VOLUME IX | Issue 2 | 2021 | CINTURS

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Editor-in-Chief: Patrícia Pinto

Journal of Spatial and Organizational Dynamics

Sustainability in Tourism in the Context of Covid-19: From Policy to Practice

TECHNICAL INFORMATION

Volume IX, Issue 2, 2021

JOURNAL OF SPATIAL AND ORGANIZATIONAL DYNAMICS

Sustainability in Tourism in the Context of Covid-19: From Policy to Practice

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Publisher:
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Open Access Policy:
This is a blind peer-reviewed journal.
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The JSOD is diffused by all links related to the Research Center for Tourism, Sustainability and Well-being and is continually online (https://www.jsod-cieo.net/journal/index.php/jsod)
This journal is supported by the Portuguese Foundation for Science and Technology (FCT).

Indexation:
RePec-Ideas
Directory of Open Access Journals
Emerging Sources Citation Index (ESCI) - Thomson Reuters
Latindex
Academia.edu
Google Scholar

Networking and Indexing: Silvia Fernandes
Editorial Assistant: Marlene Fernandes
Design and Cover Concept: Bloco D, Design e Comunicação

Quarterly Edition
ISSN: 2183-1912
CINTURS, Faro, Portugal

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SPATIAL STRUCTURE AND CLIMATIC ASSOCIATIONS WITH COVID-19 CASES ACROSS THE GLOBE

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ABSTRACT

The study examined the spatial structure and the association between COVID-19 cases and selected climatic variables. Data on cases, deaths, recovery were obtained from the COVID-19 Resources website of the Environmental Systems Research Institute (ESRI). The climatic variables were selected included Land Surface Temperature (LST) and Water Vapour (WV) and collated from the NASA Earth Observations (NEO). Spatial and inferential statistics were used to examine spatial autocorrelation and associations with these variables. Results show that China, Italy, and Iran have the largest number of confirmed cases, the highest recovery (81%) was recorded in China. Confirmed cases have 7 clusters and 2 outlier locations. There are 21 and 17 spatial outliers for recoveries and deaths respectively. There are 2 natural clusters of the incidences and 98.7% of the locations belong to one of the groups. A weak but statistically significant ($P<0.05$) associations were observed for the incidence and the climatic variables. The analysis of spatial structure revealed more insight into the distribution of the disease, shedding more light on areas with needs for more investigation (outlier locations) and providing opportunities for mitigating spread and re-emergence.

Keywords: COVID-19, Spatial Clustering, Pandemic, Spatial Autocorrelation, Climatic Variables.

JEL Classification: I18

1. INTRODUCTION

The seasonal cycle and its ubiquitous association with infectious diseases have been well researched (Dowell, 2001; Pascual & Dobson, 2005; Buckee et al., 2017), and from measles, diphtheria and chickenpox of childhood origin to vector-borne diseases including malaria (Martinez, 2018). And the effects of this seasonality may vary according to geographic locations, thus when adequate measures are not adopted to prevent and curtail the spread of seasonal infections, such diseases can turn to an epidemic and sometimes a pandemic thus, making it pertinent that the current novel Corona Virus of 2019 (COVID-19) pandemic be understood from the dimension of its relationship with climatic and the spatial structure inherent in its cases. This would provide a basis for identifying potential climate influence and identification of spatial clusters across the world to inform the development of initiatives to further curtail the spread and future recurrence. To this end, this study examined the spatial structure formed by the incidence of COVID-19 at the global and local scales and examined the relationship between the attributes of the incidence and selected climatic variables.

