	-93.665
10	Argentina	2022	1209.76	Hong Kong SAR, China	2020	-93.617
11	Cambodia	2022	1061.74	Tuvalu	2021	-93.333
12	Guinea	2011	991.67	Kiribati	2021	-92.857
13	Chile	2022	968.42	Thailand	2021	-92.402
14	Mongolia	2022	671.79	Bhutan	2020	-90.506
15	Northern Mariana Islands	2022	646.15	Taiwan	2021	-89.840
16	Libya	2008	616.98	Brunei Darussalam	2021	-89.729
17	Israel	2022	609.20	Mongolia	2020	-89.482
18	New Zealand	2022	592.75	Philippines	2021	-88.941
19	Hong Kong SAR, China	2022	564.84	Namibia	2020	-88.673
20	New Caledonia	2022	558.33	Taiwan	2020	-88.385

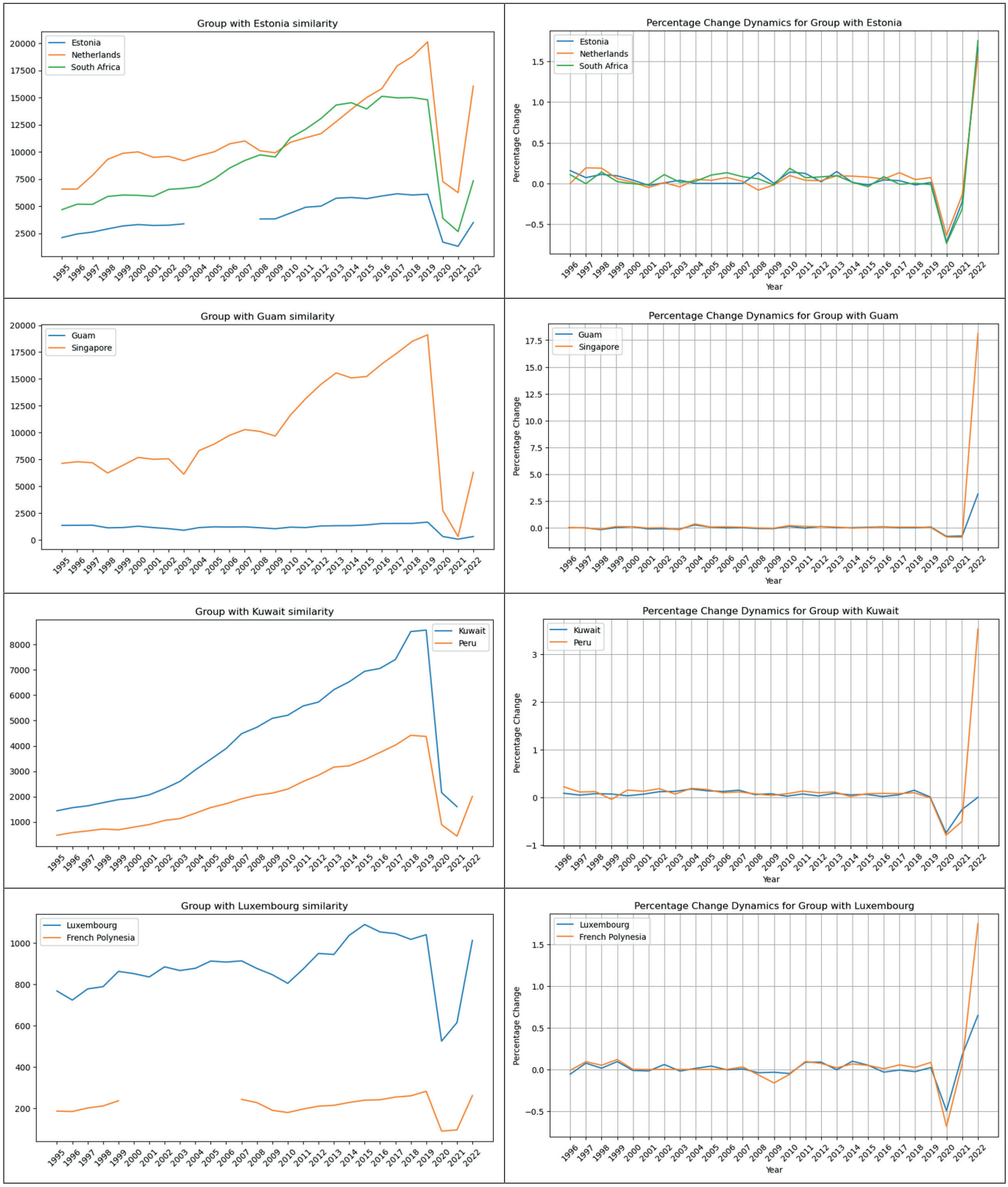
Patterns in tourist flow dynamics

We analyzed tourist flow dynamics quantitatively to identify countries with similar patterns (Table 2). The threshold was set at 0.095. Since we are working with normalized percentage changes, the data values have a similar scale. In this context, a threshold value around 0.1 is often an optimal choice, as it is flexible and reasonable. This value suggests that countries will be grouped if the distance between their normalized percentage changes is less than 9.5%.

According to Table 2, only a limited number of countries can be grouped, considering similar trends in tourist flows. Some countries, such as Germany, Denmark and Belgium, Australia and New Zealand or France and Spain, share similar socioeconomic and geographical characteristics. Meanwhile, affinity in the dynamics of tourist flows between countries such as Estonia and South Africa or Costa Rica and Norway seems more correlative than causal. Expert assessments should complement quantitative analysis to identify patterns in the dynamics of tourist flows, as the results suggest.

