

# **Artificial Intelligence – A perspective towards Tourism**

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## **Abstract**

*According to a UNWTO report, in 2011, “international tourism receipts exceeded US\$1 trillion for the first time” (UNWTO, 2012). UNWTO Secretary-General Taleb Rifai stated this excess of \$1 trillion was especially important news given the global economic crisis of 2008, as tourism could help rebuild still-struggling economies, because it is a key export and labour intensive (UNWTO, 2012). The paper majorly highlights the evolution of tourism and adaptive changes that has impacted the economy and how trends and patterns can be analyzed through proper statistical techniques, including Artificial Intelligence and Machine Learning. The framework outlined and the observations are based on some facts and data and the recent impact of COVID-19. Keywords: Sustainable Tourism, Machine Learning, Artificial Intelligence, Covid-19, GDP, Millennial. Statistical techniques.*

## **Introduction**

The word hospitality predates the use of the word tourism, and first appeared in the **14th century**. It is derived from the Latin hospes, which encompasses the words guest, host, and foreigner (Latdict, 2014). William Theobald suggests that the word tour comes from Greek and Latin words for circle and turn, and that tourism and tourist represent the activities of circling away from home, and then returning (Theobald, 1998)\*. It has been pointed out that the term “**Tourism**” was **means** leaving home for sometime for other places for mostly varied reasons can majorly be classified into 3 categories:

- a) Paryatana - It meant going out for pleasure and knowledge.
- b) Deshatana - Going out to other countries primarily for economic gains.
- c) Tirthatana – Going to places for religious importance.

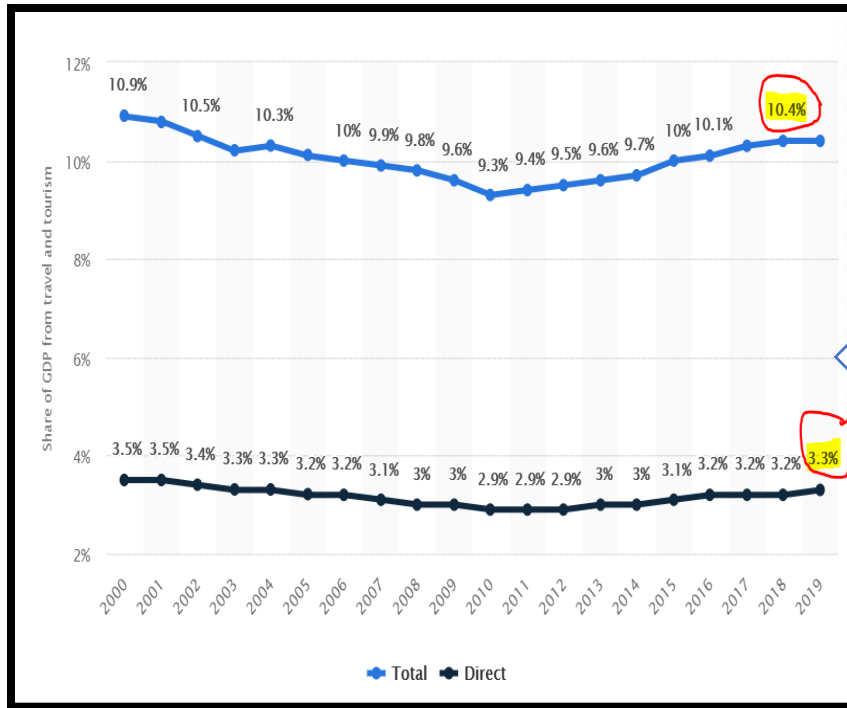
Gradually over the years the concept of tourism slowly evolved, and it was given a business flavor when companies tried innovative means to monetize tourism which essentially unearthed new places for travel leaving beyond the traditional ideas highlighted above. People slowly started getting inclined towards visiting places which got stitched to the economic developed and it gave rise to different marketing platforms and the price war between organizations to attract more customers. Interesting the more happening era is when we started getting information about Travel and tourism with the advancement of technology and the digital footprint supported by Artificial Intelligence and chatbots started answering our curiosity within seconds and giving us a teaser with marketing offers that started attracting our attention more towards the gadgets and apps. Globally, travel and tourism directly contributed approximately 2.9 trillion U.S. dollars to GDP in 2019. In the same year, the United States' travel and tourism industry directly contributed the highest amount to global GDP, with a total of 580.7 billion U.S. dollars.