Devastating pandemics have existed since 541 A.D when the world experienced the bubonic plague that wiped out 25-50 million people in one year (Morony, 2007). It was

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one of the worst outbreaks the world experienced, and it lasted for another 225 years, sweeping throughout the Mediterranean world until 750CE. According to Cohn (2002) between 1347 and1351, the Black Plague killed more than 75 million people in the Middle Eastern lands of China, India, as well as Europe. Furthermore, the author reported that the Spanish Flu pandemic, caused by an H1N1 virus with genes of avian origin, killed over 50 million people in one year in 1918. In America, 675,000 deaths were recorded; 2,000,000 in Sub-saharan Africa, and 500,000 in Nigeria, out of a population of 18 million in less than 6 months (Ohadike, 1991). The 20th century experienced the smallpox pandemic which claimed 300-500 million lives and is presently the only human disease that has been eradicated, according to the World Health Organization (World Health Organization, 1980; Voigt et al., 2016). In recent times, the global pandemic of Tuberculosis (TB) continues to kill over 1.5 million people annually and approximately 1 death in every 21 seconds (TB Alliance, 2020) and despite the availability of effective treatment, the emergence of multi-drug resistance (MDR-TB) is thwarting any effort of slowing the number of deaths or complete eradication (Di Gennaro et al., 2017) and there are fears on how the Coronavirus (COVID-19) pandemic that is sweeping the world right now will increase the death toll amongst TB and Human Immuno-Deficiency Virus (HIV) patients with already underlying medical conditions coupled with low immune systems (Liu et al., 2020; Pai, 2020). From the foregoing, it is evident that influenza viruses have been with humanity longer than we have anticipated, with so much ability to mutate into varying forms in no time, thus producing new strains (Smith et al., 1951; Ohadike, 1991; Pauly et al., 2017). The World Health Organization (WHO) in 1999 made available its first influenza preparedness plan that consisted of 6 outlined phases, which served as a blueprint for countries to draw up their national strategies (Iskander et al., 2013). WHO in 2009 developed a revised version of the phases to differentiate appropriate preparedness and response to enable countries effectively handle the high mutation rate of viruses especially with its ability to move from animals to humans (World Health Organization, 2009). As at present, WHO has recorded 4 types of influenza viruses namely: A, B, C and D while A and B cause most of the seasonal epidemics (World Health Organization, 2018).

The seasonality of infectious disease has puzzled epidemiologists since the 18th century. Although it is worth noting at this time that seasonality alone may, in certain cases, not be completely responsible for all epidemics, as other factors such as the immunity of the host, the susceptibility of the environment, or simply a combination of both can play a role. For example, the seasonal transmission of measles has been seen to occur every two to five years rather than annually (Kesson, 2011). This is why great insight into spatiotemporal patterns can help clarifying many issues around the transmission of such ailments (Coletti et al., 2018). Several works have examined spatial structure across a wide range of topics e.g. Kim et al. (2003) - air quality and house prices; Grineski and Collins (2010) - environmental inequality/injustice; Longley and Tobón (2004) - urban deprivation; Ceccato and Uittenbogaard (2014) - crime pattern; Yu et al. (2007) - house prices; Zou (2014) - higher-priced mortgages; Fan and Myint (2014) - landscape fragmentation; (Lawal, 2015) - age dependencies, Lawal (2017) - dependency and socio-economic factors. Similarly, many studies have explored the spatial pattern of diseases and its association with climatic variables, which have helped in understanding disease patterns and their dynamics (Wu et al., 2016; Wangdi & Clements, 2017; Anwar et al., 2019). The understanding of infectious diseases, spatial dynamics and seasonality can improve preparedness and response plan thus mitigating its burden worldwide, especially with the event of the COVID-19 pandemic. The study, therefore, aims to explore the spatial pattern of the disease and its association with selected satellite-derived climatic variables.