Table 2. Countries with similar patterns in tourist flow changes

Dynamics of tourist flow	Dynamics of changes in tourist flow
	
	
	
	



The data also visually reaffirmed that the COVID-19 pandemic had a significant impact on the reduction of tourist flows in most countries. Then, to reduce the noise in the data, we decided to exclude the 2020-2022 years. This allowed us to lower the threshold to 0.65 and obtain results that more clearly reflect geographical patterns (Table 3).

Classes of causes leading to a reduction in tourist flows

We identified the countries with the most noticeable reductions in tourist flows and examined the class of causes for each case (Table 4). This stage of the research allowed us to consider and assess the scale and primary factors behind the substantial decrease in the number of tourists, which provided the opportunity to better understand the dynamics and resilience of the tourism markets in these regions.

Of the 20 cases, 14 belong to the military-political class and three each to the economic and natural-technological classes, respectively. Given the limited representation of the 2007–2009 years among the top 20 cases of decreased tourism flow, we decided to separately examine the impact of the global economic crisis on tourist flows across countries worldwide (Fig. 6). The results show that in 2008, the most significant decrease occurred in Kenya (33.79%) and in 2009 in Bangladesh (42.83%).

Table 3. Countries with similar dynamics in tourist flow changes (1996-2019)

Table 4. Top 20 countries with highest yearly decrease in tourist arrivals with class of causes (1996 - 2019)

№	Country	Year	Decrease, %	Class of Causes/ Comment
1	West Bank and Gaza	2001	-86.13	Military-political class // Conflict with Israel (Saleh 2003)
2	Iraq	1997	-70.59	Military-political class // Iraq and United Nations Special Commission UNSCOM tensions[1]
3	Central African Republic	2002	-70	Military-political class // Tension between Chad and CAR (Boutellis 2013)
4	Eritrea	1999	-69.68	Military-political class // The Eritrean-Ethiopian War (part of the Badme War) (Murphy 2016)
5	Yemen, Rep.	2015	-67.32	Military-political class // Yemen's civil war began in 2014 when Houthi insurgents took control of Yemen's capital and largest city, Sana'a, demanding lower fuel prices and a new government[2].
6	Sierra Leone	1997	-63.64	Military-political class // Rebel declares himself head of state[3]
7	Madagascar	2002	-63.53	Military-political class // The post-electoral political crisis in 2002, which resulted in severe transportation disruptions[4]
8	Burundi	1997	-59.26	Military-political class // From 1996 to 2000, external aid dried up as a reaction to a military coup carried out in July 1996, during the 1993-2003 civil war. A few days after the July 1996 coup, Burundi was put under a total economic embargo. (Nkurunziza 2018)
9	Albania	1997	-58.54	Economic class // In early 1997, Albania's pyramid schemes collapsed, plunging the country into a deep economic and social crisis (Treichel 2002)

[1] https://www.un.org/Depts/unscom/Chronology/chronologyframe.htm
[2] https://www.cfr.org/global-conflict-tracker/conflict/war-yemen
[3] http://edition.cnn.com/WORLD/9705/25/sierra.leone.pm/index.html
[4] https://documents1.worldbank.org/curated/en/994701467992523618/pdf/820250WP0P12800Box0379855B00PUBLIC0.pdf

10	Madagascar	2009	-56.53	Military-political class // "The most recent incident, and one of the most damaging, has been the political unrest that emerged in March 2009"[3]
11	North Macedonia	2001	-55.80	Economic class // Poor and unstable economy of country (Iliev 2019)
12	Israel	2001	-54.38	Military-political class // Regional conflict (Saleh 2003)
13	Eritrea	1998	-54.15	Military-political class // The Eritrean-Ethiopian War (part of the Badme War) (Murphy 2016)
14	Montserrat	1996	-53.37	Natural-technological class// 1995 - The volcano erupts after being dormant for 500 years.1996 - The volcano continued to erupt and became more violent causing increased damage[5].
15	Central African Republic	1998	-52.94	Military-political class // internal mutinies in previous years and in 1998 the final contingent of French troops leaving CAR (Berman and Lombard 2008)
16	Kyrgyz Republic	2010	-50.06	Military-political class // The 2010 political turmoil disrupted economic activity and negatively affected near-term growth prospects. (Kyrgyz Republic 2011)
17	Ukraine	2014	-49.18	Military-political class // Revolution, Civil war and conflict with Russia, Malaysia Airlines Flight 17 jet downing, 17 July 2014
18	Congo, Dem. Rep.	2002	-49.09	Natural-technological class[6]// But: war of 1998-2002 was characterized by mass displacement, collapse of health systems and food shortages[7]
19	Comoros	2007	-48.28	Natural-technological class// According to UNWTO data, there was a decrease from 28.5 to 15.2, while other sources, such as the Central Bank of Comoros, indicate only a 15% decrease, from 17 to 14.6 (Comoros, 2013). Despite the discrepancies in the data, the cause was identified as the Karthala volcano eruption (Global Volcanism 2007)
20	Bangladesh	2010	-47.94	Economic class // The tourism sector is experiencing numerous problems as a result of the global economic crisis (Haque 2015)