#### **Tourism: Data, Statistics & Implications:-**

In order to understand how the economy has really been impacted by Tourism as a whole it is essential to understand the contributions factors [Direct & Total] & the driving or the influential factors to measure impact on GDP for sustainable development.

**Direct:** The direct contribution of travel and tourism to GDP reflects the 'internal' spending on travel and tourism (total spending within a country on travel and tourism by residents and non-residents for business and leisure purposes), as well as government 'individual' spending

**Total:** The total contribution of travel and tourism to GDP reflects GDP generated directly by the travel and tourism sector plus its indirect and induced impacts.

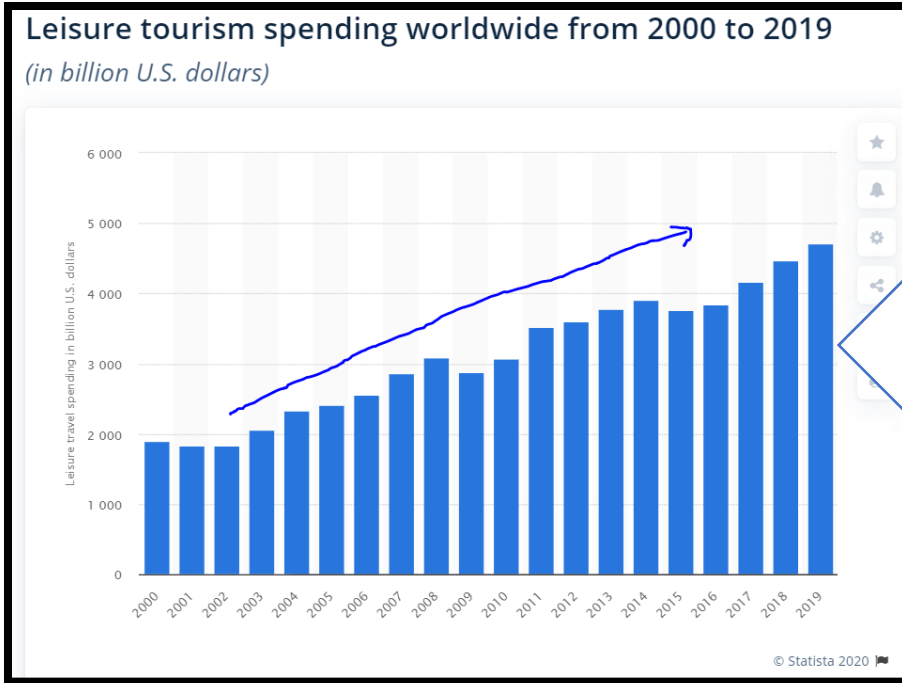


**Interpretation:** The direct contribution of the travel and tourism industry accounted for 3.3 percent of the total global GDP in 2019, showing a small rise over the previous year. Comparatively, the total contribution of the travel and tourism industry in 2019 accounted for 10.4 percent of the total GDP worldwide [Source: Published by S. Lock, Mar 2, 2020 ]

The major influential factors notable for the change in business context of tourism could be because of the following: -

- Attractions & Places of Interest are evolving rapidly
- Customized Tours [Personal /Family Preference] vis-a-vis Group Tours for major attractive places
- Travel Companies & Assistance for Elderly people
- Travel for Passion – Wildlife , Photography , Adventure , Historical, Sailing, Treks etc
- Business / Corporate Travel
- Millennials & Baby bommers – new generation with a predetermined mindset on Leisure holidays
- Channels – Mobile Apps / Internet
- Finance Options [ EMI / staggered payment ]

Among the above the statistics around leisure travel really shows an increasing trend and is very interesting to look at:-

