

THE IMPACT OF TRAVEL 2.0 TECHNOLOGIES  
ON INTERNATIONAL TOURIST ARRIVALS

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2022

THE IMPACT OF TRAVEL 2.0 TECHNOLOGIES  
ON INTERNATIONAL TOURIST ARRIVALS

Thesis submitted to the  
Institute for Graduate Studies in Social Sciences  
in partial fulfillment of the requirements for the degree of

Master of Science  
in  
International Trade Management

by  
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Boğaziçi University

2022

## DECLARATION OF ORIGINALITY

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## ABSTRACT

### The Impact of Travel 2.0 Technologies on International Tourist Arrivals

The aim of the study is to measure the impact of Travel 2.0 technologies on international tourist arrivals. Specifically, there hardly exists comprehensive work in this research area. To address this gap, this study develops a conceptual model and conducts a multiple regression analysis. The international tourist arrivals by country of destination is the dependent variable; whereas, the average monthly visit to DMO's website, the number of reviews and opinions on tripadvisor.com, the number of listed properties on booking.com, and the number of listed tours on viator.com are the independent variables. Results show that Travel 2.0 technologies that are mostly used are reviews and opinions, bookings systems, and the touristic activity listing with a 56.5 percent impact on international tourist arrivals. Additionally, results indicate that there is a positive influence of the number of listed properties on booking.com on the international tourist arrivals by country of destination. This depicts that rich accommodation opportunities can create a direct touristic interest and bookings for the destination. Results also emphasize that tourists give priority respectively to the accommodation facilities and reliable information based on experiences of other travelers rather than websites belonging to the destination or the country's officials, activities and things to do. This research attempts to create a conceptual model linking Travel 2.0 technologies and the international tourist arrivals by country of destination and aims to shed light on future studies in this area.

## ÖZET

### The Impact of Travel 2.0 Technologies on International Tourist Arrivals

Bu çalışmanın amacı, Seyahat 2.0 teknolojilerinin uluslararası turist varışları üzerindeki etkisini ölçmektir. Özellikle, bu araştırma alanında kapsamlı bir çalışma neredeyse bulunmamaktadır. Bu boşluğu gidermek için, bu çalışma kavramsal bir model geliştirmekte ve çoklu regresyon analizi yapmaktadır. Gidilen ülkeye göre uluslararası turist varışları bağımlı değişken; ülkelerin resmi turizm websitelerinin aylık ziyaretçi ortalamaları, tripadvisor.com'daki yorum ve görüş sayıları, booking.com'da listelenen tesis sayıları ve viator.com'da listelenen tur sayıları ise bağımsız değişkenlerdir. Sonuçlar, en çok kullanılan Seyahat 2.0 teknolojilerinden; yorum ve görüşlerin, rezervasyon sistemlerinin ve turistik aktivite listelemenin yüzde 56.5 ile uluslararası turist varışları üzerinde etkisi olduğunu göstermektedir. Ek olarak sonuçlar, booking.com'da listelenen mülklerin sayısının varış ülkesine göre uluslararası turist varışları üzerinde olumlu bir etkisi olduğunu göstermektedir. Bu durum, zengin konaklama olanaklarının destinasyon için doğrudan bir turistik ilgi ve rezervasyon yaratabileceğini göstermektedir. Sonuçlar ayrıca, bir destinasyona veya ülkeye ait resmi turizm websitesinden ve yapılacak şeylerden ziyade turistlerin önceliği konaklama tesislerine, gezginlerin deneyimlerine dayalı güvenilir bilgilere verdiğini vurgulamaktadır. Bu araştırma, Seyahat 2.0 teknolojilerini ve varış ülkesine göre uluslararası turist varışlarını ilişkilendiren kavramsal bir model oluşturmaya çalışmakta ve gelecekte bu alanda yapılacak çalışmalara ışık tutmayı amaçlamaktadır.

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## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
B2C	Business to Consumer
CAWI	Computer-aided Web Interview
DMO	Destination Marketing Organization
eWOM	Electronic Word of Mouth
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
ICT	Information Communications Technology
LDA	Latent Dirichlet Allocation
NTO	National Tourism Organizations
OTA	Online Travel Agency
PMS	Property Management System
ROI	Return of Investment
RSS	Really Simple Syndication
SEO	Search Engine Optimization
SME	Small and Medium-sized Enterprises
SNA	Social Network Analysis
SNS	Social Networking Site
TAM	Technology Acceptance Model
UGC	User Generated Content
URI	Uniform Resource Identifier
VIF	Variance Inflation Factor

# CHAPTER 1

## INTRODUCTION

The global travel and tourism industry is hard to define as, unlike other industries, there is not one clear product or service. It directly incorporates people, technology, and many different industries. In this scope, information technologies, especially the “world wide web” and social media platforms have had a tremendous impact on the travel and tourism industry over the last two decades. These emerging technologies have changed consumer behaviors as well as forced industry stakeholders to change, adapt and serve according to new demands. Now, it is difficult for many travel and tourism companies to keep pace with the evolution of technologies, the changes in the market and consumer behaviors, and most importantly to grow and compete simultaneously in the global markets. For that reason, travel and tourism companies should not only understand the key concepts and web tools about the internet technologies but also, need to implement the best practices of these technologies into their businesses to attract more international tourists and stay competitive in the market.

The introduction of the World Wide Web has evolved throughout various phases. The web's current form is continuously changing, and modern developments are making a long-lasting impact on the internet. Web 1.0 is the "web of documents." Web 2.0 is the "web of people." And finally, Web 3.0 is thought to be what the internet should progress to and is as-of-yet unrealized. These three stages have their unique features but at the same time, they are differentiated from each other. Web 1.0 applies to publishing tools for static, proofread information that is “owned” and

considered proprietary. Web 2.0 applications are web pages that visitors can add to or change, and they can create their content (User Generated Content). Web 2.0 tools such as blogging, liking, sharing, commenting, reviewing, and messaging allow people to interact with other like-minded individuals and create content. Websites like these such as Facebook, and Twitter are part of web 2.0. Web 2.0 tools can be used by travel companies to interact with their customers more easily and develop a presence on the internet (Sigala, 2010).

The reflection of Web 2.0 technologies in the travel industry is called Travel 2.0. During the last two decades, the use of Web 2.0 tools for the generation, dissemination, and sharing of user-generated content<sup>1</sup> (UGC) and the creation of new value-added services have also affected the travel and tourism industry. Web 2.0 tools have immensely changed the way people search, find, read, gather, learn, share, develop, and consume information and the way people communicate with each other and collaboratively create new knowledge. They exert great influence in generating the idea of traveling during the actual planning process, and during the post-travel phase. The Web 2.0 tools that are used in travel websites may even also induce website visitors to alter their decisions after obtaining further information.

Travel technologies and Web 2.0 tools have inherently brought a new era and a bunch of new characteristic properties to companies, organizations, and the industry itself. These characteristic properties of Web 2.0 have impacted not only the behaviors and decision-making of travelers, the business models, strategies of the travel and tourism companies, and destination marketing activities but also the number of international tourist arrivals by country of destination. As a consequence

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<sup>1</sup> Original, brand-specific content created by customers and distributed on social media or other channels is known as user-generated content (also known as UGC or consumer-generated content). Images, videos, reviews, a testimonial, or even a podcast are all examples of user-generated content.

of this new travel technology era, the right and efficient usage of Travel 2.0 has grown in importance in international tourist arrivals. Especially destination marketing organizations that are responsible for tourism as a whole and travel tech companies that digitize the travel planning process are in the midst of this technological era.

In this context, this study emphasizes the impact of Travel 2.0 technologies on international tourist arrivals. The second chapter points out a brief introduction to the travel and tourism industry, with a market overview, statistics about the international tourist arrivals, and the effects of the COVID-19 pandemic on the travel and tourism industry. Also, the types of travel websites and their roles in the industry have been discussed to get a better understanding of the topic. In the third chapter, the key concepts and web tools for the travel and tourism industry are underlined as well as comparing their differences and mentioning the future studies. The following section discusses the types of travel websites and their features. Then previous studies that investigate the impact of Travel 2.0 technologies on international tourist arrivals are mentioned with their input-output variables, methods, findings, and sample specifications in the next chapter. The empirical study and the conceptual model to be used are explained in detail in chapter six. Then, sample selection, input-output variables, and data collection are discussed. The analysis and the results are discussed in detail in the seventh chapter. The final chapter presents the conclusion, the limitations of the study, suggestions for industry stakeholders, and policy recommendations for future studies.

## CHAPTER 2

### TRAVEL AND TOURISM INDUSTRY

#### 2.1 Market overview and international tourist arrival statistics

Tourism is the act of traveling to a different location, but can also be defined as traveling for leisure, business, or pleasure. Tourism is defined as a displacement of people from their customary habitat for more than 24 hours but less than a year for reasons other than paid employment. Tourism has many parts of the service industry that cater to those who are traveling (UNWTO, Glossary of Tourism Terms, 2022). On the other hand, travel can refer to different types of travel such as long-distance, short-distance, international, and domestic. Crucially it also includes both round trips and one-way journeys. Travel refers to the needs and desires of those who have traveled from one part of the world to another.

Tourism and travel industries differentiate from each other based on certain aspects. Many of the businesses that serve tourists also serve travelers more broadly, but there are notable differences. Tourism specifically focuses on business or pleasure trips where people spend one night at their destination before returning. Travel, however, covers many different types of travel and spans a wider duration.

The tourism industry, for which the global market size is 1.09 trillion U.S. dollars<sup>2</sup> as illustrated in Figure 1 is unlike other industries in the world. It is difficult to define because of its limitless and customized product mix and the lack of a distinct product or service. It incorporates many different industries and stakeholders

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<sup>2</sup> According to Statista (Dec 7, 2021) in 2020, the market size of the global travel and tourism sector declined over the previous year, reaching 1.09 trillion U.S. dollars.

such as travel agencies, travel companies, transport, accommodation, lodging, attractions, food and beverage, entertainment, and many more.

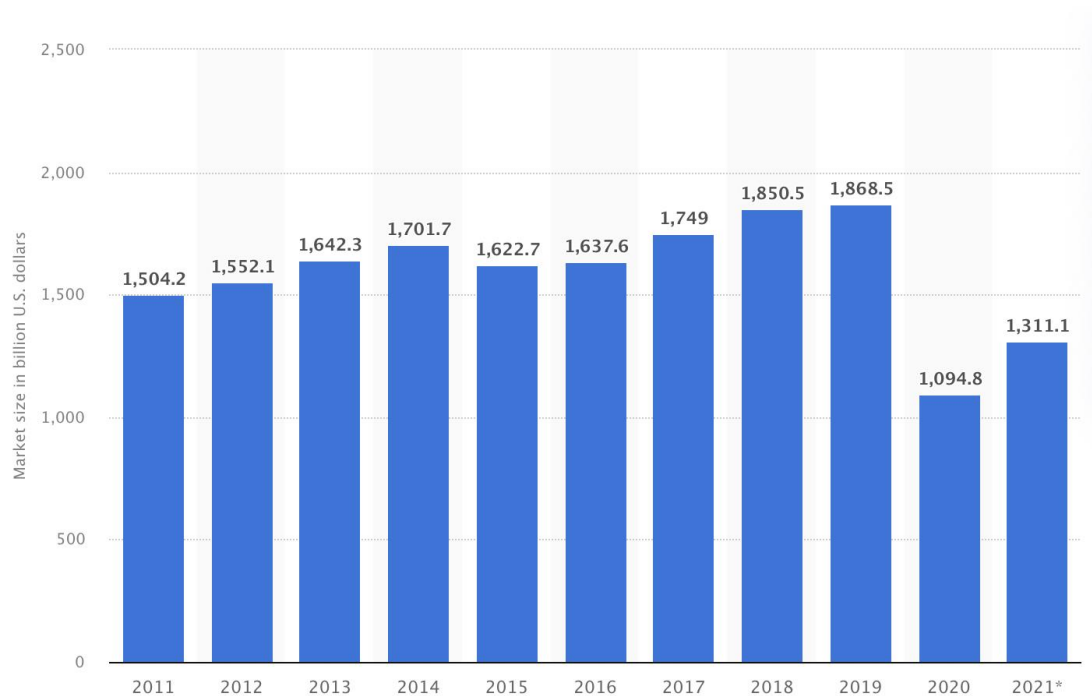


Figure 1. The market size of the tourism sector worldwide from 2011 to 2020, with a forecast for 2021 (in billion U.S. dollars)

Source: [Statista, August, 2021]

International tourists (overnight visitors) are tourists who travel to a country other than their usual residence, but outside their usual environment, for a period of not more than 12 months and whose primary reason for visiting is not to engage in a remunerated activity within the country visited (UNWTO, Glossary of Tourism Terms, 2022). When data on the number of tourists is unavailable, the number of visitors is displayed instead, which includes tourists, same-day visitors, cruise passengers, and crew members. The origins of arrivals and the methods used to collect them vary by country. Data is derived from border statistics (police, immigration, and so on) and augmented by border surveys in some circumstances. In other cases, the data comes from tourism lodging establishments. For certain

countries, the number of arrivals is restricted to those arriving by air, while for others, the number of arrivals is restricted to those staying in hotels. Some countries include arrivals of foreign-born citizens, whereas others do not. Inbound tourist data refers to the number of people who arrive rather than the number of people who travel. As a result, a person who visits a country multiple times in a particular period is counted as a new arrival each time. The number of arrivals is limited in certain countries to those arriving by plane, while in others, the number of arrivals is limited to those staying in hotels. Some countries include foreign-born citizens' arrivals, whereas others do not. Definitions should be clarified when comparing arrivals between countries. The number of people who arrive rather than the number of individuals who travel is referred to as inbound tourist data. As a result, someone who visits a country more than once in a given period is treated as a new arrival each time (Theobald, 2005).

For many countries around the world, tourism is an important source of revenue. Modern communication, economic prosperity, and extended periods of peace have all contributed to the expansion of the travel and tourism industry in recent decades. Furthermore, as booking through digital channels and online platforms has become more convenient, there are fewer hurdles to travel. That's why the segment with the highest worldwide revenue in the sector is hotels. It has the most users and, in comparison to the other sectors, has a relatively low average revenue per user (ARPU). In addition to that, the fastest increase in the travel and tourism industry may be found in China, because of the significant wealth expansion of the Chinese middle class over the last decade.

Changes in tourism have occurred from a growing awareness of human influence on the environment, thanks in great part to the younger population. For



tourists, sustainability is becoming increasingly crucial, particularly when it comes to methods of transportation. Environmental concerns are also influencing the market, prompting travel companies to develop new and innovative services for more environment-friendly travel. Furthermore, policies such as the carbon tax may influence how individuals travel and engage in tourism in general. This is especially true for cruises due to their negative impact on the environment with high carbon emissions. As a response, new environmentally friendly propulsion technologies, such as liquefied natural gas (LNG)<sup>3</sup>, are also being implemented to reduce the carbon footprint. (Lindstad & Rialland, 2020).

The COVID-19 pandemic has resulted in a drop in users and revenue in the travel and tourism industry throughout the last two years. Many tourists avoided overseas sites due to widespread concern about infection and incidence rates, as well as regional and/or national limitations. As a result, many people opted for domestic travel, even though the overall number of leisure holidays decreased. Many travel businesses gave free cancellations to help lessen the pandemic's harmful impact. Globally, the direct contribution of the travel and tourism industry to world GDP was approximately 4.7 trillion U.S. dollars in 2020 as shown in Figure 2. Unfortunately, it declined dramatically in 2019 from the 9.2 trillion U.S. dollars due to the coronavirus pandemic. Moreover, the percentage change in international tourist arrivals worldwide during COVID-19 declined by 74 percent.<sup>4</sup> As countries begin to open again, both local and international travel prospects are expanding at this

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<sup>3</sup> Liquefied natural gas (LNG) is natural gas (predominantly methane, CH<sub>4</sub>, with some mixture of ethane, C<sub>2</sub>H<sub>6</sub>) that has been cooled down to liquid form for ease and safety of non-pressurized storage or transport.

<sup>4</sup> According to Statista (Oct 13, 2021) in 2020, the total contribution of travel and tourism to gross domestic product (GDP) worldwide was approximately 4,671 billion U.S. dollars.

moment. Within the following few years, industry stakeholders expect the market to gradually recover.