Infectious disease outbreaks such as the Avian Human Influenza (AHI), Influenza A (H1N1), Severe Acute Respiratory Syndrome (SARS), Ebola, and now the novel Coronavirus (2019-nCoV) poses serious physical and economic losses for our world (Sands et al., 2016; Fan et al., 2017) and understanding the role seasonality play could support complete control, thus strengthening our ability to predict its occurrence in the future (Dowell & Ho, 2004; Fares, 2013). Some epidemics could reflect seasonal variations and understanding of tropical areas in terms of cold air or low humidity may contribute to knowledge on reoccurrences. The novel Coronavirus disease, designated as COVID-19 by the World Health Organization in February 2020 (World Health Organization, 2020a) has become a pandemic with continued rapid spread since December 2019 when it was first detected in Wuhan, China (The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team, 2020), with 439,940 confirmed cases, 19,744 deaths and 111,942 recoveries as at 25 March 2020 (3:25 PM) (Worldometer, 2020). The World Health Organization first declared COVID-19 as a public health emergency of international concern and now a pandemic as it has been found in almost all regions of the world (World Health Organization, 2020c). The virus, at its first discovery, was in patients exhibiting illness caused by pneumonia (Chen et al., 2020). The clinical features have ranged from mild to severe respiratory illnesses; which may include fever, dry cough, fatigue and difficulty in breathing, and spreads during close contacts with respiratory droplets when people sneeze or cough (World Health Organization, 2020b). There are no vaccines now and recommendations have been solely on preventive measures such as hand washing, social distancing, covering of mouth when coughing and self-isolation (Centre for Disease Control, 2020).

Not all viruses have a biological constant for pathogenic spread, as some may be environmentally and behaviorally escalated, as we have seen in COVID-19 and such environmental factors such as climate and seasonality may modulate transmissibility as have been observed in several studies (Grassly & Fraser, 2006; Coletti et al., 2018; Martinez, 2018).

Lowen and Steel (2014) in their study using the guinea pig as a model host observed that aerosol spread of the influenza virus is dependent upon both ambient relative humidity and temperature. A highly efficient transmission was observed at 5°C and slowed reasonably at 30°C. The dry conditions (20% and 35% RH) showed more transmission than humid (80% RH) conditions. Also, the authors of a study on environmental predictors of seasonal influenza epidemics across temperate and tropical climates simply observed that Human influenza infections exhibit a strong seasonal cycle in temperate regions (Tamerius et al., 2013). Based on information from modelling epidemiological and climatic information from 78 study sites, they concluded that seasonal influenza thrives on the: "cold-dry" and "humid-rainy" periods. Lowen and Steel (2014) in their study observed that the relative humidity and temperature simply increase the transmission of the respiratory droplets.

Analyses of spatial patterns and distribution of human activities and natural phenomena are often leveraged for the creation regions of across an area of interest. Thus, guiding activities and measures to address issues within the area. Spatial clustering is fundamentally based on our understanding of spatial autocorrelation. Just as economic, social, cultural and political attributes and activities clusters so also is disease occurrence. Observation in space often suffers from spatial autocorrelation - the exhibition of correlation between the values of a variable attributable to their location. This thus nullifies the independent observation assumption, of conventional statistics as alluded to by Tobler's First Law of Geography (Griffith, 1987). Human activities and habitation are directly impacted by location. This interrelationship and dependencies often lead to the increasing agglomeration of businesses, industries, and infections/diseases at specific locations (e.g., established urban centres). Similarly, there is a tendency for the segregation of people with a similar culture, tradition,

behaviour, social class, etc. across different regions and locations. Spatial clustering affects economic activity, thus leading to spatial unities and differences.

The study of the spatial structure formed by diseases could provide an understanding of the potential impact of location and its emergence, spread, and reoccurrence, thereby contributing to informed decision-making for planning and management. Also, regionalisation using multivariate clustering methods could provide new insights into the interaction among location, demographic, and socio-economic factors.

2. DATA AND METHODS

2.1 Data

Data about the cases, deaths, recovery were sourced from the COVID-19 Resources website of Environmental Systems Research Institute (ESRI) - https://coronavirus-resources.esri.com. The version of the dataset used was last updated on the 13th of March 2020. This dataset is point vector data. Two climatic variables were selected to represent temperature and rainfall. Monthly Land Surface Temperature (LST) for day (LSTD) and night (LSTN), as well as the monthly Water Vapour (WV), were collated from the NASA Earth Observations (NEO) website - https://neo.sci.gsfc.nasa.gov/ for December (2019), January (2020), February (2020). These datasets were downloaded in GEOTIFF floating raster format at a resolution of 0.1 degrees.