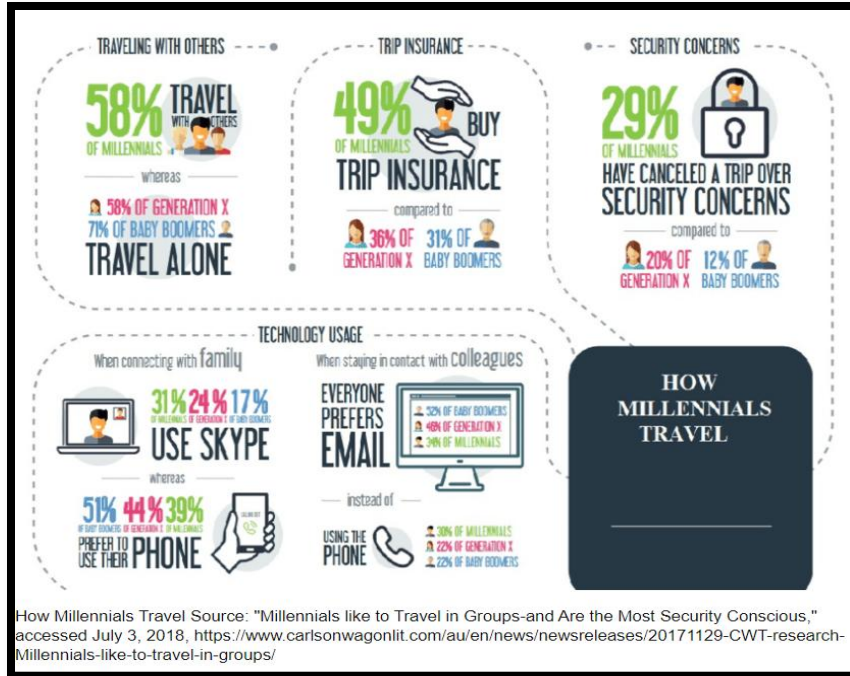


Leisure tourism is the largest sector of the tourism industry. Leisure travel generally consists of taking a vacation from work or everyday life. During vacation, the traveler typically aims to relax, experience new cultures and locations, broaden their mindset and more, depending on the type of travel chosen. Global leisure tourism spending reached 4,715 billion U.S. dollars in 2019

### **Forecasting the growth Market – AI Based Technology Adoption**

As we have understood so far that Travel and Tourism continues to expand and is a growing industry and since it has been attributed mostly by human behavior aided by technology it can be predicted to an extent based on historical data on Travel experience customer survey and external data sources. The clear insight coming out of a study is that the millennials & Baby boomers are a different generation altogether and their choice, preference and taste are very varied than the traditional people who used to have a conservative approach towards Travel in the earlier days.

The reason to bring this generation to the forefront of this discussion is that Millennials form a significant portion of the world's population today, and we are crucial in shaping the way things go. We are also a generation that cares more about experiences than material things. Everybody travels for different reasons and in different ways.



Through the lens of a statistician and merging economic factors is the key deciding factor before applying an algorithm and thus the following section is an attempt to highlight some of the essential elements to be considered that should be considered before deploying a Traditional Forecasting Model [ e.g ARIMA ] or a Next Gen Model [ Deep Learning Framework] for different uses cases [ subject to availability of data ]

- Propensity to Travel / Visit a destination
- Factors influencing to Visit a Destination [ majorly the features that attribute to the model]
- Factors used for sustainability
- Potential Revenue Forecast for Travels in a destination
- Investment in Tourism for a sector
- Global International Vs Travel Spend

Past Trends show that travelers are making decisions motivated by expectations of experiencing value tourism, in which a destination will seek the responsibility to maintain their environmental resources. Based on the data captured a statistical framework can be defined through primary / secondary data to understand the initial descriptive statistics of the attributes following up with some exploratory analysis to reveal some trends / patterns / seasonality and cyclical fluctuation

of data. It is also essential to consider the concepts of auto correlation or multicollinearity of the data that might affect the final stability or accuracy of the model and outcome.

### **Culture and Nature of Tourism – Viewpoint**

Bramwell and Lane (1993) outlined four basic principles of sustainable ecotourism development in line with the sustainable development concept:

(i) holistic planning and strategy making(ii) preservation of essential ecological processes(iii) protection of both human heritage and biodiversity and (iv) development to ensure that productivity can be sustained over the long term for future generations

The Tourism industry is one of the fastest-growing sectors and a significant contributor to the economy. However, this comes with its own implications on the environment and local culture. An increasing number of international and domestic travelers results in increased greenhouse gas emissions, generates more single-use plastic, and leads to disconcerting issues like mass tourism and increased waste production.

The negative implications can just go on. So, what can we do? Stop travelling?