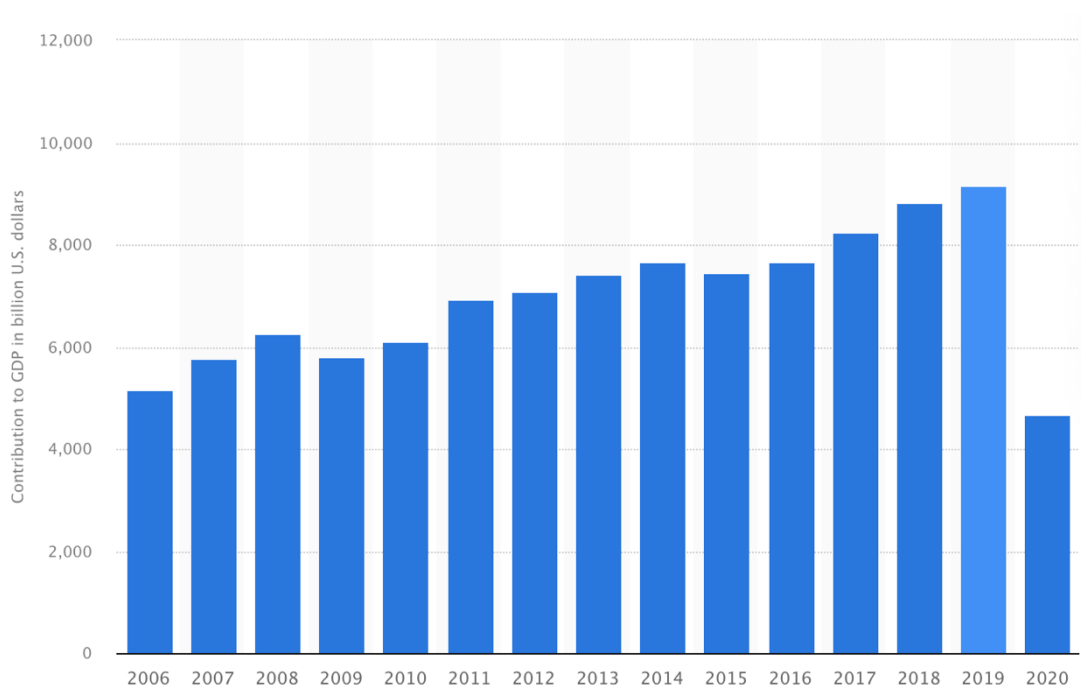


Figure 2. The total contribution of travel and tourism to gross domestic product (GDP) worldwide from 2006 to 2020 (in billion U.S. dollars)  
Source: [WTTC, June, 2021]

Furthermore, there is a significant relationship between the number of international tourist arrivals in the world and destination marketing activities. Such activities, efforts, and expenditures to promote regions and particular countries and destinations are reflected in the international tourist arrivals numbers as shown in Figures 3, 4, and 5.

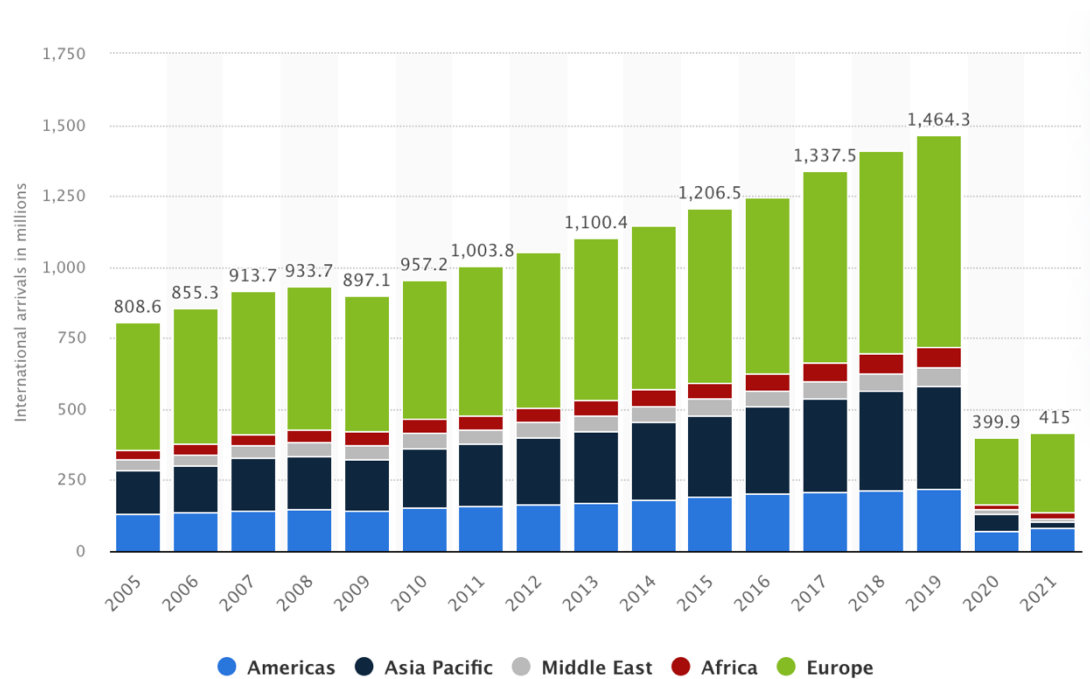
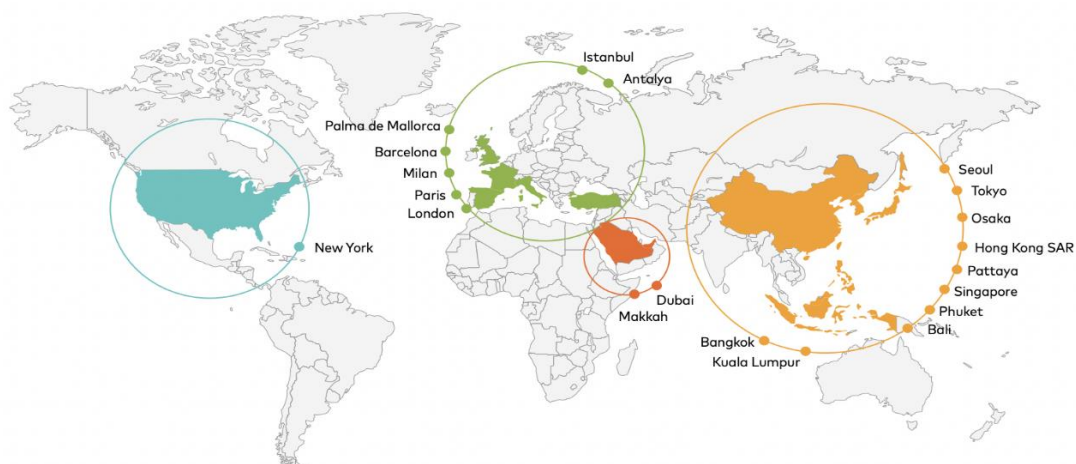


Figure 3. Number of international tourist arrivals worldwide from 2010 to 2021, by region (in billion U.S. dollars)  
Source: [UNWTO, January, 2022]

In 2019, 1.459 billion international tourist arrivals were recorded around the world, with an increase of 3.7 percent from 2018. The top 10 most visited destinations have generated 35 percent of the international tourist arrivals in 2019.

Rank ↕	Destination ↕	International tourist arrivals (2019) <sup>[1]</sup> ↕	International tourist arrivals (2018) <sup>[1]</sup> ↕	Change (2018 to 2019) (%) ↕	Change (2017 to 2018) (%) ↕
1	 France	–	89.4 million	-	▲ 2.9
2	 Spain	83.5 million	82.8 million	▲ 0.8	▲ 1.1
3	 United States	79.3 million	79.7 million	▼ 0.6	▲ 3.3
4	 China	65.7 million	62.9 million	▲ 4.5	▲ 3.6
5	 Italy	64.5 million	61.6 million	▲ 4.8	▲ 5.7
6	 Turkey	51.2 million	45.8 million	▲ 11.9	▲ 21.7
7	 Mexico	45.0 million	41.3 million	▲ 9.0	▲ 5.1
8	 Thailand	39.8 million	38.2 million	▲ 4.3	▲ 7.3
9	 Germany	39.6 million	38.9 million	▲ 1.8	▲ 3.8
10	 United Kingdom	39.4 million	38.7 million	▲ 1.9	▼ 2.2

Figure 4. Most visited destinations by international tourist arrivals  
Source: [UNWTO, December, 2020]



Rank	City	Total international visitors	Rank	City	Total international visitors
01	Bangkok	22.78MM	11	Seoul	11.25MM
02	Paris	19.10MM	12	Osaka	10.14MM
03	London	19.09MM	13	Makkah	10.00MM
04	Dubai	15.93MM	14	Phuket	9.89MM
05	Singapore	14.67MM	15	Pattaya	9.44MM
06	Kuala Lumpur	13.79MM	16	Milan	9.10MM
07	New York	13.60MM	17	Barcelona	9.09MM
08	Istanbul	13.40MM	18	Palma de Mallorca	8.96MM
09	Tokyo	12.93MM	19	Bali	8.26MM
10	Antalya	12.41MM	20	Hong Kong SAR	8.23MM

Figure 5. Most visited cities and the number of total international visitors in 2019  
Source: [Mastercard's Global Destinations Cities Index, September, 2019]

## 2.2 The effects of the COVID-19 pandemic on travel and tourism industry

Contagious diseases and tourism have a long history together. While tourism movements increase the transmission of illnesses, the disease's spread may hurt tourism. In terms of its effects and dissemination, the COVID-19 pandemic is unlike any other pandemic outbreak in the history of the world's economy. The COVID-19 pandemic started in China in December 2019 and in other countries in February 2020. It has spread all over the world and caused a large number of deaths (6.2 million deaths, 19th April 2022) (COVID-19 Data Explorer, 2022). The 2019 novel coronavirus is a new strain of coronavirus; Co stands for Corona, Vi for Virus, and D for Disease. The disease has hurt the tourism sector and the economy worldwide. It implies an antagonistic result on economic estimations and there might be negative attitudes toward residents from countries most affected by this virus (Sorokowski, et al., 2020). According to the UNWTO, the estimated loss in international tourism receipts is between 910 Billion U.S. dollars to 1.2 trillion U.S. dollars since the beginning of the pandemic.<sup>5</sup> Also, more than 100 million direct jobs in the tourism industry are at risk (UNWTO, 2021). International tourism has declined by over 70 percent in 2020 as shown in Figure 6, back to levels 30 years ago.

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<sup>5</sup> There will be no country that is unaffected. SIDS, Least Developed Countries (LDCs), and African countries are the destinations most reliant on tourism for jobs and economic growth. In 2019, the sector accounted for 10 percent of all exports in Africa.

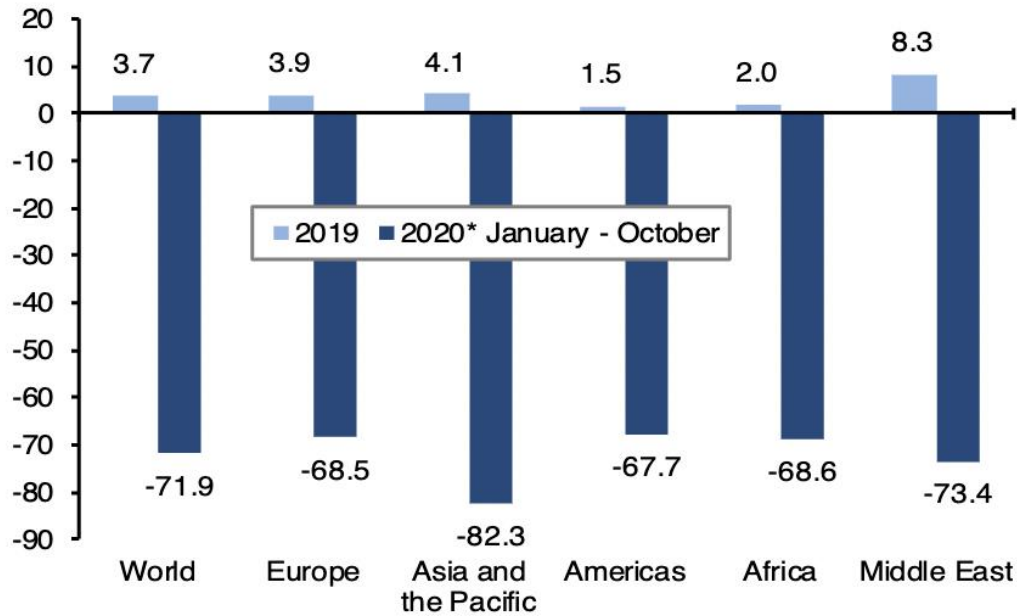


Figure 6. International tourist arrivals (percent change over 2019)  
Source: [UNWTO, December, 2020]

In 2021, the arrivals of international tourists increased to 415 million, showing a 4 percent rise over the previous year. According to early UNWTO numbers, international tourist arrivals (overnight tourists) were still 72 percent lower in 2021 than in the year before the epidemic. This follows from 2020, which was a devastating year for tourism industry, with overseas arrivals dropping by 73 percent.

Tourism's economic contribution in 2021 is anticipated to be 1.9 trillion U.S. dollars, up from 1.6 trillion U.S. dollars in 2020 but still significantly below the pre-pandemic value of 3.5 trillion U.S. dollars. International tourist export revenues could top 700 billion U.S. dollars in 2021, a little increase over 2020 due to stronger per-trip expenditure, but still less than half of the 1.7 trillion U.S. dollars recorded in 2019 (UNWTO, Tourism Grows 4% in 2021 but Remains Far Below Pre-pandemic Levels, 2022).

In 2021, average arrival receipts are expected to reach 1500 U.S. dollars, up from 1300 U.S. dollars in 2020. This is due to substantial untapped savings, longer stay lengths, and greater transportation and lodging costs. With 37 percent and 28 percent decreases in tourism expenditures in 2019, France and Belgium were considerably less affected. Saudi Arabia (-27 percent) and Qatar (-2 percent), meanwhile, had slightly better performance in 2021 (UNWTO, Tourism Grows 4% in 2021 but Remains Far Below Pre-pandemic Levels, 2022).

Domestic tourism continues to drive recovery in a growing number of destinations, particularly those with substantial domestic markets, even while international tourism recovers. Domestic tourism and close-to-home travel, as well as open-air activities, nature-based products, and rural tourism, are among the primary travel trends that will continue to shape tourism in 2022, according to experts. A 64 percent of experts also expect that international arrivals return to 2019 levels only in 2024 or later as illustrated in Figure 7. (UNWTO, Tourism Grows 4% in 2021 but Remains Far Below Pre-pandemic Levels, 2022).

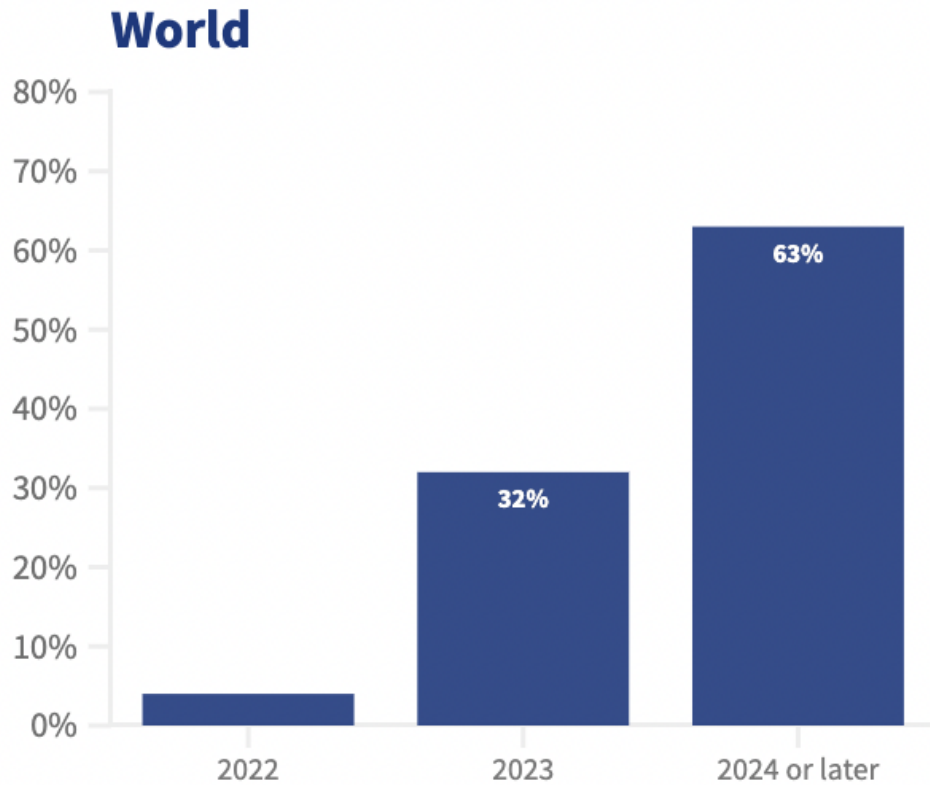


Figure 7. The expectations on international tourist arrivals after 2022  
Source: [UNWTO, March, 2022]

In the travel and tourism industry, the COVID-19 global pandemic has redefined the term "business as usual." As partial and even full lockdowns have become more regular, travel restrictions have been implemented around the world. As a result, we've witnessed a ripple effect in tourism-related firms. Airlines have been compelled to cut their flying schedules. Hotels, restaurants, and comparable facilities have experienced much worse, with some experiencing occupancy rates drop by as much as 90 percent. A growing number of businesses are being forced to close their doors forever. It has changed many aspects of human life. Business and touristic activities have changed because almost half the global population have restricted movement as a response to this pandemic. Tourist behaviors, risks, and management perceptions have greatly changed and most people tried to avoid overpopulated destinations. In the end, the recovery of tourism almost certainly rest



on the personal decisions of many individuals, as they weigh the risk of becoming ill against the need to travel.