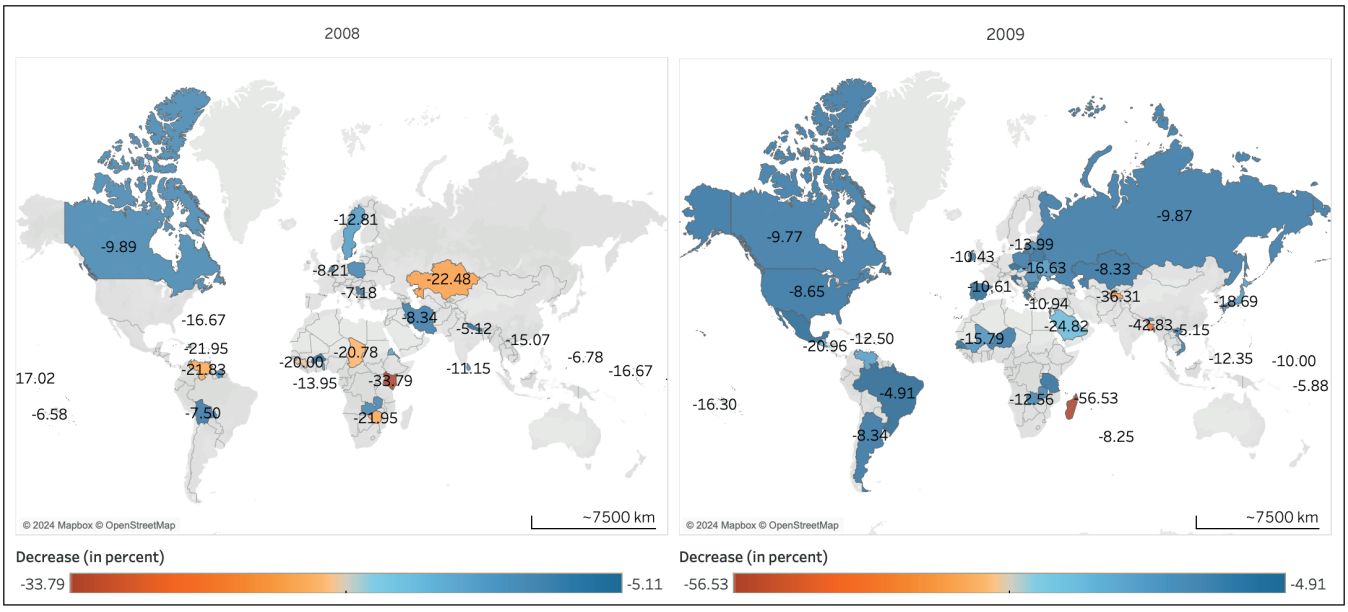


Fig. 6. Reduction in tourist flows by countries as a consequence of the Global financial crisis of 2007 – 2008

[5] https://downstectonicprocesses.weebly.com/montserrat-a-case-study-of-a-volcanic-eruption.html
[6] https://earthobservatory.nasa.gov/images/9164/nyiragongo-volcano-erupts-in-the-congo
[7] https://www.rescue.org/sites/default/files/document/661/2006-7congomortalitysurvey.pdf

The complex analysis allows us to conclude that over the last 30 years, the most significant reduction of international inbound tourism was caused by the COVID-19 pandemic, followed by the class of causes "military-political conflicts", with economic class coming in third.

Causal analysis of tourist flow dynamics in individual countries (case studies). To assess the impact of different classes of causes of tourist flow decrease within individual countries, five countries were selected from different regions of the world: Brazil, Egypt, Russia, Turkey, and Japan, each with different tourist behavior patterns (Figs. 7, 8) and unique geopolitical, economic, and socio-cultural factors influencing tourism.

Due to Japan's growth, which created a significant distortion, we will also show Fig. 9 for the period from 1995 to 2019, which provides a clear visualization of complex dynamics for further analysis.

According to UNWTO data, there was a significant decrease in inbound tourism in Russia in 2016 (27%), but this figure only partly reflects reality. Since 2014 in Russia, tourist flows have been measured not by the number of tourists but by the number of trips, according to the 'Official Statistical Methodology for Assessing the Number of Inbound and Outbound Tourist Trips.' As a result, according to the original methodology, there were 32,421,490 tourists in 2014, while the new methodology counted 25,437,893 trips. The drop was 21%, whereas the actual data is likely higher and may exceed UNWTO figures.

The obtained data reveal that general proportions of the class causes are maintained, while specific details are more pronounced at the country level. Out of 18 instances of decreased tourism flow, 10 are linked to military-political conflicts (56%), two to the natural-technological class (11%), and six to the economic class (33%). At the country level, different classes of causes can dominate in various countries, underscoring the significance of context-specific factors.