Some of the measures that can be taken as a responsible traveler is to be conscious of the impact one is making & develop sustainable tourism practice. Sustainable Tourism is to help preserve the natural and cultural heritage, empower local communities, tackle environmental concerns, combat climate change and foster peace and intercultural understanding. An emerging trend among Millennials is slow travelling. Slow travelling means that you don't spread yourself too thin & going to fewer places and spending more time in each location. The following can be considered as some of the criteria for the Responsible Traveler: -

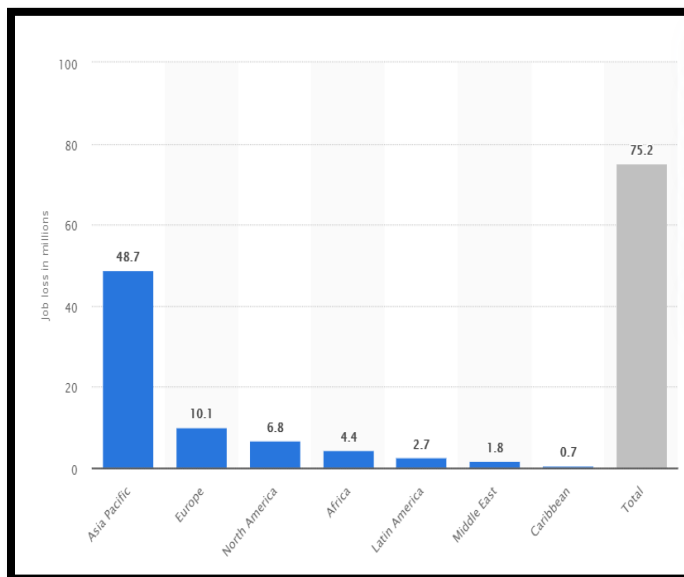
- Choose your souvenirs and purchases carefully
- Purchase a local craft
- Volunteer and Travel [ stay with communities, or on farms, sign up with a local NGO]
- Give back to the community / society
- Refrain from using plastic and generating unnecessary /biodegradable waste
- Eco- Tourism 😊 if you are interested

Tourism is seen as an agent for rural economic regeneration and as a way of valorizing conservation, in many parts of the world. But rural environment is a very fragile one because it changes or experiences damages easily due to rapid changes of any sort; and tourism is a powerful agent for change. This is an important issue because of the role rural areas play in many countries as repositories of both natural and historical heritage and important commercially.

### **The challenge Ahead of us – Covid -19 Impact**

While the “New Normal” market reality is emerging, real clarity will take some time – an adjustment factor is required to be plugged in based on the situations we foresee now.

- New Regulations & limitations wrt Travel [ Clean Zones, Physical distancing, health screening]
- Government Interventions: - Direct Capital support, changes in Tax Structure, relaxing or strengthening of current / new constraints
- Changing customer preference /concerns: Physical Contact, Fear of Travel, Touchless requirements, public safety, Sanitized Hotels and public areas
- Business Travel to be replaced by Video conference / digital meetings.
- Continuous Volatility: Common Myths , False alerts , Flashbacks of outbreaks are going to add to the challenge
- Layoffs & Job Loss in the Travel & Tourism industry



As a result of the coronavirus (COVID-19) pandemic, the global travel and tourism market is predicted to see a loss of 75.2 million jobs worldwide in 2020. The region that is supposed to see the biggest loss from COVID-19 is the Asia Pacific region, losing approximately 48.7 million jobs, while Europe is forecast to be the second hardest hit with a forecasted employment drop of 10.1 million

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### **Recovery and the “New Normal”**

Buy Time:-

From the data and statistics it is evident by now that the recovery is going to take time – While the domestic might take time [ ~ 9-18 months ] but international may take more than couple of years

Build Options & Multiple scenarios:-

As new evidences and reality emerges we need to adapt to the changes and have several options in hand so as to mitigate the risk as well as slowly getting back to normal hence trying to boost the economy slowly and steadily. Any further set back may bring us back to square one which is an even worse scenario.

Market consolidation-

Idea is to make a smart move and be agile and provide fair priced travel options as competitors in each market would decline and there will be possible chances of mergers and take overs. Focus should also be on value driven Innovation through automation and AI Powered intelligence

### **Conclusion**

Understanding consumer decision-making is a cornerstone of marketing strategy & this is where the Tourism industry is headed today. A critical examination of the above facts and diagnosis can bring out several complex scenarios related to sustainable tourism and this raises the question of adopting technology aspect into this eco system which could lead to better decision making and overcoming some of the challenges in a more efficient manner.

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