### 2.3 Types of travel websites and their roles in the industry

Travel websites offer either user-generated content by the individuals such as reviews, blogs, comments, booking options, or a combination of more than one feature. Every year, over 1.5 billion individuals book travel, with 70 percent of them doing it online.<sup>6</sup> Travel websites are divided into nine categories as shown in Table 1. These are; travelogues and blogs, review websites, online travel agencies, service providers, metasearch engines and fare aggregators, blogs and news sites on current travel discounts, travel and tourism guides, social travel websites, and homestays.

Table 1. Types of Travel Websites and Their Main Roles in the Industry

	Types of Travel Websites	Main Role in the Industry
1	Travelogues and Blogs	Sharing travel experiences and advice
2	Review Websites	Gathering information about a journey
3	Online Travel Agencies	Selling travel and tourism services
4	Service Providers	Offering travel-related services providing retail sales
5	Metasearch Engines and Fare Aggregators	Conducting searches across multiple independent search engines
6	Blogs and New Sites on current travel discounts	Collecting and publishing bargain rates by advising consumers where to find them online
7	Travel and Tourism Guides	Providing advice on which destinations, attractions, accommodations, and so on, are worth a visit and providing information on how to access them.
8	Social Travel Websites	Pairing travelers based on destinations and interests
9	Homestays	Bringing together to tourists and locals for home stay

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<sup>6</sup> By 2026, online sales will account for 74 percent of total income in the Travel & Tourism industry.

### 2.3.1 Travelogues and blogs

A travel blog is simply one that focuses entirely on the topic of travel. People who write blog posts and content about their travel are called travel bloggers. These people are the one who writes travel blogs on their personal experiences, sometimes giving travel tips for specific areas or in general. A travelogue is an honest description of a person's travel experiences, usually written in the past tense and in the first person. The term "travelogue" is said to be a mixture of the words "travel" and "monologue."

### 2.3.2 Review websites

Online travel review websites (OTRs) hosted on journey-related websites gather information about traffic studies, reviews, and appraisals of places, points of interest, sports, products, and offerings that lets in for measure visitors' perceived photos, satisfaction, and loyalty.

### 2.3.3 Online travel agencies

An online travel agency (OTA) is a web-primarily based market that allows purchasers to analyze and e-book travel services and products, including inns, flights, vehicles, excursions, cruises, sports, and more at once with travel suppliers.

### 2.3.4 Service providers

Individual airlines, resorts, bed and breakfast (Koszewska, 2008) (Sigala, 2010) services, cruise lines, car condominium agencies, and different journey-associated provider vendors frequently maintain their own websites supplying retail sales. Many complex offerings encompass a few kinds of seek engine generation to look for

bookings in a positive timeframe, provider magnificence, geographic region, or rate range.

#### 2.3.5 Metasearch engines and fare aggregators

Metasearch engines combine the results of several different search engines. To gain real-time flight availability, metasearch engines frequently use "screen scraping". Screen scraping is a method of crawling through airline websites to obtain content by pulling data from the same HyperText Markup Language (HTML) feed that customers use to browse (rather than using a Semantic Web or database feed designed to be machine-readable). Metasearch engines normally filter incoming data to remove duplicate entries, although the underlying databases may not expose "advanced search" capabilities (because not all databases support the same options). Each sale made through an aggregator's website usually results in a cut for the aggregator<sup>7</sup> (Garr, 2017).

#### 2.3.6 Blogs and new sites on current travel discounts

Travel bargain websites collect and publicize discounted prices by directing customers to where they can get them on the internet (sometimes but not always through a direct link). Rather than providing detailed search tools, these sites typically focus on advertising specials, such as last-minute sales from travel suppliers looking to get rid of unused inventory; as a result, these sites are often best for consumers who are flexible about destinations and other key itinerary components.

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<sup>7</sup> Both a metasearch engine and an aggregator scan other sites and compile data under one roof, therefore the phrases are interchangeable. An OTA is a real travel agency that makes the reservations and is solely liable for anything you purchase via them.

### 2.3.7 Travel and tourism guides

Many websites are designed to look like a digital version of a traditional guidebook. They give suggestions and also provide directions about the locations, sights, hotels, and other attractions that are worth seeing. Most states, provinces, and countries have their convention and visitor bureaus, which usually sponsor a website devoted to promoting tourism in their respective locations. Cities that rely on tourism frequently have websites dedicated to promoting their destinations, each with its name and branding.

### 2.3.8 Social travel websites

A social travel website analyzes the places the user is going and matches them with other places they wish to visit based on where other people have gone.

### 2.3.9 Homestays

Homestay (also home stay and home-stay) is a popular form of hospitality and lodging whereby visitors share a residence with a local of the area to which they are traveling. Several travel websites specialize in organizing homestays in the market (Koszewska, 2008).

### 2.3.10 Destination marketing organization (DMO)

Destination marketing organizations (DMOs) are nonprofit organizations that promote and market local attractions, lodging alternatives, tourism services, transportation, associated retail stores, restaurants, events, and more. Their ultimate long-term goal is to attract tourists to relative destinations and help local economies grow as a result of greater tourism. In other words, destination marketing

organizations exist to help cities grow economically by promoting, strategizing, and marketing operations that attract tourists while also ensuring that they have a memorable experience (Presenza, Sheehan, & Ritchie, 2005). DMO names, to the best of my knowledge, can include words like "Experience," "Go," "Visit," and "Discover." "Meet," "Destination," and other words are followed by a city, state, province, region, and country. DMOs are mostly funded by national tourism organizations of the countries and create and execute strategic action plans according to the destination's tourism goals and plans.

## CHAPTER 3

### KEY CONCEPTS AND WEB TOOLS

### FOR TRAVEL AND TOURISM INDUSTRY

#### 3.1 The concept of Travel 1.0

The concept of the travel and tourism industry has been constantly changing since the invention of the Internet on January 1, 1983. The Internet removes the boundaries and makes the industry more and more accessible on a global scale. Furthermore, digitization provides the tools, frameworks, and technologies needed to create and add value to tourism products and experiences, but digitalization's success is contingent on the tourism industry's ability to share, learn, and interact. Internet and digitalization are both bringing unprecedented opportunities for tourism stakeholders not only for airlines, hotels, restaurants, and travel-related services providers but also for tourists to access new markets, develop new tourism products and services, and experience new destinations. All these developments and the idea behind the Travel 1.0 are derived from Web 1.0.

The first stage of the World Wide Web's evolution is referred to as Web 1.0. It lasted from 1989 to 2005 and was defined as a web of information connections. Tim Berners-Lee, the inventor of the World Wide Web, considers Web 1.0 to be a "read-only" medium (Berners-Lee, 1998). It offers very little involvement in terms of customer information sharing, and it was unable to communicate with the website.

Web 1.0 Technologies contains core web protocols such as; HTML, HyperText Transfer Protocol (HTTP), and Uniform Resource Identifier (URI). These

technologies enable people to establish an online presence and make their information available to anyone at any time across the world. It includes static web pages and content is served from the server's file system. On the other hand, web pages created by Web 1.0 technologies can only be understood by humans, in other words, web readers. It is not possible to perform dynamic events such as booking and reservation. These systems can solely update users and manage the content of the website.

### 3.2 The concept of Travel 2.0

The tourism industry is known to have immense use of the Internet, both on the supply and the demand side. The steady and rapid rise of the Internet has drastically transformed the sector's business processes, compelling suppliers and intermediaries to adjust to a scenario in which travelers have more options and flexibility when searching for, planning, booking, and purchasing tourism services and products. As a part of that, the word and a concept "Travel 2.0" was firstly used in December 2003 on a posting on the Planeta Web 2.0 Discussion Forum and is a branch of the Web 2.0 phenomenon.<sup>8</sup>

Web 2.0 is the second generation of the web. It was defined by Dale Dougherty in 2004 as a read-write web (Berners-Lee, 1998). Web 2.0 is an interactive, dynamic, and more accessible marketing tool for micro and small businesses in the tourism industry. It enables the creation and management of massive worldwide populations with shared interests. Web 2.0 technologies allow users to do more than merely get information from the internet and create collective

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<sup>8</sup> *Board index*. Intros and chatter. (n.d.). Retrieved April 29, 2022, from <https://forum.planeta.com/viewtopic.php?t=940&%3Bsid=e26ae965e5c68071a37c3e9fd785d69c+%7Cpublisher>

intelligence. The user is expected to connect with others and generate content (Choudhury, 2014). Online tools such as tagging, blogging, podcasting, curating with (really simple syndication) RSS, social bookmarking, social networking, social media, and web content voting make users not only users but also participants of the applications. In this context, such online tools make it possible to replace many desktop applications and new types of websites were born as shown in Table 2.

Table 2. Types of Websites in the Web 2.0 Era

Audio	BlogPod	Blogging	Bookmarking	Calendars
Chats	Collaboration	Communication	Community	CRM
E-commerce	E-learning	E-mail	Filesharing	Forums
Games	Images	Knowledge Base	Lists	Mapping
Mashups	Multi-media	Portals	RSS	Wiki

Web 2.0 tools include social media sites like Facebook, Twitter and review and booking websites such as Tripadvisor, booking.com. Also, local individuals and small and medium-sized enterprises (SMEs) can use Web 2.0 applications to raise their internet presence and interact with travelers, establish their credibility through reviews, improve their information communications technology (ICT) skills and lessen their reliance on middlemen. It is becoming increasingly vital, fascinating, inventive, and possible to use Web 2.0 services to connect travelers and local people for socio-economic interaction.

Travel 2.0 refers to the extension and customization of the Web 2.0 idea on the travel and tourism industry by empowering users to create their own content and exchange their words through globally interactive features on websites. Users can also share their travel experiences, photographs, and suggestions through online



travel communities. Overall, Travel 2.0 refers to the evolution of online services to a higher level of user empowerment and usefulness.

### 3.3 The comparison of Travel 1.0 and Travel 2.0

The revolution of web technologies has directly affected the tourism industry's development. Travel 1.0 is a customized idea of Web 1.0 and Travel 2.0 is an extension of Web 2.0. For that reason; key ideas, concepts, and tools of Web 1.0 and Web 2.0 have determined the features of Travel 1.0 and Travel 2.0. Furthermore, the key ideas and main concepts of Web 1.0 and Web 2.0 are shown in Figure 8.

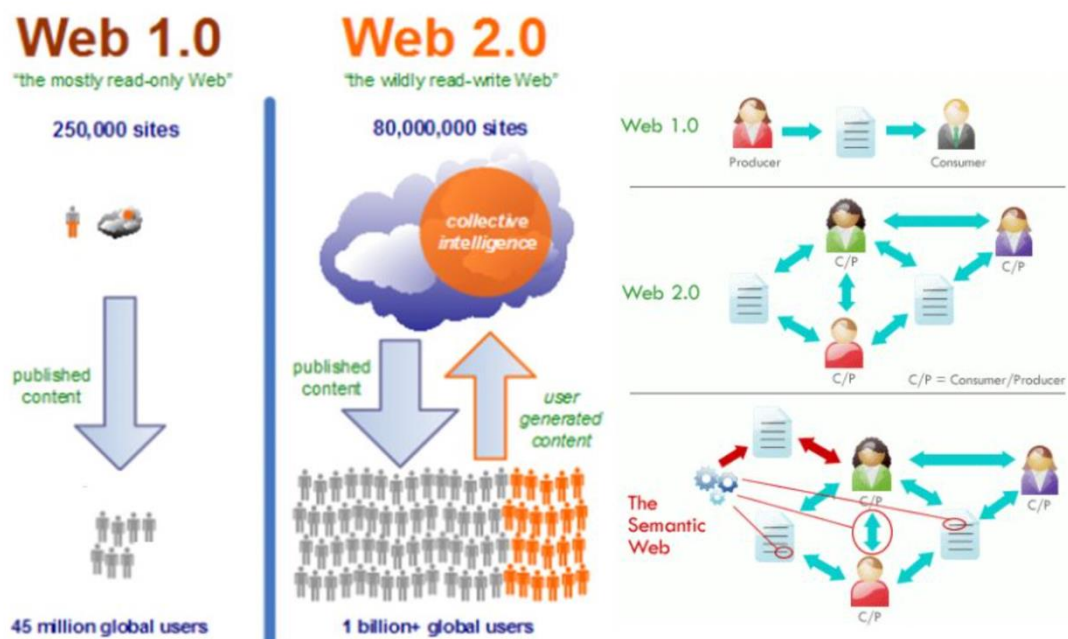


Figure 8. Comparison between the key ideas and main concepts of Web 1.0 and Web 2.0  
Source: [Comparative study of web 1.0, web 2.0 and web 3.0, 2008]

The primary distinction between Web 1.0 and Web 2.0 is that Web 1.0 is the initial version of a web browser, whereas Web 2.0 is a result of Web 1.0's progress. Web 1.0 is made up of data that can only be read on the internet, but Web 2.0 has improved with the addition of writable data to the internet. Web 1.0 is the only form

of web browser that can be read. It's more like a writer writing a book, with the audience just being able to read the writer's words. The Web 1.0 system worked by assigning a small number of employees to meet the informational needs of a large number of people. Web 2.0 introduced the concept of writable content on the internet, allowing people to contribute their thoughts and correct misconceptions (see Table 3). As a result, the internet evolved into an interactive community. Web 2.0 contains dynamic information that necessitates frequent adjustments (Naik & Shivalingaiah, 2008).

Table 3. The Parameter Comparison of Web 1.0 and Web 2.0

Parameters Of Comparison	Web 1.0	Web 2.0
Version	The first-ever version of a web browser	It is the amplified version of Web 1.0
Key Idea	Information sharing	Interaction
Data type	Consists of data that was only readable on the Internet	Got advanced with the technology of including writable data on the internet.
Web type	Static web	Dynamic web
Information	Information is more or else doesn't or cannot be modified.	Content requires fast updates and frequent modification
Structure	Contains linear information	Contains non-linear information
Technology	Web and File Servers, HTML, and Portals	Associated technologies include Ajax, JavaScript, CSS, and HTML5
Number of Users	Millions	Billions

Just like the difference between Web 1.0 and Web 2.0, Travel 2.0 end-users are not only consumers but also producers. In Travel 1.0 end-users can solely search and read information about a specific region, country, or destination. But in Travel 2.0 end-users participate in the manufacturing process and becomes consumer and producer at the same time. They can produce content before, during, and after their travel by blogging, tagging, and sharing their photos and videos on social media channels. Travelers make reviews and share their real-life experiences on various

websites. They can make online bookings and purchases and leave their footprints on the digital environment. These activities create collective intelligence and consciousness for other end-users and most importantly for the community. The collective intelligence and consciousness create awareness and popularity towards touristic activities and particular destinations. This loop creates value for all stakeholders of the tourism industry and enlarges the tourism market size.

### 3.4 The impact of Travel 2.0 on the travel industry

The Internet has changed the way individuals plan for and consume tourist products and services in the last decade (Buhalis & Law, 2008). User-generated content (UGC) and peer-to-peer applications, in other words, Web 2.0 applications, have been the most significant developments in Internet applications in recent years. The Internet provides a rich environment for aspiring travelers to familiarize themselves with, as well as harvest and retrieve travel-related information and resources. A growing number of tourism and hospitality businesses are considering the Internet for new business prospects. Travel 2.0 has risen to prominence as a new technique for gaining a competitive advantage.