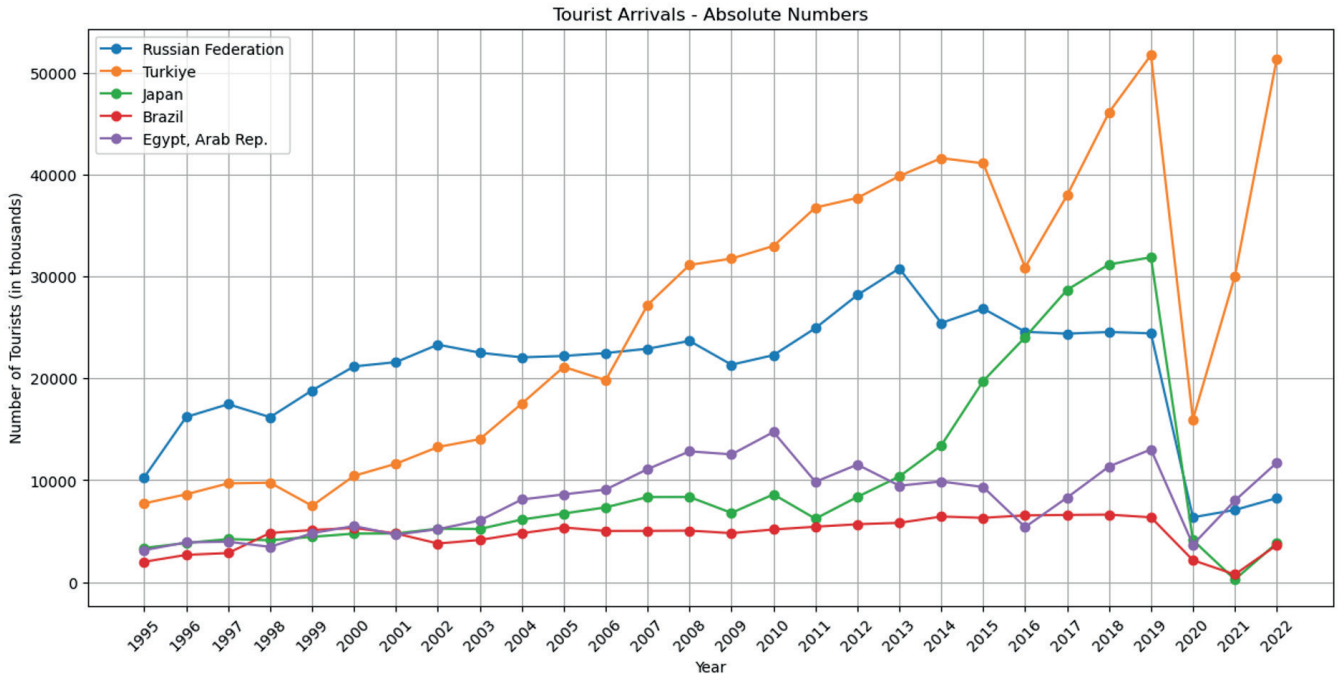


Fig. 7. The absolute number of tourists by individual countries (in thousands)

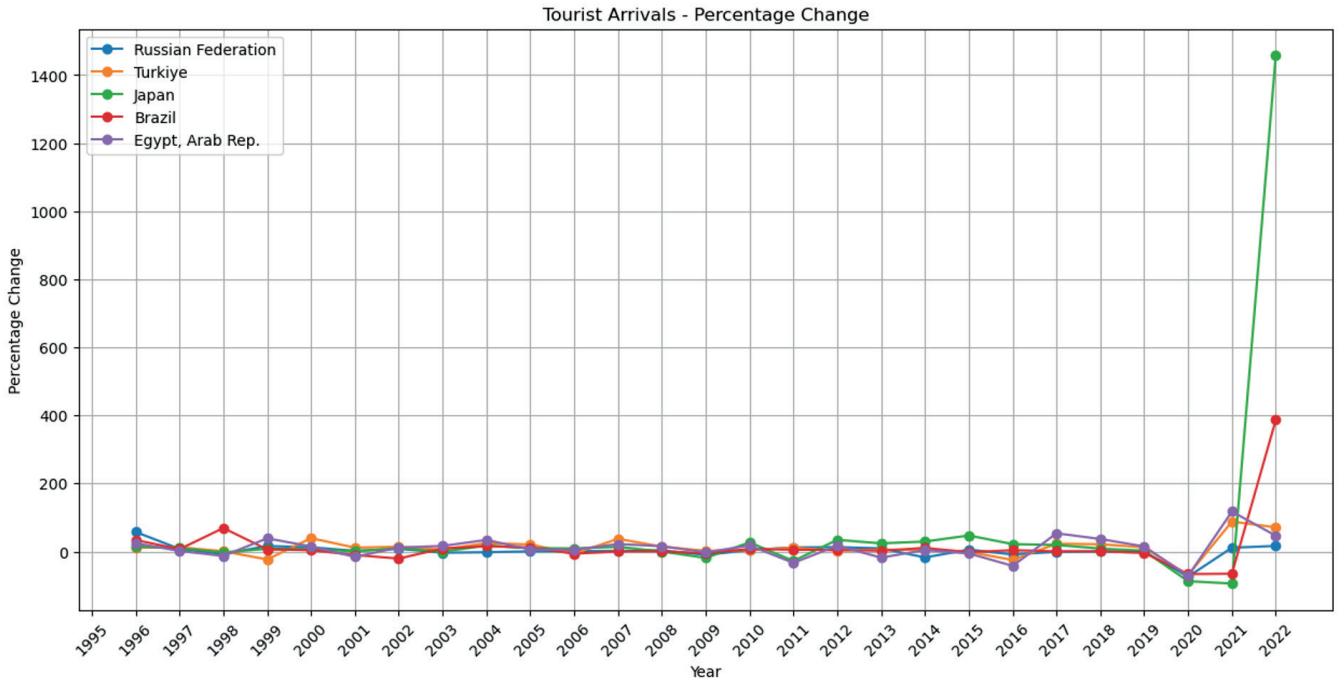


Fig. 8. Change in tourist flow by individual countries (in percent)

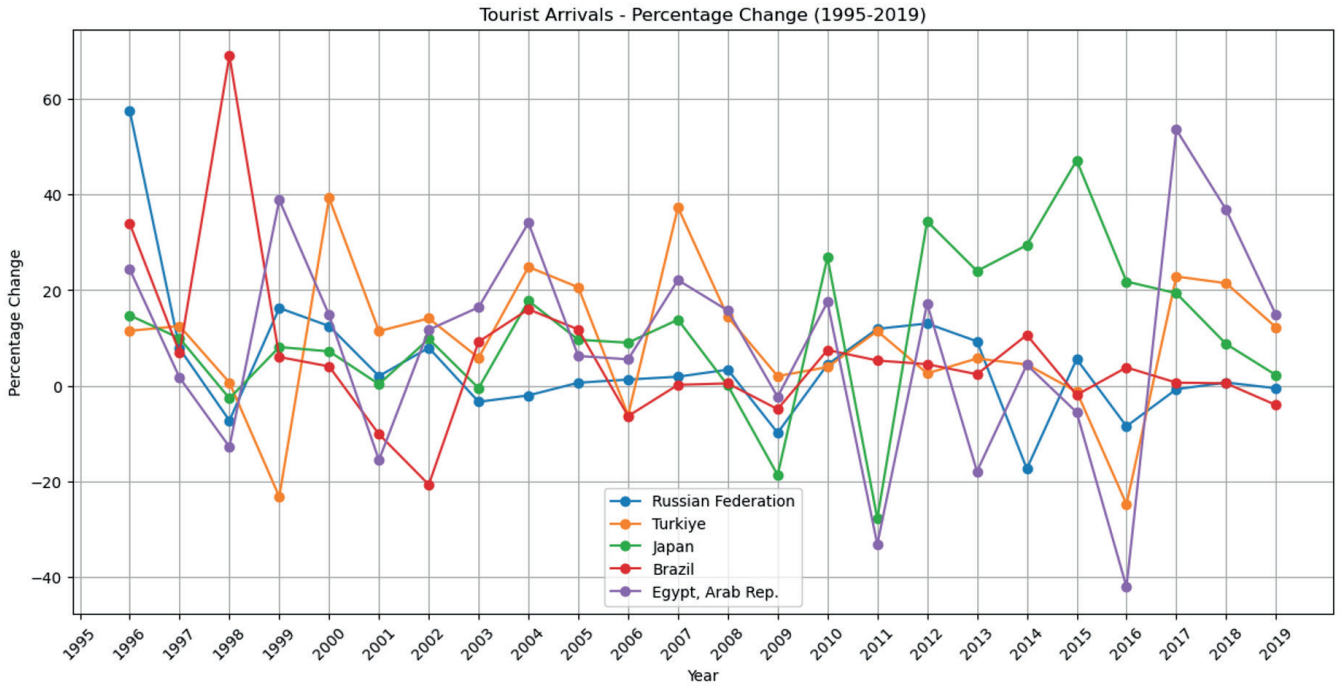


Fig. 9. Change in tourist flow by individual countries in 1996 - 2019 (in percent)

Table 5. Reasons for the decline in tourist flow by individual countries

Country	Year	Decrease (%)	Cause class // comment
Russia	1998	7,3%	Economic class // The underlying origins of the Russian crisis of 1998 are to be found in the country's economic structure, institutional environment and political processes[8]
	2008	9,87%	Military-political class // Conflict with Georgia and Global financial crisis
	2014	21,05%	Military-political class // Conflict with Ukraine and the associated initial period of sanctions (Dementiev and Andreev 2023)
	2016	8,5%	Military-political class // Conflict with Ukraine and the associated initial period of sanctions (Dementiev and Andreev 2023)
Egypt	1998	12,8%	Military-political class // In 1998 when tourist numbers decreased because of terrorism, the shares of Europe decreased drastically, while that of Middle East increased (The study on tourism…, 2000)
	2001	15,6%	Military-political class // Impact of political instability and terrorism in the tourism industry (Mody 2013)
	2011	33,1%	Military-political class Arab spring (Arruda 2018)
	2013	17,9%	Military-political class Arab Spring continued But there was a slight recovery in 2012
	2016	42,1%	Military-political class Decrease in the number of Russian tourists after a Russian aircraft crashed in October 2015, as well as to the decline in the number of tourists coming from Britain, Germany and Italy[9]
Japan	2009	18,7	Economic class // Consequences of the global economic crisis (Ishikawa 2011)
	2011	27,7	Natural-technological class // Earthquake and tsunami[10]

[8] https://unctad.org/system/files/official-document/poirrsd002.en.pdf
[9] https://www.middleeastmonitor.com/20170105-tourism-to-egypt-plummets-by-40-per-cent-in-2016/
[10] https://theconversation.com/making-it-safe-tourism-after-japans-earthquake-5691

Turkey	1999	23,2%	Natural-technological class // Earthquake in the Marmara Region on 17 August 1999 (ÇİFTCİ and BAYRAM 2021)
	2006	6,2%	Military-political class The most vital factor in the sudden change however was the political unrest the country experienced last year. There were strings of bombings by Kurdish rebels and this together with the nearby Lebanon/Israel conflict gave Turkey a reputation of being unsafe[11].
	2016	24,8%	Military-political class // Turkey's previously booming tourism sector was gravely hit in the wake of a series of terrorist attacks and domestic political turmoil (Turkey's Economy 2017)
Brazil	2001	10,16%	Economic class // The fall of the flow of tourists to Argentina is related to the collapse of its economy from December 1, 2001
	2002	20,6%	Economic class // Due to the economic crisis that Argentina suffered in 2002, its participation in the influx of tourists to Brazil fell from 32.8 percent in 2000 to 19.24 percent in 2004. (Sobral et al 2007)
	2006	6,4%	Economic class // Varig Airlines bankruptcies - Varig was forced to cut 1.2 million international flights[12]
	2009	5%	Economic class // Global economic crisis