Web 2.0 was defined in 2004 by Tim O'Reilly and Dale Dogherty, who characterized it as a separate medium distinguished by user interaction, openness, and network effects (Musser & O'Reilly, 2006). Web 2.0, also known as Travel 2.0 in the tourism industry, encompasses a variety of applications such as media and content syndication (RSS feeds), mashups, tagging, wikis, web forums, customer rating and evaluation systems, podcasting, blogs, microblogging (such as Twitter, Tumblr, Instagram, Pinterest, and others), photo sharing, and video sharing (Akehurst, 2009; O'Connor, 2008; Schmallegger & Carson, 2008).

Tourists can share their ideas and opinions about their vacations on the Internet and through Travel 2.0 applications, making them available to the worldwide Internet community (Dellarocas, 2003). The digital world is a world unto itself, and one that moves at an incredible speed. Every minute, thousands and even millions of downloads and uploads, posts and searches, messages sent and received, listens and streaming takes place on the internet. As shown in Figure 9, among photo-sharing applications, Instagram alone has roughly 1 billion monthly active users and almost 65.000 photos shared by Instagram users every Internet minute (Statista, 2022). The most famous video sharing tool is without doubt YouTube, with 5 billion videos viewed every day and 122 million active users daily (YouTube, 2022). Moreover, in 2021, 60 seconds on the web consists of more than 500 hours of YouTube content, 695,000 Instagram stories, and approximately 70 million WhatsApp and Facebook Messenger communications. In the same internet minute, there have been almost two million Tinder swipes and an amazing 1.6 million U.S. dollars spent online (Lewis, 2021).

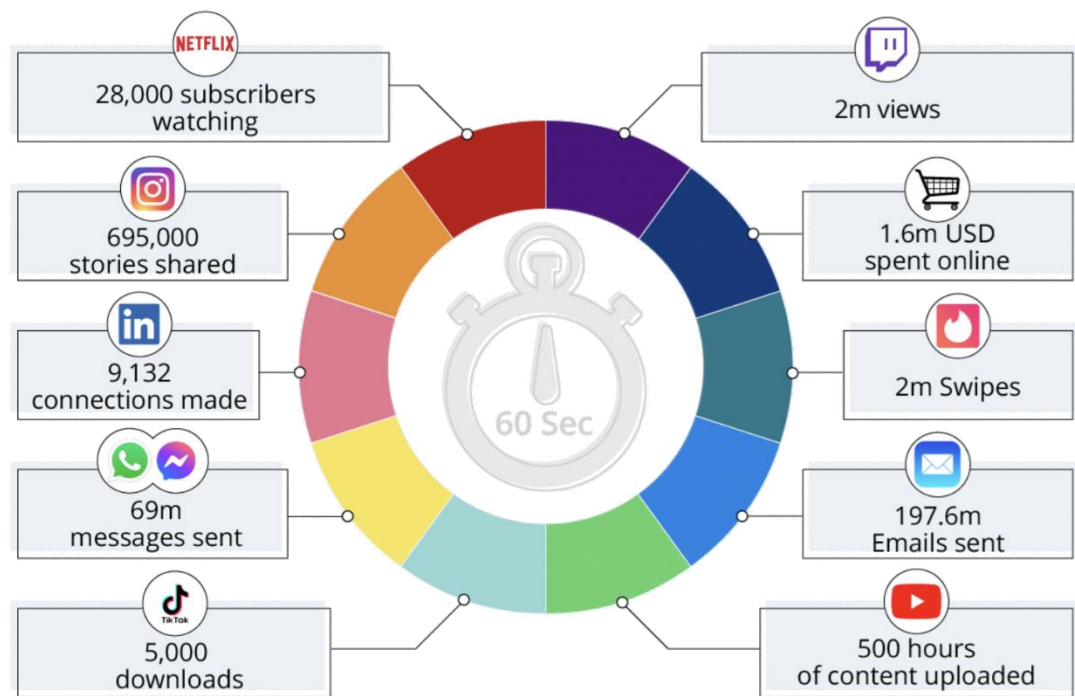


Figure 9. A minute on the Internet in 2021  
Source: [AllAccess, 2021]

Some research has revealed the enormous impact that UGC and Travel 2.0 applications have on encouraging travel, both during the planning process and afterward (Gretzel & Yoo, 2008). They can also persuade tourists to change their minds after gathering more information online. Indeed, according to eMarketer (2007b), among tourists who use peer evaluations to assist them to make hotel reservations, the percentage of travelers who changed their reservations based on reviews posted online by other consumers is 25 percent and 33 percent for occasional and frequent leisure travelers, respectively.

### 3.5 Future of the travel: Travel 3.0

The Travel 3.0 concept is essentially the third wave of innovation based on consumer mobile technology's always-connected vision in the tourism industry. Travel 3.0 addresses many of the trends and concepts that already exist in the most innovative

industries. Understanding these concepts is important for visualizing the different approaches proposed and for designing new ones. The challenges of providing Travel 3.0 are just beginning. The destinations need to self-adaptation to local culture and travel stakeholder status quo. But, at the same time, travel stakeholders are constantly calling for new approaches.

In the near future, mobile devices in the hands of travelers are expected to have the single greatest impact on the travel experience. With constant Internet access via 5G or Wi-Fi, as well as GPS and sensor technology, these gadgets' capabilities are rapidly evolving. The accelerometer devices that are seen in-game technologies will be added on top of it. Passengers will have more control and engagement in all parts of their travel, which will be unparalleled. Collaborative business models, human spirit drive mission, more creative societies in terms of Tourist 3.0, co-creation, communitization, open innovation, storytelling, culture shift towards collaboration and innovation, life-changing experiences will be placed in the heart of industry as key concepts of the Travel 3.0 (Segarra, 2015).

Travelers want more meaningful travel experiences, as well as the technology that enables them to do so by providing near-instant information, geolocation, mobile Internet, and the convenience with which they can book trips and access resources all around the world. In 3.0 terms, the new traveler will find more pleasure and meaning in excursions that take them beyond their comfort zone by immersing them in a completely different community and culture. Travel 3.0 gathers information, reviews, travel requirements, and other data using all available technology resources and then matches that data with the services and goods that their clients will demand. Breakthrough technologies are designed to assist companies in better grasping the

value of their customers' thoughts and feelings, and how this knowledge may help them better meet their clients' travel needs and interests.

## CHAPTER 4

### ESSENTIAL FEATURES OF TRAVEL WEBSITES

As the travel industry fully embraces the digital era, having a website with basic search and booking functions is no longer sufficient. Today's traveler, particularly millennials, expects a more dynamic, engaging web experience. They use the internet in various modes and on a variety of devices almost constantly. First impressions are established rapidly, and this is truer than ever for travel websites. New users spend a limited amount of time on a website, which means there exists less time to capture their attention and keep them there. Travelers in today's era of millennials and digital natives are extremely picky. They're looking for something unique. They're seeking carefully planned vacations that are ideally customized to their personalities. Travel websites are more likely to convert a transaction if they can give travelers the right information at the right moment, according to their individual needs. Every element of the travel website should strive to achieve this goal: to give users the most relevant information at the most appropriate time (Hung, Hu, & Lee, 2013).

In today's digital environment, developing and maintaining a visually appealing website is not a difficult task - it's a low-cost investment that travel companies cannot afford to overlook. Customers want an engaging, easy-to-navigate web experience that focuses on the products and services offered rather than the website itself. Responsive design capabilities, which allow for more dynamic aesthetics and integration with mobile devices like smartphones, tablets, and laptops, are a key driver in providing customers with an engaging, easy-to-navigate web experience (Carstens & Patterson, 2005). Simply said, consumers should not have to



struggle with a website to research and book their trip - the experience should be seamless and convenient in order to have the traveler return to the site again. In this context, the features of the website and the functions should be well defined and designed according to the consumer's needs and demands. Advanced technologies that are used in many different industries should be properly implemented on travel websites too.

#### 4.1 Advanced search filters

All travel websites have a search function at their core. Most people who look up vacation destinations on the internet don't have a specific destination in mind. Instead, they're investigating all the possibilities that appeal to them. So, a dynamic search engine is one of the most important aspects of a travel website. Travel search is straightforward when it breaks down to the essentials. It should provide answers to the following questions: "when" and "where." The search function can be improved by adding additional filters based on what the target audience is likely to utilize. A search engine should have filters to deliver information based on the customer's preferences and intention, such as location, distance, the country that customer wants to visit, and the date of the journey. Furthermore, there should be the possibility to conduct an advanced search based on flight tickets, hotels, vacation packages, and bundle packages that customers may select and book, as well as car rental and bus service providers (Fesenmaier, Xiang, Pan, & Law, 2010).

#### 4.2 Attractive photos and images

Photos and images are the most effective medium for inspiring and transmitting messages. They make a more powerful statement and increase the impact of the website. People also interact more on social networking sites (SNSs) with a lot of pictures. So it's safe to assume that if a website contains beautiful visuals, users will stay longer and interact more. Customers choose a specific location and display basic information about the destination, such as where it is located, what it is known for, what can be explored there, the historic significance of that location, the cost of that particular tour, and so on. All these visuals and information influence customers to visit and explore that location. Because visuals speak louder than words, interactive HD images play a critical role in influencing clients. Displaying appealing photographs of the destination, hotel rooms or restaurants entices customers to finalize their reservations (Oliveira & Casais, 2018). Airbnb makes good use of this feature to entice consumers by displaying a few of the top photos of the place.

#### 4.3 Augmented reality (AR)

Augmented reality has recently gained popularity in the travel business. AR allows users to take a virtual tour that includes a 3D perspective of surrounding reviews, Wi-Fi hotspots, real-time weather forecasts, and more. (Wei, 2019). The popularity comes from the fact that it allows hotels and other businesses in this industry to improve physical environments such as local landmarks and hotel rooms to persuade visitors to visit the location. Another major reason for rapid adoption is that people are accustomed to using their cellphones in every step of their travel. Thus the transition to augmented reality apps is happening without so much resistance (Kourouthanassis, Boletsis, Bardaki, & Chasanidou, 2015).

#### 4.4 Booking system

Cross-border payments are driven by security and simplicity of payment. As a result, incorporating a booking mechanism within a website is critical. For booking and payment, travelers use smartphones and online sites. Users should be able to compare prices, categorize locations, set reminders, and receive notifications about hotel deals with a powerful booking system. Technology solutions enable hotels and airlines to offer travelers online special deals and discounts, as well as referral and joining bonuses. The website should be linked to a property management system (PMS) to enable real-time updates. It will simplify things because they will be required to submit information such as the destination, check-in, and check-out dates, contact information, and other travel-related information. The booking system should accept a variety of payment options, such as credit cards, debit cards, reward points, or even new ways of payments like cryptocurrencies, to make the procedure as simple as possible (Samuel, 2022).

#### 4.5 Chatbots

A chatbot is a computer program that imitates a human travel agent by interacting with people using natural language. A chatbot system that is properly implemented may evaluate user preferences and anticipate collective intelligence. It can, in most situations, make superior user-centric recommendations. As a result, chatbots are becoming an increasingly important aspect of future customer services. Integration of chatbots is becoming progressively common, particularly with hotels and airlines. Guests or tourists can use the chatbot to get immediate answers to questions such as making a reservation, checking flight status, or arranging an itinerary. Guests may request room service just by texting a few emoticons, avoiding the need to speak to

anyone. In digitalizing the travel business, it must be ensured that chatbots can interpret and amend the majority of user requests without the assistance of humans. If this isn't practicable, a customer consultant should be ready to assist the customer in the background (Zumstein & Hundertmark, 2017).

#### 4.6 Favourites lists

Customers should be able to save certain places, attractions, hotels, flights, vehicles, and buses, as well as the cost of their tickets on travel websites. After going over all of the options, they can go back and review their choices. This makes it easier for them to choose the ideal trip plan and create their vacation schedule. Furthermore, the favorites list is a really useful tool for remembering places that caught the eyes of the customer briefly earlier in a previous search (Ip, Lee, & Law, 2010).

#### 4.7 Map integration

Integrating map providers such as Google Maps, Apple Maps, and Mapbox into the travel website allows tourists to investigate the locations and interests around their trip, which could lead to more reservations. For example, a consumer may be looking for a hotel and discovers a cultural excursion just a few blocks away using Google Maps. This could be a decision factor for hotel selection, providing a value proposition for travel companies when it comes to bundling products and services. In the world of Travel 2.0, a successful map integration into the website is also significant. Visitors would primarily like to know where to stay and where to get good authentic meal when they arrive at a new location. Websites and mobile apps should be able to provide easy access to nearby points of interest (Pana, Crottsa, & Mullerb, 2007).

#### 4.8 Payment gateways

Providing consumers with as many payment options as feasible should be a basic component of any travel website's operation since the majority of today's passengers use several credit cards, debit cards, and cutting-edge fintech solutions to make payments. Providing consumers with well-integrated, user-friendly payment options can establish a long-term relationship in a business to consumer (B2C) manner. Additionally, storing a customer's preferred payment method with the appropriate software provides the same level of convenience and service as predictive search software, and can be a decision factor to return to the same website in the future. A website without a simple payment gateway would be a drawback. There is no finalized travel arrangement unless payment is made. Payment gateway should be simple, with only the most relevant information to enter. It should not ask for extraneous information such as a postal code, address, phone number, or landline number (Noronha & Rao, 2017). Customers may lose interest in the entire booking process if it takes too long, and they may not choose the website for future travel bookings.

#### 4.9 Responsive design

Customers are captivated by a responsive design that is easy to integrate with mobile devices while still being aesthetically pleasing. Instead of highlighting the website, the design should create a simple navigation experience emphasizing the products and services supplied by the company. The website must be simple to navigate so that the customer does not experience any difficulties during the booking process. Customers will return to the site for future bookings if they have a smooth and convenient experience ((Nick)Dedeke, 2016).

#### 4.10 Reviews

People prefer to read reviews before booking a hotel or a vacation since reviews give them assurance about what to expect. As a result, individuals become more informed, and service providers become more active in offering the finest services possible.

Transparency of information about travel experiences is a crucial driver in establishing a comfortable atmosphere for consumers, thanks to the abundance of information available to today's passengers. Customers can review all aspects of a service provider's operations on a website, which increases transparency and allows travelers to see and interact with other customers, forming a small community that improves a travel company's ability to engage with customers and use feedback to improve how it operates (Liu & Park, 2015). Users want to hear about other people's experiences before making a decision, therefore testimonials, customer reviews, and recommendations are growing by the day. Many individuals buy stuff online because they have a five-star rating and positive comments in the comment area. Reviews, whether for travel or retail, boost conversion rates. Furthermore, reviews help in the improvement of the site's search engine optimization (SEO) ranking and make the service provider more visible in the Internet (Enge, Spencer, Fishkin, & Stricchiola, 2012).

#### 4.11 Social media integrations

Travelers enjoy interacting with other travelers by sharing their experiences, creating content about their travels, offering recommendations, and so on. Many of these conversations currently take place on social media platforms like Facebook, Twitter, and Instagram. Travel companies with user-friendly social integrations on their websites are better positioned to participate in these conversations and use them as a

key driver for customer engagement and online reputation management strategies (Xiang & Gretzel, 2010).

#### 4.12 Virtual reality (VR)

Virtual reality is a term that refers to interactive images or films that allow the spectator to explore a scene in 360 degrees. Unlike a traditional video image, which is filmed from a single point of view, VR production covers every aspect of a site. Virtual reality can be utilized in the travel business to capture tourism websites in a unique and immersive way. This is accomplished with the help of specialized cameras, rigs, and software. After that, the information can be viewed via a VR headset, a standard PC, or a mobile device. Although there is common belief that virtual reality content can only be watched with a dedicated VR headset, this is not the case. Although viewing VR in this manner provides a more immersive experience, it can also be viewed on any platform, including websites and smartphones (Disztinger, Schlögl, & Groth, 2017). The most typical application of virtual reality in the tourism industry is the marketing (Bogicevic, Seo, Kandampully, Q.Liu, & Rudd, 2019). It's a strong marketing tool to be able to capture destinations and vacation sites in such a memorable and engaging way. One of VR's main advantages is that it allows users to have the sensation of "being there." Regular photos and videos can be effective at demonstrating what a place has to offer, but they rarely elicit an emotional response. In tourism, virtual reality has the capacity to put the user in the middle of the scene, making it easier for them to envision themselves there. Applications of VR in tourism include virtual reality travel experiences, VR tourism content for social media/websites, and virtual hotel tours (VR FOR TOURISM, 2019).

#### 4.13 24/7 Customer service

If a customer traveling to a foreign country has trouble finding a new hotel room, the related agency would be required to provide immediate assistance or support to the customer. A travel website should also include a customer service department that is available 24 hours a day, seven days a week. Customers can use this to contact the travel firm and ask questions instead of typing an email and waiting for hours to get a response. Customers prefer to ask specific questions and receive immediate answers concerning travel. Travel websites can also include a little chat box where customers can speak with customer representatives. This would undoubtedly assist travel websites in bridging the gap between the company and the customer (Mills & Morrison, 2003).



## CHAPTER 5

### LITERATURE REVIEW

Since the early 2000s, there is an increasing number of studies measuring the impact of Travel 2.0 technologies on international tourist arrivals in the industry. These studies use different methods, sources of data, analysis methods and topics.

Although, still there is a lack of comprehensive work exists. That's why it is needed to develop a conceptual model to evaluate the impact of Travel 2.0 technologies on international tourist arrivals in the industry. Over the last two decades, the tourism industry and DMOs have increasingly invested in Web 2.0 technologies and applications as a cost-effective means of promoting destinations online. As a result of that, the evolution and development of the scientific production of Web 2.0 in destination marketing have increased exponentially as shown in Figure 10 (Mariani, 2020).

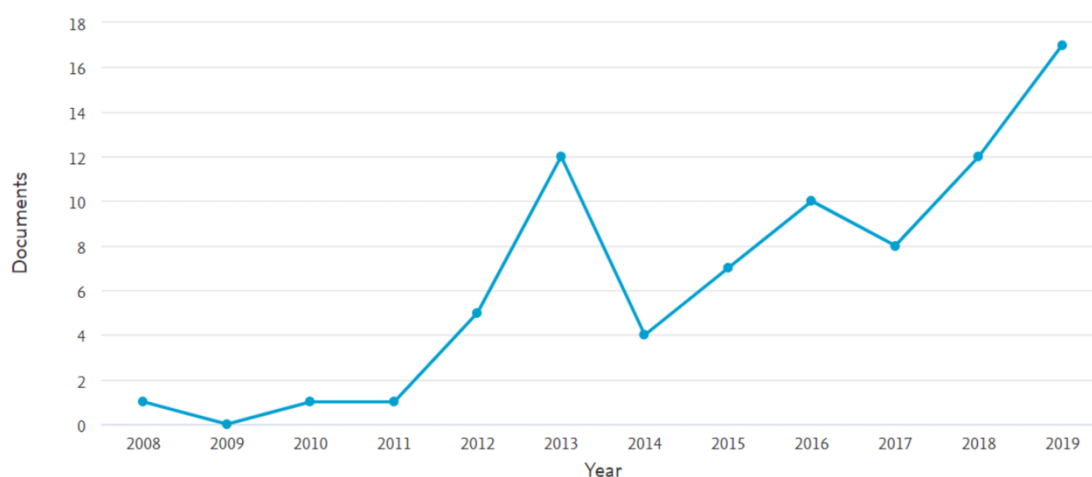


Figure 10. The trend of documents (scientific outputs) pertaining to Web 2.0 for destination marketing by year until 2019

Source: [Web 2.0 and Destination Marketing: Current Trends and Future Directions, 2020]

According to research and literature, there are three major areas that measure the impact of Travel 2.0 technologies on international tourist arrivals as shown in Figure 11. These are the drivers of adoption and acceptance of Web 2.0 technologies; the usage patterns, practices and processes of Web 2.0 technologies; and the outcomes of the use of Web 2.0 (Mariani, 2020). The subsections that follow use these three categories to map out the available literature.

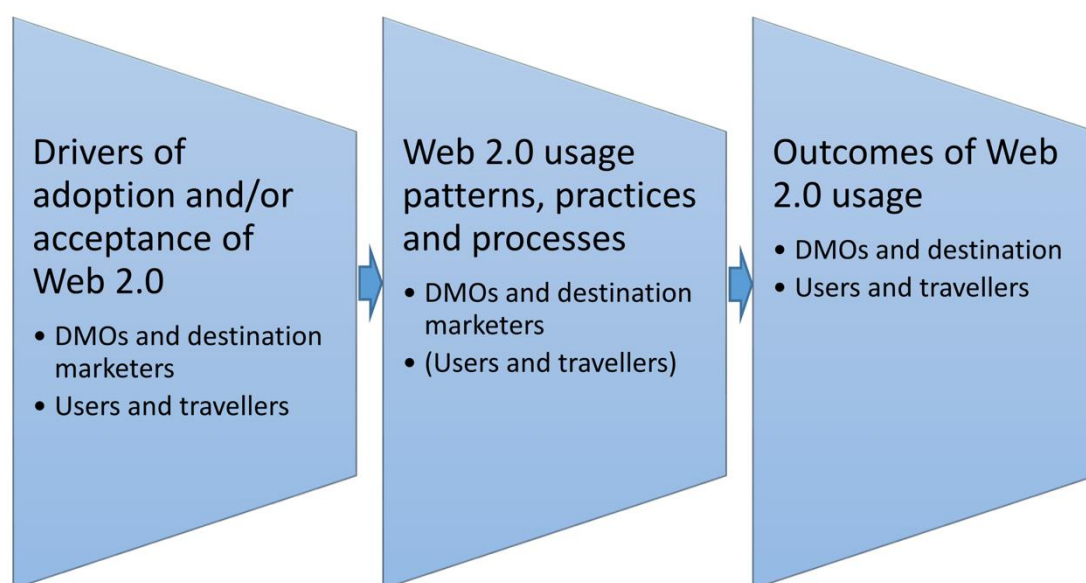


Figure 11. Three major areas that measure the Travel 2.0 technologies on international tourist arrivals in literature

Source: [Web 2.0 and Destination Marketing: Current Trends and Future Directions, 2020]

### 5.1 Drivers of adoption and acceptance of Web 2.0

The factors that influence DMOs and destination marketers' adoption and acceptance of Web 2.0 technologies have been reviewed based on the following main topics; the advantages and disadvantages of establishing social network sites, the budget time and resource limitations, the skills, knowledge, experience, and competencies required to competently deploy Web 2.0 technologies, the social capital and trust requirements, the necessity to build and nurture a virtual community, as well as the ability to connect to other ICT websites.

#### 5.1.1 The advantages and disadvantages of establishing SNSs

The internet's continued emergence as a travel and tourism communications medium poses issues for destination marketing groups and tourism businesses. Moreover, the introduction of Web 2.0 tools has ushered in a new era of word-of-mouth marketing. Tourism industry stakeholders such as tour operators, travel agencies, national tourism boards, and destination marketing organizations use blogs as part of their marketing strategy. Also, they are trying to use user generated content (UGC) as much as they can to create a more sincere virtual community (Schmallegger & Dean, 2008). The use of social media in the context of destination marketing is also becoming more popular. Another study conducted by Lange-Faria, W and Elliot, S. (2012) aims to consolidate existing research, theories, and concepts in order to better understand how tourist authorities use social media apps and to offer a link between past studies and future success. On the other hand, user-generated content is influencing an increasing number of travelers, posing a range of difficulties and opportunities for DMOs such as credibility, and market penetration (Camprubí, Guia, & Comas, 2013). There's also a collection of studies that look at marketing communications programs, the potential offered by the availability of Web 2.0 applications, and how they're analyzing the success of these tools. These analyses assist organizations in rethinking current marketing resource allocations and strategies to design and implement novel Web 2.0 strategies for long-term client loyalty and competitive advantage (Davidson & Keup, 2014).

### 5.1.2 The budget, time, and resource limitations

The majority of DMOs are unfamiliar with new Internet-based technologies and have not had enough opportunities to learn about and evaluate these rapidly evolving technologies. The major restrictions that DMOs face have been identified as lack of time to learn and lack of funding to install technologies (Lee & Wicks, 2010).

Furthermore, the relationship between social media and DMOs has lots of findings in the literature. In one paper, assessing Facebook as a destination marketing tool, Mariani, M. M., Di Felice, M. and Mura, M. (2016) investigate how regional DMOs in Italy use Facebook to advertise their destinations with advanced available metrics in Facebook. In another paper, Perakakis, E., Trihas, N., Venitourakis, M., Mastorakis, G. and Kopanakis, I. (2016) investigate the use of social media for destination marketing among 325 municipalities in Greece. They come up with the result that social media exploitation is still relatively restricted and primarily experimental; Greek municipalities are recently beginning to understand the added worth of this new marketing trend. Another comprehensive study conducted by Wozniak, T., Stangl, B., Schegg, R. and Liebrich, A. (2017) measure the return of investment (ROI) of tourism organizations in the success of social media. They gather replies from 150 tourism companies via an online survey, and social media data from Fanpage Karma, a monitoring service, provide insights for Facebook, Twitter, Google+, YouTube, Instagram, and Pinterest. Even though internet services are becoming increasingly important for the consumer journey, most tourism companies in the three countries examined commit little money and people to online marketing and social media. The tourism groups' achievements are lacking, particularly when it comes to involvement metrics. A discussion of revealed relationships, such as those between marketing budget and success measurements for

YouTube videos, is provided. Another major subtopic is the use and adoption of social media strategies by small regional destinations. In this context, Pabel, A. and Prideaux, B. (2016) conduct a study to understand the challenges faced by small regional destinations. In this study, the findings of a visitor survey of 986 visitors, on social media is significant to 27.9 percent of those looking for information about their forthcoming trip. Surprisingly, just 15.6 percent of those polled state that they use apps to help them make travel decisions. Because of the rise in the usage of social media and the rise in smartphone ownership, destination marketing organizations for small regional locations must pay more attention to social media and its delivery mechanisms, such as smartphones.

#### 5.1.3 The skills, knowledge, experience, and competencies required to competently deploy Web 2.0 technologies

ICTs have had a huge impact on the travel and tourism industry, as well as the overall experience. ICT has shown to be a significant ally in harmonizing and coordinating the operations of local stakeholders as well as reaching out to passengers for destination marketing organizations (DMOs). According to this perspective, Fernández-Cavia, J., Marchiori, E., Haven-Tang, C. and Cantoni, L. (2017) conduct a study to examine destination brand communication tactics, particularly those used online (official websites, social media, and mobile applications). The findings show that destination brand communication is still not fully standardized or professionalized; online tools (websites, social media, and mobile apps) are used tactically rather than strategically, and DMO managers clearly place a higher value on social media and official websites than mobile apps. Another study looks into Tourism New Zealand's (TNZ) social media campaign to promote

New Zealand (NZ) as a tourism destination for free and independent travelers from China, including Chinese actress Yao Chen as a celebrity endorsement. Yao Chen uses her Sina Weibo microblog, which has over 10.9 million followers, to chronicle her travel experiences in New Zealand, including her wedding in Queenstown, promoting awareness of New Zealand as a tourist destination in China. This article uses a single case study to demonstrate how a foreign celebrity's social media travel experience might act as a script for a typical travel experience for future passengers. Furthermore, to maximize the benefits of the collaborative social media campaign, government tourism agencies and businesses must actively monitor the content on the celebrity endorser's social media site, which allows them to learn more about the target customer and tailor their offerings accordingly. A lack of relevant language and cultural skills, on the other hand, can be a barrier to tourism enterprises enjoying the benefits of such a campaign (Fath, Fiedler, Li, & Whittaker, 2017).

#### 5.1.4 The social capital and trust requirements

Lee, B. C., Cho, J. and Hwang, D. (2013) analyze the impact of social capital on the tourism technology adoption process based on four major variables: social networks, trust, norms, and associational activity. The study model that integrates social capital into the technology acceptance model (TAM) is established based on their correlations with technology adoption. As a result, perception-related variables such as bridging relationships, trust, associational activity, and norms all have substantial effects on technology adoption perceptions. The distinct influence of trust with different types of DMO managers' social networks on the technology adoption process is discovered in this study. This study also discusses the practical and

theoretical implications of the findings on the facilitation of DMOs' tourism technology adoption.

#### 5.1.5 The necessity to build and nurture a virtual community

Sambhanthan, A., Thelijagoda, S., Good, A. and Scupola, A. (2016) investigate the many tactics used by the hospitality industry (hotels) to leverage YouTube-based platforms for efficient destination marketing, as well as insights into the important drivers and difficulties contained within YouTube-based community interactions for destination marketing. The content of YouTube user comments has been analyzed, and the results are presented under the five main groups of virtual communities. More broadly, the virtual community typology is used to assess the YouTube platform for efficient destination marketing.

#### 5.1.6 The ability to connect to other ICT websites

The use of customized orientation has improved the effectiveness of destination advertising to potential tourists. Individuals are exposed to adverts connected to a location on their social media newsfeed after conducting an online search for information about the place. However, further knowledge on how these destination messages should be written is required. Wang, S. and Lehto, X. (2020) aim to determine how destination advertising design, message appeal type, and language abstraction level interact with a message recipient's psychological distance to his or her journey to influence customer response to the advertising. The findings reveal that respondents' preferences for message design can be influenced by their perceived temporal distance from their travel intentions or their perceived physical distance from their journey destination.

## 5.2 Web 2.0 usage patterns, practices, and processes

The factors that influence Web 2.0 usage patterns, practices, and processes have been discussed based on the following main topics; the quality and quantity of users, the type of medium, the type of content, and the comparison and benchmarking of SNSs' usage practices across multiple DMOs.

### 5.2.1 The quality and quantity of users

There is still a lack of understanding of how destination marketing organizations (DMOs) use social network sites such as Facebook, Instagram, and Twitter. Bigné, E., Oltra, E. and Andreu, L. (2019) conduct research to understand the relationship between Twitter activity and short-break holidays. The results show that the number of retweets and replies by users, as well as the number of event tweets, tourist attraction tweets, and retweets by DMOs, appear to be able to predict the hotel occupancy rate for a given destination.

### 5.2.2 The type of medium

The relationship between the SNS and the overall trends and usage patterns of microblogging, and the relationship between social media ecology and place branding is another important issue. Hruška, J. and Pásková, M. (2018) analyze national tourism organizations' usage patterns of social media. The information used in the analysis is publicly available on the national tourism organizations' websites and social media pages. The management of these NTO accounts (particularly the responsiveness to user contributions and inclusion of users of generated content), as well as the concept and focus of contributions generated by the NTO, are reviewed and contrasted. The importance of social media in destination marketing has been



highlighted by an analysis of the use of social media by the NTOs of the ten countries chosen. In another paper, Sevin, E. (2013) investigate the relationship between Twitter usage patterns in destination marketing and place branding with a comparative study. The study discovers that destination marketing campaigns mostly use Twitter to inform their followers about events taking place in their jurisdiction, such as festivals, concerts, and fairs. These projects don't always make use of Twitter's interpersonal communication and networking features. This social media platform, on the other hand, is used to disseminate information through the internet.

### 5.2.3 The type of content

Based on the recent trend on social networking sites, user generated content is replacing traditional firm-created content. The study by Song, S. G. and Kim, D. Y. (2016) focuses on three major cities in Japan and examines the representative aspects of visual information in both destination marketing organizations (DMOs) websites and social networking sites (Pinterest). This study finds disparities between two channels when analyzing photographs in terms of 13 categories, demonstrating a discrepancy between tourists' desires and marketers' forecasts. The study's findings reveal possible DMO marketing techniques that use social media to support and reinforce positive destination images. Another study investigates social media-based visual humor use in tourism marketing. Tourism organizations that use visual social media marketing are having difficulty putting it into practice, particularly when it comes to developing engagement-based visual message strategies. Creating such appealing postings, on the other hand, might result in the excellent brand and financial effects. Given its capacity to develop social interactions, humor has been identified as a powerful weapon for social media communication. There are six

different forms of humor content and six different types of symbolic meaning in the results, none of which are product-related. This research adds to the tourism literature and humor theory, as well as provides tourism companies with a comprehensive understanding of how to properly exploit social media-based visual humor to increase consumer reach and engagement (Ge, 2019).