The case of Dominica was observed separately and clearly illustrates the issues related to distinguishing between tourists who stay in the country for more than one day and same-day tourists (Figs. 10, 11). Because the number of same-day visitors exceeds the number of overnight tourists by 2-5 times, the overall dynamics of tourist numbers follow the patterns of same-day visitors. Volatile tourist flow dynamics characterize Dominica: over the observed period, there were 11 years with a total number of tourists that increased by more than 5% and 12 years with a decrease of more than 5%.

As we can see from the graphs, the dynamics of the tourist flows are smooth for overnight tourists and do not raise questions, whereas, for same-day tourists (mostly cruise passengers), there are extreme fluctuations. In Dominica, the main class of reasons for the decrease is "natural-technological", such as hurricanes Lenny (1999), Ophelia (2011), Erika (2012), and Maria (2017), which deteriorated cruise activity. However, the country also faced economic crises, for example, in 2001–2002 (International Monetary Fund, 2011).

The case studies allow us to draw several conclusions:

The analysis of tourist flow dynamics is sensitive to the chosen research methodology (total, overnight or same-day tourists). Significant changes in one indicator may not be prominently reflected when considering the other. The model for analyzing tourist flow dynamics should be comprehensive and include both types of tourists. The introduction of normalization coefficients, depending on the level of influence of every kind of tourist, might be necessary. This analytical model could help groups like government tourism boards, local businesses, and destination management organizations, make their marketing campaigns, infrastructure investments, and policy initiatives more suitable for the different wants and needs of tourists staying overnight and those visiting for the day.

Analyzing annual trends in tourist flow dynamics to determine the impact of specific cause classes is an overly generalized approach. This is evident in the example of hurricane seasonality in the Caribbean Sea, which significantly impacts the tourism industry in a specific season. The same can apply to short-term military-political conflicts or terrorist acts. All this highlights the need for more granular time intervals for more accurate causal analysis.

Diversifying the tourism product and market segments is crucial, especially in regions heavily relying on a single type of tourism, such as cruise tourism in Dominica, where hurricanes, storms, and typhoons pose significant risks. While developing and promoting alternative forms of tourism is essential, devising strategies for mitigating the risks associated with such calamities is equally vital. This entails implementing robust disaster preparedness plans, enhancing infrastructure resilience, and fostering partnerships with local communities to ensure swift recovery and continuity of tourism activities in the aftermath of natural disasters.

DISCUSSION AND CONCLUSION

The analysis of tourist flow dynamics at global and country levels is significant for state governance and tourism industry management. This understanding of dynamics empowers governments, tourism operators, and stakeholders to tailor effective strategies to attract and retain tourists, particularly during periods of decline.

Within this study's scope, three classes of causes are used: military-political class, economic class, and natural-technological class. We believe it is also worthwhile to introduce a fourth category — the hybrid class. This class is crucial for encompassing various complex cases, such as COVID-19, which, while primarily of natural origin, was also marked by economic challenges and individual countries' pursuit of geopolitical interests.

The objectives of this article do not include developing detailed strategies for addressing the identified causes of the decrease in tourist flows. However, it is important to outline basic directions that help respond effectively to tourism industry crises (Table 6).

By employing and developing these strategies, destination authorities can better manage and mitigate the various causes of the decrease in tourist flows, ensuring a more resilient and sustainable tourism industry. A logical continuation of this study would involve preparing more detailed and targeted

[11] https://www.tourism-review.com/tourism-arrivals-in-turkey-dropped-drastically-news176
[12] https://en.mercopress.com/2007/07/03/less-tourists-visited-brazil-in-2006-but-they-spent-more