#### 5.2.4 The comparison and benchmarking of SNSs' usage practices across multiple DMOs

Social media is gaining popularity and more practicality as a component of destination marketing organization's (DMO) marketing strategy at a time when public sector investments decrease. DMOs can use social media to reach a worldwide audience with resources. S. Hays, S. Page, S. J. Page and D. Buhalis' (2013) analyze how DMOs in the top ten most visited countries by international tourists use social media. The study examines the use and impact of social media marketing techniques using content analysis and semi-structured interviews and proposes a framework of best practices for other NTOs to learn from. According to the report, top DMOs' use of social media is still mostly experimental, and their techniques differ greatly. In another study, Milwood, P., Marchiori, E. and Zach, F. (2013) compare the social media adoption and use in different countries. The study aims to find out if there are any discrepancies in how cutting-edge social media platforms are adopted and managed in two large tourism markets: the United States and Switzerland. While destination marketing organizations (DMOs) in the United States have begun to integrate various social media capabilities onto their websites in recent years, Swiss DMOs appear to have been more cautious, implementing fewer social media technologies. Swiss DMOs are governed by a separate organizational framework,

which supports but occasionally limits the use of such technologies. DMOs at various levels of development need to strategically structure their web marketing efforts to optimize and more efficiently leverage social media adoption.

### 5.3 Outcomes of Web 2.0 usage

The outcomes of the use of Web 2.0 on DMOs and destinations have been analyzed in relation to several aspects; the creation of technologies to boost a destination's and its attractions' appeal, destination brand co-creation, the relationship between DMO and SNSs, the online reputation of a destination, selection of the most appropriate channels/media for segmentation and communication.

#### 5.3.1 The creation of technologies to boost a destination's and its attractions' appeal

Many platforms for online reviews in the tourism industry, such as Tripadvisor, Lonely Planet, and Google Maps, have been increasingly widespread in study and practice in recent decades, leading to an increase in the number of studies on online reviews and the application of new analytical methods (Cheng, Fu, Sun, Bilgihan, & Okumus, 2019; Chuang et al., 2017). Data availability, speed and simplicity of data collection, and non-intrusiveness with human subjects are all advantages of online review research (Lu & Stepchenkova, 2015). V. Taecharungroj and B. Mathayomchan (2019) provide a method for assessing online reviews using machine learning techniques that tourism and destination marketing practitioners can understand and implement to improve their attractions. This research examines Tripadvisor assessments of tourist attractions in Phuket, Thailand, including beaches, islands, temples, a pedestrian strip, and markets. 65,079 internet reviews are analyzed using two machine learning techniques: Latent Dirichlet Allocation (LDA)

and naive Bayes modeling. LDA modeling helps the researchers determine the dimensions of each type of attraction. As a result, this research develops two practical tools; dimensional salience-valence analysis (DSVA) and lexical salience-valence analysis (LSVA). The Tourism Authority of Thailand (TAT) use these tools to suggest actions for tourist.

In another study, Sangpikul (2008) investigates the travel reasons of Japanese senior travelers to Thailand using the conceptual framework of push and pulls motivations. Three push and four pull factor dimensions are determined using factor analysis. The four pull elements are 'cultural and historical attractions,' 'travel arrangements and facilities,' 'shopping and leisure activities,' and 'safety and cleanliness.' The three push factors are 'novelty and knowledge-seeking,' 'rest and relaxation,' and 'ego-enhancement.' The most important push and pull elements are, respectively, 'novelty and knowledge-seeking' and 'cultural and historical attractions.' Multiple regression research reveals that psychological well-being (i.e. good effect) and education are the two factors impacting Japanese senior travelers' travel inclinations to Thailand.

Weber (1997) conducts a study to determine the number of expectations that German travelers to Australia have, as well as their perceptions and satisfaction with their trip. A pre-and post-trip evaluation strategy is used. The applicability of Oliver's expectancy disconfirmation theory in the context of tourists' happiness with a place is determined using regression analysis. The variables "Seeing stunning vistas," "Experiencing the expanse of the country," and "Watching rare fauna" are scored highest by German travelers in terms of expectations and the extent to which these expectations are satisfied. Furthermore, disconfirmations are discovered to have a significant impact on trip pleasure. However, contentment is influenced by more than

just how well expectations are satisfied. The evaluation of the trip is also found to be influenced by certain travel characteristics.

### 5.3.2 Destination brand co-creation

When destination marketing organizations built and generated their destination brands, one-way communication with consumers was prevalent. Social media, on the other hand, has allowed for two-way interaction, with customers engaging in the construction of a destination brand identity/image. Lim, Y., Chung, Y. and Weaver, P. A. (2012) investigate consumer perceptions of destination brands developed by consumer-generated videos and destination-marketing organization videos.

Consumer-generated videos do not convey the same destination brand as videos created by destination marketers, according to the research. Furthermore, consumer-generated videos have a negligible effect on a destination's brand. This research looks at destination-branding methods, including the influence of social media in establishing destination-brand identity and image. In another study, Jimenez-Barreto, J., Sthapit, E., Rubio, N. and Campo, S. (2019) explore the dimensions of online destination brand experience from two different tourist profiles perspectives. The results indicate that DMOs should focus on generating sensory, emotive, behavioral, and intellectual experiences, as well as promoting person-to-person connections and allowing users to produce content on destination platforms, rather than simply transmitting content.

In another study, Qu and Lam (1997) conduct research to put forth the travel demand model for Mainland Chinese tourists to Hong Kong. The study aims to determine which exogenous variables best describe Mainland Chinese tourists' travel demand to Hong Kong. A travel demand model is developed using annual time series

data for 'a number of Mainland Chinese tourist arrivals,' 'China disposable income per capita,' 'consumer price indices in Hong Kong and China,' and 'exchange rates from 1984 to 1995. A literature review leads to the selection of seven exogenous variables for the model. To construct the demand model, an OLS multiple regression analysis is used to identify the 'best' subset of seven exogenous variables. The findings reveal that Mainland Chinese tourists' travel demand to Hong Kong can be explained by 'disposable income per capita' and relaxation of visa rules.'

### 5.3.3 Relationship between DMO and SNSs

Mariani, M. M., Mura, M. and Di Felice, M. (2018) investigate how the NTOs of the top ten most visited countries employ Facebook. The data show that the way Facebook is used tactically varies greatly among NTOs. According to the panel data regression analyses, adding visual content (namely images) and posting on weekends increase engagement, but posting in the evening decreases engagement. There is no statistically significant relationship between post frequency and social engagement. The survey also reveals that most NTOs (except for Italy, Spain, Turkey, and the United Kingdom) use Facebook in a top-down manner, with only limited spontaneous user-generated material (UGC) allowed.

### 5.3.4 Online reputation of a destination

Another aspect of Web 2.0 outcomes is how destination marketing organizations (DMOs) use off-line technologies, official destination websites, and social media platforms to involve stakeholders in destination marketing and management. Trunfio, M. and Della Lucia, M. (2019) examine the best practice of Italian regional DMOs with three methodological tools. The findings show that regional DMOs in Italy are

using digital platforms and offline participatory tools to increase stakeholder participation in destination decision-making. It is proposed that destination marketing in the digital era has theoretical and managerial consequences.

#### 5.3.5 Selection of the most appropriate channels/media for segmentation and communication

Through the methodology of Social Network Analysis (SNA) David-Negre, T., Almedida-Santana, A., Hernández, J. M. and Moreno-Gil, S. (2018) analyze the European tourists' use of e-tourism platforms. The study is conducted in 19 European nations using a computer-aided web interview (CAWI). The findings reveal an e-tourism network of platforms that follows a core-periphery pattern. Facebook, Tripadvisor, Google, and Booking all play a significant influence. To better understand the e-tourism network, these 'main four' ego-networks are visually portrayed. The findings also demonstrate that various networks arise based on the use of e-tourism platforms in different countries. This research contributes to a new understanding of European tourists' behavior when using e-tourism platforms to plan their vacations. The findings are beneficial for firms and Destination Marketing Organizations (DMOs) to understand how e-tourism platforms are linked to create their segmentation and promotion strategy in the European market using e-tourism platforms. In another study, Almeida- Santana, A., Moreno- Gil, S. and Boza-Chirino, J. (2018) again use computer-assisted web interviewing (CAWI) to make a survey about cultural convergence and media convergence in 17 European countries. To segment the market, the methodology employs various correspondence analyses, factor analyses, and cluster analyses. Both phenomena (convergence and divergence)

are identified by culture (groups of countries), media (a collection of information sources), and content (motivations).



## CHAPTER 6

### CONCEPTUAL MODEL AND EMPIRICAL STUDY

The impact of Travel 2.0 technologies on international tourist arrivals are analyzed using various approaches. According to the literature review, common methods are text mining, artificial neural network, content analysis and semi-structured interviews, panel data multivariate regression analyses, computer-aided web interview, online surveys, and scenario-based experiments. Some rare methods such as the photo-elicitation technique and netnography (Kozinets, 2015) are also used.

To complement the related previous research, this study conducts multiple regression analysis to understand how international tourist arrivals by country of destination are impacted by various Travel 2.0 applications and their outcomes. The study analyzes the effects of four factors (DMO's monthly visits average to their websites, the number of reviews and opinions on tripadvisor.com, the number of listed properties on booking.com, and the number of listed tours on viator.com) on the international tourist arrivals by country of destination. The related model is presented in Figure 12.

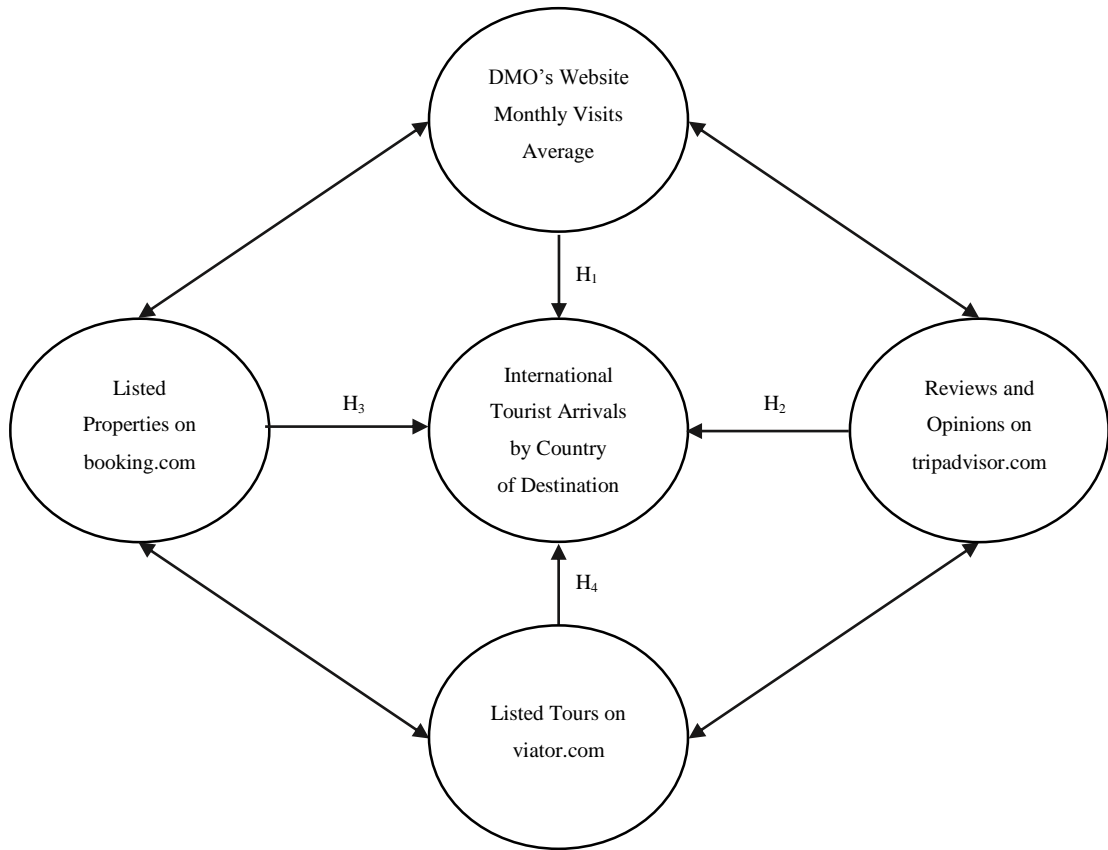


Figure 12. The conceptual model of the study

The hypotheses related to the model are presented below.

H<sub>1</sub>: There is a positive relationship between the international tourist arrivals by country of destination and the DMO's website monthly visits average.

H<sub>2</sub>: There is a positive relationship between the international tourist arrivals by country of destination and the number of reviews and opinions on tripadvisor.com.

H<sub>3</sub>: There is a positive relationship between the international tourist arrivals by country of destination and the number of listed properties on booking.com

H4: There is a positive relationship between the international tourist arrivals by country of destination and the number of listed tours on viator.com.

Multiple regression analysis is used to determine the relationship between a dependent variable (i.e., the desired outcome) and multiple independent variables. In research investigations, multiple regression can be utilized for a variety of purposes. Let  $Y$  be the  $n \times 1$  response vector,  $X$  be an  $n \times (q+1)$  matrix such that all entries of the first column are 1's, and  $q$  predictors. Let  $\epsilon$  be an  $n \times 1$  vector such that  $\epsilon_i \sim N(0, \sigma^2)$  are independent and identically distributed, and  $\beta$  be a  $(q+1) \times 1$  vector of fixed parameters. The model is shown in Figure 13.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon.$$

Figure 13. Multiple regression analysis formula

$Y$ : Dependent variable

$B_0$ : Model intercept

$B_1, B_2$ : Regression coefficients

$X_1, X_2$ : Independent variables

$\epsilon$ : Random error

For the purpose of this study, multiple regression model includes four independent variables:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where  $Y$  is the international tourist arrivals by country of destination,  $X_1$  is the average monthly visit to DMO's website,  $X_2$  is the number of reviews and opinions on tripadvisor.com,  $X_3$  is the number of listed properties on booking.com, and  $X_4$  is the number of listed tours on viator.com. The four hypotheses are tested to see if there is any statistically meaningful relationship between the dependent variable and the independent variables.

The conceptual model is developed to understand the relationship and the impact of various data produced as a result of using Travel 2.0 technologies on destinations' international tourist arrivals. To specify the input and output variables for the multiple regression analysis, the literature has been reviewed. Studies that analyze the relationship and influence of Travel 2.0 technologies on international tourist arrivals use different kinds of quantitative and qualitative input and output variables.

### 6.1 Input variables

Website traffic and engagement metrics are crucial for organizations to gain an overview of their websites' performance and its measurement. Although there are various business intelligence solutions, some common web metrics are globally accepted in evaluating the digital performance and market share of the company or organization. The most common web metrics are monthly visits, the number of unique visitors, page views, visit duration, pages per visit, pages per session, and bounce rate (Clifton, 2012). Among these web metrics, monthly visits indicate the average visits for the selected time period. In other words, the monthly visits metric reports the number of visits per month to a website and provides insight into the amount of total traffic, including desktop and mobile, that a website receives.

Additionally, DMO's website performance evaluation is becoming a crucial issue for efficient internet marketing and influencing potential visitors. For these reasons, average monthly visits to DMO's website between February and April 2022 (Desktop + Mobile Web) are considered among the inputs of multiple regression analysis used in this study. In line with this fact, 35 destinations' official DMO websites are determined. The websites' traffic and engagement metrics are obtained through similarweb.com.

Many customers trust each other more than they trust advertising and numerous studies reveal that current consumers have little faith in advertising (Kelly, Kerr, & Drennan, 2010). Modern travelers are more conscious of marketing strategies and are often skeptical. As a result, people study internet reviews and comments to learn about other travelers' experiences and to check out a service before purchasing it. They decide whether or not to stay at a hotel based on their research. Positive evaluations give visitors greater confidence, and they are more likely to return during the lifespan of their trip plans. Travelers use online reviews in their travel planning process even before making a purchasing choice. Above all, reviews aid in the growth of website traffic and revenue. Chong, Khong, Ma, McCabe, and Wang (2018) find out that electronic word of mouth (eWOM) has a significant impact on travel decisions. Additionally, travelers are willing to accept information from eWOM, and this knowledge proves to be valuable in their travel planning and judgments. Travel planning and decisions are found to be influenced by gender and time spent reading online reviews. Travelers comment on the reviews and complaints reported in eWOM as trustworthy and of high quality. Tripadvisor is the most popular and widely used website for gathering traveler reviews and opinions. Tripadvisor, which is launched in 2000, allows users to review hotels, resorts, bed

and breakfasts, short-term vacation rentals, holiday locations, and restaurants. Five years after the site surpassed 500 million reviews, on February 1, 2022, Tripadvisor reached one billion user reviews. The average length of an accommodation review on Tripadvisor is 688 characters, which is three times greater than the average length of reviews available on prominent online travel agent websites and search engines (Tripadvisor, 2022). Tripadvisor is an excellent and reputable source for reviews and opinions because of these statistics and a large amount of user-generated content. Based on these factors, reviews and opinions on [tripadvisor.com](https://www.tripadvisor.com) are considered among the input variables used in this study.

People are increasingly preferring to make reservations online. According to statistics, 90 percent of people conduct all of their holiday research online, while only 80 percent of people book their vacations online. Internet travel booking has firmly entered the twenty-first century, with an expected 817 billion U.S. dollars in online bookings by 2020. Given the tourist industry's estimated value of 1.2 trillion U.S. dollars, online reservations account for one of the greatest market shares in the business and are an essential component of travel websites (Statista, 2022).

Booking.com is a company of Booking Holdings and a Dutch online travel agency for accommodation reservations and other travel products. There are almost 28 million listings on the platform. The website is accessible in 43 different languages (booking.com, 2015) Booking.com has a massive collection of traveler reviews that customers, hoteliers, and researchers can access. For that reason, the number of listed properties on [booking.com](https://www.booking.com) is selected among the input variables of this study.

One of the key success factors of tourism industry is tour operators. Tourists rely on tour operators to make their vacation fantasies a reality. Booking a tour is a convenient way for a tourist to get a taste of a strange country while also ensuring

that they see the important sights. Tourism can help a high-demand area prosper economically. Tourist-friendly countries benefit from an influx of revenue from visitors who spend money on hotels, food, souvenirs, and activities. In 2019, the tourism industry contributed 2.892 billion U.S. dollars to the global GDP. With sales revenue of 99 billion U.S. dollars in 2018, online booking platforms and online travel corporations assist the economy significantly (Statista, Online travel market - statistics & facts, 2022). Overall, tours and activities play an important part in keeping money flowing around the world. Viator is a Tripadvisor company and the world's leading provider of experiences, with approximately 400,000 tours and activities available worldwide. It is the most visited travel website in terms of tours, things to do, sightseeing tours, day trips, and many more travel activities. Therefore, the number of listed tours on viator.com is selected among the inputs of the multiple regression analysis used in this study.

## 6.2 Output variable

In line with many previous researches, international tourist arrivals is identified as the output variable in this study. Su and Lin (2014) investigate the positive influence of world heritage sites on international tourist arrivals and depict a U-shaped association between the number of world heritage sites in a country and the number of tourists. Wong (1997) investigates the causal empiricism and international visitor arrivals relationship. Results show that international visitor arrivals may be subject to a cyclical tendency, with variance around the linear trend produced by interactions with other cyclical phenomena. To capture these two characteristics, Wong projects foreign tourist arrivals in Hong Kong using a simple model with a linear trend and sine function.

International tourist arrivals are traced regularly by UNWTO since 2000. A compilation of data on outbound tourism by country, including data on international tourism expenditure and outbound trips displayed are publicly available in UNWTO's Tourism Dashboard. It is the first global dashboard for tourism insights and the most reliable source to gain insights into the tourism industry (UNWTO, 2022). UNWTO's membership includes 159 countries, 6 Associate Members, two Permanent Observers, and over 500 Affiliate Members representing the private sector, educational institutions, tourism associations, and local tourism authorities.

### 6.3 Data

This study covers various data collected from six different sources and websites. The data collected for the analysis are publicly available data found on the United Nations World Tourism Organization (UNWTO), destination marketing organization's (DMO) website, similarweb.com, tripadvisor.com, booking.com, and viators.com. During the data selection, firstly, the top 35 leading destinations in terms of the international tourist arrivals by country of destination in 2019 are determined according to the UNWTO's World Tourism Barometer, issue 7.

The sample in this study consists of the top 35 destinations' international tourist arrival numbers in 2019, DMO's monthly visits average to their website between February and April 2022 in terms of all traffic (Desktop + Mobile Web), the number of reviews, and opinions on tripadvisor.com, the number of listed properties on booking.com, and the number of listed tours in viator.com. The selection of the time periods is intentionally different on the international tourist arrival and DMO's monthly visits average to their website in order to mitigate the coronavirus pandemic



effects on the sample data. All the sample data are compiled from the publicly available data on the Internet and the official websites on 24 May 2022.

All data required for the empirical analyses are publicly available and are collected online through annual reports, web pages of the companies, and their data. International tourist arrivals by country of destination is collected from UNWTO World Tourism Barometer, the seventh issue which was published in December 2020 as shown in the Appendix A (UNWTO, World Tourism Barometer, 2020). The international tourist arrivals from 2019 are considered in this study for several reasons. Firstly, it is the most recent data that is not affected by the coronavirus pandemic. The data from 2019 contains a similar trend that overlaps with 2017 and 2018 data as shown in Figure 14 which can be named statistically meaningful. Secondly, the international tourist arrival data for 2019 is a complete dataset compiled from different series of international tourist arrivals. Thirdly and lastly, it is the most updated international tourist arrival data that can be accessed free from the UNWTO.

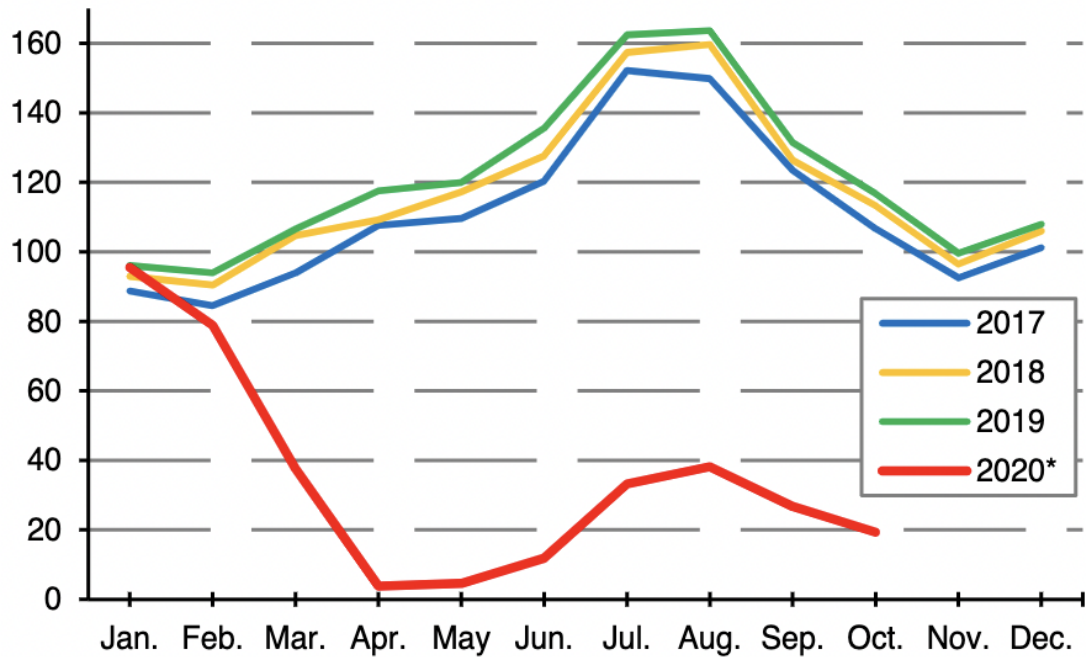


Figure 14. International tourist arrivals by month in the world (millions)  
Source: [UNWTO, March, 2022]

Destinations with at least 10 million international tourist arrivals are determined as the selection criteria for the sample. 35 countries that meet this criterion are included in the sample. Czech Republic, Ukraine, and Ireland's international tourist arrival data are not available in the UNWTO. Also, the data of Macao (China) is excluded from the sample due to their representation of data mostly counted in Mainland China on websites where data is collected for input variables. That's why these four countries are excluded from the sample data. Morocco, Taiwan, Switzerland, and South Africa are included in the sample instead of them.

According to these selected destinations, their official tourist websites, in other words, destination marketing organization's websites are identified. During the data collection process about the DMO's website, it is seen that the United Arab Emirates does not have a direct destination marketing organization website belonging to their Department of Economy and Tourism. Instead, the United Arab

Emirates Department of Economy and Tourism has created separate websites for all seven emirates. Dubai's website [www.visitdubai.com](http://www.visitdubai.com) is the most visited website among the seven websites. That's why it is considered as the destination marketing website of the United Arab Emirates during the data collection process. The monthly visits average between February and April 2022 for all types of devices including desktop and mobile web information of the selected DMO's websites are taken from Similarweb. The historical data period between February and April 2022 is selected intentionally to get the most up to date metrics of the DMO's website. Similarweb is a digital intelligence provider for enterprise and small to mid-sized business customers. The platform delivers online analytics services and provides customers with data on the web traffic and performance of their clients and competitors. Similarweb contains official measures and metrics of the websites (Similarweb, 2022).

With the same perspective, the number of reviews and opinions about the selected destinations is collected from Tripadvisor. Travelers use Tripadvisor to find great prices on lodgings, book experiences, reserve tables at wonderful restaurants, and discover fantastic locations nearby, thanks to more than 1 billion reviews and opinions from almost 8 million companies (Tripadvisor, About Tripadvisor, 2022). It is the most visited website in the travel and tourism industry categories according to Similarweb data. Tripadvisor has 148.1 million monthly visits in April 2022 (Similarweb, Top Websites Ranking for Other Travel and Tourism in the world , 2022) As can be seen from the data, Tripadvisor is the first stop for online travelers to write a review and share their opinions with other travelers.

According to the selected destinations, the number of listed properties is collected from booking.com. The listed properties type are apartments, guesthouses,

vacation homes, bed and breakfasts, hotels, lodges, villas, homestays, chalets, farm stays, resorts, country houses, luxury tents, hostels, campgrounds, resort villages, motels, boats, capsule hotels, and love hotels. The number of listed properties data wasn't accessed in Turkey and Russia during the data collection process. Based on a dispute with the Association of Turkish Travel Agents, a Turkish court ordered Booking.com to be blocked by all of the country's ISPs in March 2017. (TURSAB). TURSAB alleged in court that booking.com's hotel marketing initiatives constituted unfair competition. That's why there aren't any listed properties on booking.com available in Turkey. Additionally, booking.com suspended all operations in Russia and unlisted the properties on their platform due to the invasion of Russia on Ukraine which started on February 24, 2022. The data collection is made through booking.com. Because booking.com is the most visited website in the world in terms of accommodation and hotel subtopic of travel industry according to Similarweb data. Booking.com has 194.7 million monthly visits in April 2022 (Similarweb, Top Websites Ranking for Accommodation and Hotels in the world, 2022).

From the same standpoint, the number of listed tours about the selected destinations is collected from Viator. Viator contains lots of different types of tours such as; art & culture, classes and workshops, food and drink, outdoor activities, seasonal and special occasions, tickets and passes, tours, sightseeing and cruises, travel and transportation, and unique experiences (Viator, 2022). Unfortunately, the number of listed tour data is not reached in Russia during the data collection process. Viator has unlisted the tours on Russia on their platform and it is not reachable because of the invasion of Russia on Ukraine. The listed tour data is collected through Viator because it is the most visited website in the world in the touristic attraction category of the travel industry according to Similarweb data. Viator has

20.6 million monthly visits in April 2022 (Similarweb, Top Websites Ranking for Tourist Attractions in the world , 2022).

All data required for the empirical analyses are collected and checked on May 24, 2022, and the sample data for multiple regression analysis has been created as shown in Appendix B.

## CHAPTER 7

### EMPIRICAL RESULTS

In this study, the impact of Travel 2.0 technologies on international tourist arrivals is investigated. Based on the literature review, appropriate dependent and independent variables are specified to develop a conceptual model. Related hypotheses are generated and tested using multiple regression analysis.

In the empirical analysis, firstly, a correlation analysis is conducted to check multicollinearity among the independent variables. In a multiple regression model, multicollinearity occurs when there are high intercorrelations between two or more independent variables and can have a number of negative implications on estimated coefficients. Multicollinearity can lead to skewed or misleading conclusions when determining how effectively each independent variable can be used to predict or understand the dependent variable in a statistical model (Mansfield & Helms, 1982).

As shown in Table 4, the correlation coefficient is lower than the generally accepted .800 multicollinearity threshold between the independent variables (Tay, 2017). The highest correlation is between the number of reviews and opinions on tripadvisor.com and the number of listed properties on booking.com with the .759 coefficient which is still in the acceptable threshold level. The other correlation values between the independent variables are lower than the accepted threshold level. Results show that there is no direct relationship with a substantial degree of accuracy between the independent variables.

Table 4. Correlation Analysis of the Dependent and Independent Variables

		International Tourist Arrivals (million)	Av. Monthly Visits	Reviews and Opinions on Tripadvisor	Listed Properties on booking.com	Listed tours on Viator
Pearson Correlation	International Tourist Arrivals (million)	1.000	.217	.685	.772	.512
	Av. Monthly Visits	.217	1.000	.169	.279	.230
	Reviews and Opinions on Tripadvisor	.685	.169	1.000	.759	.608
	Listed Properties on booking.com	.772	.279	.759	1.000	.533
	Listed tours on Viator	.512	.230	.608	.533	1.000
Sig. (1- tailed)	International Tourist Arrivals (million)	.	.105	.000	.000	.001
	Av. Monthly Visits	.105	.	.165	.058	.103
	Reviews and Opinions on Tripadvisor	.000	.165	.	.000	.000
	Listed Properties on booking.com	.000	.058	.000	.	.0001
	Listed tours on Viator	.001	.103	.000	.001	.
N	International Tourist Arrivals (million)	35	35	35	33	32
	Av. Monthly Visits	35	35	35	33	32
	Reviews and Opinions on Tripadvisor	35	35	35	33	32

	Listed Properties on booking.com	33	33	33	33	31
	Listed tours on Viator	32	32	32	31	32

Secondly, the variance inflation factor (VIF) value is evaluated. VIF value reflects all other factors that influence the uncertainty in the coefficient estimates. A high VIF indicates that the linked independent variable has high collinearity with the other variables in the model. As seen in Table 5, the VIF value of the independent variables is lower than the 3 threshold which is an acceptable value (Hair, 2009). In other words, it can be said that the model does not have any multicollinearity issues and the regression analysis is reliable from the statistical perspective.

Table 5. Correlations<sup>a</sup> and Collinearity Statistics

	Correlations			Collinearity Statistics	
Model	Zero-order	Partial	Part	Tolerance	VIF
Av. Monthly Visits	.217	.006	.004	.902	1.109
Reviews and Opinions on Tripadvisor	.685	.184	.115	.361	2.770
Listed Properties on booking.com	.772	.511	.365	.396	2.524
Listed tours on Viator	.512	.109	.067	.607	1.647

a. Dependent Variable: International Tourist Arrivals by Country of Destination in 2019



Results of the regression analysis in Table 6 show that the independent variables have a significant relationship with the international tourist arrivals by country of destination with 56.5 percent. To put it another way, our analysis shows a strong level of impact of the most used Travel 2.0 technologies such as reviews and opinions, bookings systems, the touristic activity listings on international tourist arrivals.

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Multiple Regression	0.789 <sup>a</sup>	.623	.565	14342828.4

a. Predictors: (Constant), Monthly Visits Average to DMO's website between Feb - Apr 2022 (Desktop + Mobile Web), The number of listed properties on booking.com, The number of Reviews and Opinions on tripadvisor.com, The number of listed tours on viator.com

Furthermore, an analysis of variance (ANOVA) is conducted to understand the relationship between the dependent and independent variables. ANOVA is a collection of statistical models and associated estimation processes that are used to investigate differences in means. (Gelman, 2005). As shown in Table 7, the significant level is .000 which depicts a high level of statistical significance. According to the multiple regression analysis, it can be said that there exists a significant impact of at least one of the independent variables on the dependent variable.

Table 7. Table Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.850E+15	4	2.213E+15	10.7555	.000 <sup>b</sup>
Residual	5.349E+15	26	2.057E+14		
Total	1.420E+16	30			

- a. Predictors: (Constant), Monthly Visits Average to DMO's website between Feb - Apr 2022 (Desktop + Mobile Web), The number of listed properties on booking.com, The number of Reviews and Opinions on tripadvisor.com, The number of listed tours on viator.com
- b. Predictors: (Constant), Monthly Visits Average to DMO's website between Feb - Apr 2022 (Desktop + Mobile Web), The number of listed properties on booking.com, The number of Reviews and Opinions on tripadvisor.com, The number of listed tours on viator.com

Finally, the test of significance is conducted to accept or reject the hypotheses based on the sample data. A significance level of  $p > 0.05$  is generally considered not significant. Significance levels of  $p \leq 0.05$ ,  $p \leq 0.01$ ,  $p \leq 0.001$  are (5 percent) generally considered significant at 5 percent, 1 percent and 0.1 percent respectively.