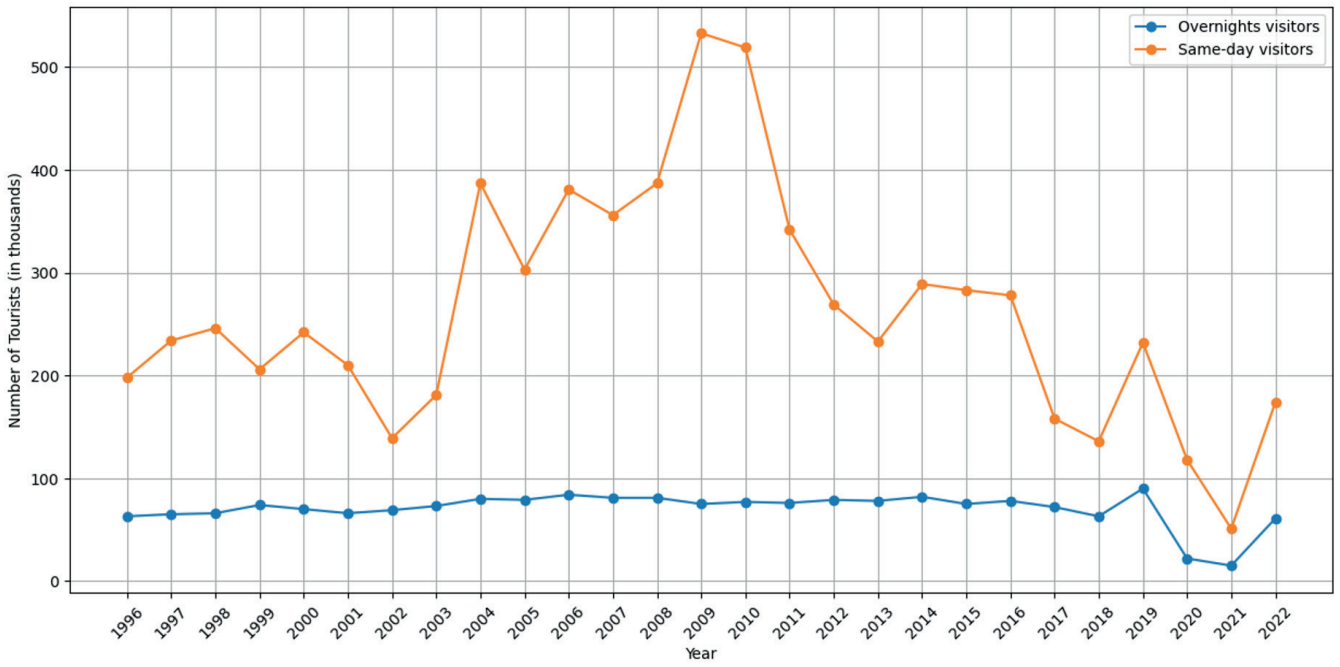


Fig. 10. The absolute number of tourists in Dominica (in thousands)

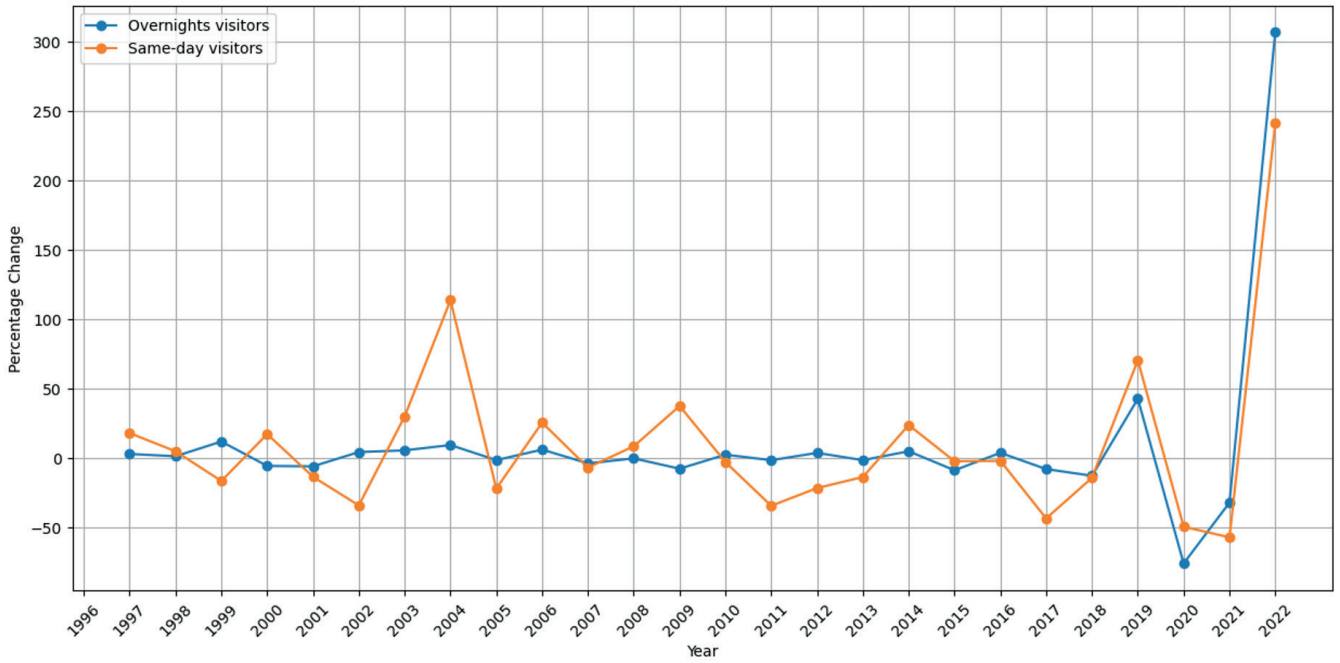


Fig. 11. Change in tourist flow in Dominica (in percent)

Table 6. Basic strategies for responding to the identified classes of causes

Military-political	Economic	Natural-technological	Hybrid
Engage in international diplomatic efforts to resolve conflicts and promote peace	Develop financial support mechanisms to support economy through collaboration between public and private sectors during downturns: tax breaks, subsidies, and financial aid for businesses	Conduct regular risk assessments and vulnerability analyses to identify and prioritize areas for intervention and develop disaster preparedness and response plans to mitigate the impact of risks	Establish comprehensive crisis management frameworks that address multilateral crises like pandemics, combining health, economic, and political strategies
Implement robust security measures to reassure tourists of their safety: increased police presence, improved surveillance, and security protocols at key tourist sites	Diversify the tourism products and services to appeal to different market segments and reduce dependency on specific economic factors	Invest in resilient infrastructure that can withstand natural or technological disasters	Promote international collaboration to address global challenges, exchanging information and resources in crisis situations