The first hypothesis states that there is a positive influence between the international tourist arrivals by country of destination and the DMO's website monthly visits average. As shown in Table 8, there is no significant relationship between them, and the hypothesis is rejected.

The second hypothesis states that there is a positive influence between the international tourist arrivals by country of destination and the number of reviews and opinions on tripadvisor.com. As shown in Table 8, there is no significant relationship between them, and the hypothesis is rejected. But it can be said that the number of reviews and opinions on tripadvisor.com is more influential than DMO's website monthly visits average on the international tourist arrivals by country of destination.

The third hypothesis states that there is a positive influence between the international tourist arrivals by country of destination and the number of listed properties on booking.com. As shown in Table 8, the relationship is significant and the hypothesis is accepted.

The fourth hypothesis states that there is a positive influence between the international tourist arrivals by country of destination and the number of listed tours on viator.com. As shown in Table 8, the relationship is not significant, and the hypothesis is rejected. To sum it all up, H<sub>1</sub>, H<sub>2</sub>, and H<sub>4</sub> are rejected and only H<sub>3</sub> is accepted according to the multiple regression analysis.

Table 8. Unstandardized Coefficients and Standardized Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
Constant	17012797.0	4246536.86			.000
Av. Monthly Visits	.115	3.849	.004	.030	.976
Reviews and Opinions on Tripadvisor	.212	.221	.191	.956	.348
Listed Properties on booking.com	224.690	74.169	.579	3.029	.005
Listed tours on Viator	311.938	557.687	.086	.559	.581

The findings in the multiple regression analysis indicate that reviews and opinions, bookings systems, and the touristic activity listing have a 56.5 percent impact on international tourist arrivals. When we consider the other Travel 2.0

technologies, we can say that the selected independent variables can impact more than half of the number of international tourist arrivals which is a valuable outcome. Since the number of listed properties on booking.com has a direct and significant impact on the number of international tourist arrivals, DMO managers should prioritize listing their facilities on this platform. The number of reviews and opinions on tripadvisor.com has the second biggest influential effect on international tourist arrivals among the independent variables. Travel industry stakeholders and DMOs can invest in the platform by giving advertisements, placing banner advertisements, and sponsored content to become more visible to the potential tourists. Thus, they can increase the number of international tourist arrivals. Furthermore, outcomes show that tourists prefer to obtain necessary information about their upcoming travel from other internet sources and social media instead of visiting the official website of the destination. At this point, it can be interpreted as a wiser and less risky strategy to increase interest towards the destination by placing native ads on other blog sites and social media channels. Finally, the results imply that the number of listed tours on viator.com does not have any significant impact on the international tourist arrivals by country of destination. In this case, it can be said when tourists plan to visit a destination their priority is accommodation. Secondly, they are trying to get information from resources about the destination and try to benefit from other travelers' experiences, especially through reviews and opinions instead of websites belonging to the destination or the country's officials. Lastly, they are starting to consider the activities and things to do at the destination.

## CHAPTER 8

### CONCLUSION

In the last decade, the Internet has transformed how people plan their vacations and consume touristic products and services. Travelers want more meaningful travel experiences, as well as share their ideas and opinions about their vacations. Travel 2.0 technologies which refer to the entire set of Web 2.0 solutions designed expressly for the tourism and travel industry empower travelers to share their opinions and make them available to the worldwide Internet community. Hereby, travelers and their opinions influence other travelers' decisions. The aim of this study is to measure the impact of Travel 2.0 technologies on international tourist arrivals. The study conducts a multiple regression analysis to explain the international tourist arrivals by country of destination using four variables which are determined through a literature survey. These variables are the average monthly visit to DMO's website, the number of reviews and opinions on tripadvisor.com, the number of listed properties on booking.com, and the number of listed tours on viator.com. The related data is publicly available and is acquired from the UNWTO, Similarweb, Tripadvisor, booking.com, and Viator websites.

Results of the regression model indicate that the most used Travel 2.0 technologies which are reviews and opinions, bookings systems, and the touristic activity listing have a 56.5 percent impact on international tourist arrivals. In addition to this, there is a significant positive relationship between the international tourist arrivals by country of destination and the number of listed properties on booking.com. According to this finding, the higher and rich accommodation

opportunities can create a direct touristic interest, bookings towards the destination by tourists. Among the independent variables, the quantity of reviews and opinions on tripadvisor.com has the second largest impact on international tourist arrivals. To become more visible to potential visitors, travel industry stakeholders and DMOs can invest in the platform by offering ads, displaying banner advertisements, and sponsoring content. As a result, they will be able to boost the number of international visitors. Furthermore, the findings reveal that travelers prefer to get necessary information about their upcoming trip from other internet sources and social media platforms rather than visiting the destination's official website. At this point, placing native advertisements on other blog sites and social media platforms to increase interest in the destination can be seen as a wiser and less risky approach. Finally, the findings suggest that the quantity of trips featured on viator.com has no significant impact on international tourist arrivals by destination country. This finding may indicate that when visitors plan a trip to a destination, their priority is to find a place to stay. Second, they are attempting to obtain information about the destination from a variety of sources and to profit from the experiences of other visitors, particularly through reviews and comments, rather than through official destination or country websites. Finally, they start to think of the activities and stuff to do while they're there.

Results also underline that companies, organizations in the travel industry, and the national tourism organizations of the countries should invest in Travel 2.0 technologies and create strategic alliances with the technology providers to attract more tourists to the destinations. Travel agencies should adopt emerging technologies in their businesses to stay competitive in the market. They should also use well-known travel platforms such as Tripadvisor and booking.com effectively to

be more visible to the customers. National tourism organizations should think of innovative ways to adapt Travel 2.0 technologies to promote destinations and attract Generation Z. Also, these kinds of strategic alliances and activities can prepare organizations for the next chapter of the travel world which is Travel 3.0.

Despite the high data quality and reliability, the multiple regression analysis is conducted with some limitations. In order to mitigate the effects of the coronavirus on the tourism sector, the analysis is carried out with the latest updated international tourist arrivals by country of destination data that belongs to 2019. Also, the data belonging to a few countries on the websites are excluded and can't be accessed due to the political crises and problems in the world. In addition to these, social media data is not considered as one of the independent variables in the regression model because of the significant number of fake profiles and likes on social media accounts which would manipulate the data and would not reflect the real facts.

This research contributes to the travel and tourism industry by attempting to create a conceptual model linking Travel 2.0 technologies and the international tourist arrivals by country of destination. Future research might take into account further variables such as international tourism receipts and more up-to-date international tourist arrivals data to extend the research. Moreover, new independent variables can be investigated and added to the research to increase the level of relationship with international tourist arrivals by country of destination. Thus, new dimensions and perspectives can be added to the studies in this area.

## APPENDIX A

### INTERNATIONAL TOURIST ARRIVALS BY COUNTRY OF DESTINATION

#### UNWTO WORLD TOURISM BAROMETER, DECEMBER 2020

							Percentage change over same period of previous year			
Rank		(million)			Change (percent)		2020*			
'19 '18		2017	2018	2019*	18/17	19*/18	YTD	Q1	Q2	Q3
	World	1332	1407	1459	5,7	3,7	-71,9	-28,5	-94,6	-78,6
1 1	France	86,9	89,4	..	2,9	..				
2 2	Spain	81,9	82,8	83,5	1,1	0,8	-76,1	-25,6	-99,1	-79,0
3 3	United States	77,2	79,7	79,3	3,3	-0,6	-72,0	-18,3	-95,8	-91,6
4 4	China	60,7	62,9	65,7	3,6	4,5	-84,1	-68,4	-98,1	
5 5	Italy	58,3	61,6	64,5	5,7	4,8	-57,3	-34,4	-81,4	-48,9
6 6	Turkey	37,6	45,8	51,2	21,7	11,9	-72,3	-22,2	-97,9	-72,7
7 7	Mexico	39,3	41,3	45,0	5,1	9,0	-46,5	-6,7	-75,9	-57,5
8 10	Thailand	35,6	38,2	39,8	7,3	4,3	-79,4	-38,0	-100,0	-100,0
9 8	Germany	37,5	38,9	39,6	3,8	1,8	-63,0	-25,0	-91,6	-61,3
10 9	United Kingdom	39,5	38,7	39,4	-2,2	1,9	-60,5	-16,1	-96,2	
11 11	Japan	28,7	31,2	32,2	8,7	3,2	-85,1	-51,1	-99,9	-99,7
12 12	Austria	29,5	30,8	31,9	4,6	3,5	-46,2	-15,2	-88,9	-39,2
13 13	Greece	27,2	30,1	31,3	10,8	4,1	-77,2	-5,6	-95,3	-77,4
14 15	Malaysia	25,9	25,8	26,1	-0,4	1,0	-78,6	-36,8	-99,7	-99,3
15 17	Portugal	21,2	22,8	24,6	7,5	7,9	-73,8	-21,9	-98,2	-75,9
16 16	Russian Federation	24,4	24,6	24,4	0,7	-0,5	-14,8	-14,8		
17 14	Hong Kong (China)	27,9	29,3	23,8	4,9	-18,8	-93,7	-83,5	-99,6	-99,3
18 18	Canada	20,9	21,1	22,1	1,2	4,8	-84,7	-19,6	-98,3	-97,5
19 19	Poland	18,4	19,6	21,2	6,6	7,8	-16,1	-16,1		
20 20	Netherlands	17,9	18,8	20,1	4,8	7,2	-56,9	-23,4	-86,9	-47,9
21 21	Macao (China)	17,3	18,5	18,6	7,2	0,8	-86,6	-67,9	-99,5	-94,7
22 27	Vietnam	12,9	15,5	18,0	19,9	16,2	-73,8	-18,1	-98,6	-99,0
23 22	India	15,5	17,4	17,9	12,1	2,8	-53,5	-22,6	-100,0	
24 26	Saudi Arabia	16,1	15,5	17,5	-3,7	13,0	-73,7	-28,1	-98,2	-95,3
25 28	Korea (ROK)	13,3	15,3	17,5	15,1	14,0	-83,6	-46,9	-97,9	-95,7
26 24	Croatia	15,6	16,6	17,4	6,7	4,3	-67,4	-41,6	-86,4	-57,9
27 23	Hungary	15,8	17,2	16,9	8,7	-1,3	-59,1	-15,1	-100,0	-55,6
28 25	Utd Arab Emirates(2)	15,8	15,9	16,7	0,8	5,1	-64,8	-16,2	-100,0	-88,8
29 32	Indonesia	12,9	13,4	15,5	3,5	15,4	-72,3	-30,6	-87,9	-89,2
30 29	Singapore	13,9	14,7	15,1	5,5	3,0	-83,0	-43,3	-99,9	-99,5



31 30	Czech Republic	13,7	14,3	..	4,5	..	-67,9	-26,1	-95,7	-68,5
32 31	Ukraine	14,4	14,2	..	-1,5	..				
33 33	Denmark	12,4	12,7	13,3	2,6	4,2	-67,4	-22,5	-92,8	-65,6
34 36	Egypt	8,3	11,3	13,0	36,8	14,8	-69,5	-19,6	-99,8	
35 34	Morocco	11,3	12,3	12,9	8,3	5,2				
36 37	Taiwan (pr. of China)	10,7	11,1	11,9	3,0	7,2	-86,3	-57,0	-99,6	-98,1
37 35	Switzerland	11,1	11,7	11,8	5,2	0,9	-69,1	-26,4	-94,2	-69,8
38 38	Ireland	10,3	10,9	..	5,7	..	2,2			
39 39	South Africa	10,3	10,5	10,2	1,8	-2,3	-67,9	-10,2	-100,0	-100,0
40 41	Australia	8,8	9,2	9,5	4,9	2,4	-73,4	-28,5	-99,5	-99,5
41 43	Tunisia	7,1	8,3	9,4	17,7	13,6	-76,5	-17,1	-99,1	-86,0
42 42	Belgium	8,4	9,1	9,3	9,1	2,5	-64,7	-22,5	-94,6	
43 40	Bulgaria	8,9	9,3	9,3	4,4	0,4	-60,6	-10,5	-81,9	-64,6
44 45	Iran	4,9	7,3	9,1	49,9	24,4	-72,0	-92,4	-92,1	
45 46	Philippines	6,6	7,2	8,3	8,3	15,2	-80,6	-55,2	-82,9	-100,0
46 44	Sweden	7,1	7,4	..	5,5	..	-74,3	-25,5	-88,5	-81,8
47 48	Argentina	6,7	6,9	7,4	3,4	6,6	-62,0	-8,9	-100,0	-99,5
48 47	Kyrgyzstan	4,6	6,9	..	52,1	..				
49 55	Uzbekistan	2,7	5,3	6,7	98,7	26,2	-72,6	-12,0	-99,9	-92,7
50 51	Cambodia	5,6	6,2	6,6	10,7	6,6	-76,1	-38,5	-98,1	-95,6

## APPENDIX B

### MULTIPLE REGRESSION ANALYSIS SAMPLE DATA

Destination	DMO's Website	International Tourist Arrivals by Country of Destination in 2019 (millions)	Monthly Visits Average to DMO's website between Feb - Apr 2022 (Desktop + Mobile Web)	The number of Reviews and Opinions on tripadvisor.com	The number of listed properties on booking.com	The number of listed tours on viator.com
France	us.france.fr	89.4	69.002	30.089.123	164.346	5.961
Spain	spain.info	83.5	2.319.000	29.615.781	148.586	9.827
United states	visittheusa.com	79.3	339.089	98.951.419	156.797	19.099
China	travelchina.org.cn	65.7	11.157	5.345.957	11.537	11.551
Italy	italia.it	64.5	2.611.000	51.396.512	209.423	25.374
Turkey	goturkiye.com	51.2	1.416.000	5.421.290	N/A	6.811
Mexico	visitmexico.com	45.0	461.993	8.625.208	21.572	8.911
Thailand	tourismthailand.org	39.8	588.045	6.692.600	18.095	6.278
Germany	germany.travel	39.6	190.871	9.406.548	118.274	2.520
United Kingdom	visitbritain.com	39.4	654.060	48.863.141	93.709	4.887
Japan	japan.travel	39.2	844.667	7.085.417	26.443	4.124
Austria	austria.info	31.9	1.549.000	2.734.857	31.996	N/A
Greece	visitgreece.gr	31.3	218.156	8.503.841	64.078	7.945
Malaysia	malaysia.travel	26.1	38.301	1.954.215	12.806	3.029
Portugal	visitportugal.com	24.6	1.675.000	6.999.306	37.239	6.976
Russia	russia.travel	24.4	164.388	3.576.507	N/A	N/A
Hong Kong (China)	discoverhongkong.com	23.8	267.516	1.197.030	439	395
Canada	travel.destinationcanada.com	22.1	143.419	9.282.609	10.696	2.617
Poland	poland.travel	21.2	87.832	2.631.534	54.688	2.699
Netherlands	holland.com	20.1	1.060.000	4.410.172	15.819	1.677
Vietnam	vietnam.travel	18.0	279.437	3.678.069	12.635	9.257
India	incredibleindia.org	17.9	176.606	8.784.683	12.635	14.086
Saudi Arabia	visitsaudi.com	17.5	718.567	221.143	3.669	196
Korea (ROK)	visitkorea.or.kr	17.5	1.230.000	851.886	2.783	915
Croatia	croatia.hr	17.4	152.563	2.037.502	95.516	3.588
Hungary	visithungary.com	16.9	395.048	1.682.526	14.258	952
United Arab Emirates	visitdubai.com	16.7	2.306.000	3.024.502	6.115	4.607

Indonesia	indonesia.travel	15.5	533.657	4.963.461	22.234	8.649
Singapore	visitsingapore.com	15.1	673.566	1.534.323	446	636
Denmark	visitdenmark.com	13.3	270.065	1.273.867	8.824	298
Egypt	egypt.travel	13.0	60.787	2.001.652	6.003	17.142
Morocco	visitmorocco.com	12.9	406.041	2.107.060	9.679	N/A
Taiwan	eng.taiwan.net.tw	11.9	54.144	1.283.036	8.708	377
Switzerland	myswitzerland.com	11.8	1.528.000	2.464.980	14.125	1.362
South Africa	southafrica.net	10.2	272.093	2.845.252	20.495	3.307

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