Develop a comprehensive crisis communication plan to provide timely and accurate information to tourists during political instability	Launch targeted marketing campaigns to promote tourism domestically and internationally, emphasizing affordability and value for money	Promote environmental sustainability initiatives to preserve natural attractions. Develop conservation efforts, sustainable tourism practices, and raising awareness among tourists and locals	Develop adaptive governance frameworks that allow for flexible and iterative decision-making processes, enabling governments to respond effectively to evolving and complex challenges in tourism industry
Develop tourist routes and programs showcasing the country's cultural and historical heritage to attract tourists despite the geopolitical situation.	Enhance long-term economic viability and resilience by promoting sustainable tourism practices, including investment in eco-tourism, cultural heritage preservation, and community-based tourism initiatives	Integrate technology-driven solutions for early warning systems and communication channels to promptly alert tourists and locals about potential natural or technological hazards	Implement proactive policy measures and facilitate collaborations between government agencies, private enterprises, and local communities to implement joint initiatives to enhance tourism resilience

recommendations. In further research, it is necessary to specify response options for stakeholders at different levels (global, regional, and local). When preparing sustainable tourism development strategies and analyzing risks and challenges for the industry, it is crucial to allocate responsibility for specific tasks and associated risks to the level that can best manage them.

One of the key limitations of this study in distinguishing the classes of reasons is the difficulty in precisely demarcating the economic and military-political causes that influence tourist flows. In the modern world, economic and political spheres are closely intertwined, and events in one can quickly and unpredictably affect the other. As a result, identifying purely economic reasons, such as financial crises or sudden economic downturns, can be complicated by the simultaneous presence of military-political factors, including conflicts, sanctions, or political instability. This interaction and influence of causes make the analysis less definitive and can lead to a conditional differentiation of causal factors. As a result, the article views these reasons as complementary rather than mutually exclusive factors.

Another limitation of this study is its exclusive focus on international tourism. In the negative scenarios unfolding within a country, domestic tourism might supplant international inbound tourism due to restrictions on the number of tourists able to travel abroad. This shift indicates that outbound tourism does not necessarily mirror the dynamics of inbound tourism under such circumstances. The following limitation arises from the fact that the analysis does not account for the possibility that a decrease in tourist flow may be a correction following a sharp increase in the previous year. Such an approach can lead to underestimating specific trends in the tourism industry.

In future research, it is important to continue analyzing the causes of the decrease in tourist flows while expanding the focus and deepening the understanding of the diverse factors that influence this process. One promising direction could be studying the influence of economic and political changes and natural and technological crises on tourism in different regions and within countries with different tourism specializations. It is important to consider key characteristics of countries, such as geographical features, expertise in certain types of tourism, or the overall level of development of the tourism industry (center-periphery).

Long-term trends and cyclicality in the tourism industry, such as periods of big growth followed by drops, could also be studied in a big way to learn more about how these cycles affect the stability of tourist markets. In addition, it would be helpful to study the tourism industry's response and adaptation to significant events, including natural disasters and pandemics, and to assess how various mitigation strategies can help manage such crises.

Researching the impact of consumer preferences and behavior changes on tourist flows will also be important, especially in light of growing interest in sustainable and environmentally responsible tourism. Analysis of how new trends in tourism, such as event, medical or cultural tourism, affect changes in tourist flows can provide valuable data for developing tourism industry strategies.

Quantitative analysis of similar patterns in tourist flows across the countries has revealed the remarkable diversity of the world's tourism landscape. Events unfold in various ways, showcasing the uniqueness of each country's trajectory. Identifying patterns over a long period may be less fruitful, as countries predominantly follow distinctive paths. Nevertheless, the patterns we observed demonstrate that geography matters.

Given that military-political conflicts are one of the leading causes of the decrease in tourist flow, it is critical to consider tourism's role in reducing geopolitical tension. As an international phenomenon, well-organized and managed tourism uniquely brings people and cultures together, promoting understanding and peaceful interaction between peoples. In this context, the following research may focus on analyzing international tourism as a tool of soft diplomacy and cultural exchange, reducing tension, and preventing conflicts. Studying successful examples of how tourism has contributed to peace and stability can provide valuable lessons for developing tourism and international relations strategies. An important aspect of such research is examining how tourism initiatives and programs can be integrated into broader diplomatic and peacekeeping efforts. Furthermore, it is critical to investigate how tourism strategies can be adapted to minimize risks associated with geopolitical conflicts, as well as how tourism can contribute to economic development and social progress in conflict-prone regions. This may involve exploring collaboration mechanisms between governmental and non-governmental organizations, local communities, and international tourism companies to create sustainable and peaceful tourist destinations.

A significant direction for future tourism research is the analysis of the impact of the COVID-19 pandemic, which has become a critical negative factor in the tourism industry. The pandemic has demonstrated the need for a deep interaction between healthcare systems and tourism to effectively deal with such global challenges. In this context, special attention should be given to developing and implementing strategies that can minimize health risks in international tourism. Particularly crucial is the development of medical tourism as one of the possible ways to enhance the level of the healthcare system and, simultaneously, the recovery and development of the tourism sector after the pandemic. Medical tourism provides medical services to foreign patients and creates conditions for safe and healthy travel, which becomes especially relevant during the pandemic.

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