2.2 Methods

Confirmed, recovery and death incidence were all subjected to exploratory spatial data analysis. This was carried out to understand the spatial structure within the dataset. Moran's I statistic and Local Indicator of Spatial Association (LISA) or Cluster and Outlier Analysis were computed to analyze the existence of global spatial autocorrelation (Moran's I) and determine the presence of local spatial clusters around locations, thus allowing for inferences on the stationarity of global spatial autocorrelation. This was carried out within ArcGIS (ESRI, 2020).

Examination of the relationship between climatic variables selected (LSTN, LSTD, and WV) and the attributes of the diseases was preceded by the extraction of values from the raster data to the point data with a GIS environment. A correlation analysis (Spearman Rank Correlation) was carried out to examine the linear relationship between climatic variables selected and the attributes of the diseases (confirmed, deaths, recovered), with SPSS version 23 (IBM, 2015).

A two-step cluster analysis (IBM, 2016) was carried out to examine natural groupings from the combination of the confirmed, recovery, and death cases from infection by COVID-19. This method was executed by carrying out a pre-clustering procedure to build a data structure (Cluster feature tree) with nodes (branch) and leaf entry (sub-clusters); for these, the log-likelihood measure of distance was used. This process was followed by the resolution of atypical values (outliers) while the final clustering was carried using the initial pre-clustering sub-clusters excluding the outliers (noise) via a hierarchical clustering method. The optimal number of clusters was determined automatically using Schwarz's Bayesian information criterion (BIC), essentially the number of clusters with the highest ratio of distance measure - this is based on the current number of clusters as against the previous number of clusters.

3. RESULTS AND DISCUSSION

3.1 Comparison of Aggregated Country-Level Data

The aggregation of the cases across countries showed that China, Italy, and Iran have the largest number of confirmed cases (Table 1) based on the data collated. The top 10 countries for confirmed cases were also all in the Northern hemisphere. As the confirmed cases vary so also does the rate of recovery, with a higher proportion (81%) in China and the worst recovery within the period under investigation in Norway (0.1%). Andorra, Jordan, and Nepal recorded 100% recovered, this is because they all have one confirmed patient who has recovered. Among the top 10 countries, the death rate was highest in Italy (7.2%) followed by Iran and China at 4.5% and 3.9% respectively. Guyana and Sudan have the highest death rate, this could be attributed to them having only one confirmed case resulting in death.

Table 1. Aggregated Distribution of COVID-19 Cases for the Top 10 Countries with Confirmed Cases

Country	Confirmed	Recovered	Deaths
China	80,973	65,634	3,193
Italy	17,660	1,439	1,266
Iran	11,364	2,959	514
Korea, South	8,086	510	72
Spain	5,232	193	133
Germany	3,675	46	8
France	3,667	12	79
US	2,174	12	47
Switzerland	1,139	4	11
Norway	996	1	1

Source: COVID-19 Resources Website of Environmental Systems Research Institute (ESRI)

Kruskal-Wallis test was conducted testing the hypothesis that the distribution of the cases (confirmed, recovered, and deaths) is the same across the countries. The result (Table 2) showed a statistically significant difference across countries, and what this means is that all the case attributes are not the same across the country i.e. the count of confirmed, recovered and death cases across the countries are significantly different ($p<0.05$).

Table 2. Kruskal-Wallis Test Result for the Comparison of Case Distribution

Statistics	Cases		
	Confirmed	Recovered	Death
Test Statistics	175.204	207.401	170.711
Asymptotic Sig. (2-sided test)	0.018	0.000	0.031*

Degree of freedom = 138

Source: Own Elaboration

The confirmed, recovery, and death cases differ significantly from one country to another, this could be attributed to various factors, from demographics of the infected people to population density as well as the response actions taken by the countries. Such differences will lead to different outcomes.

3.2 Spatial Autocorrelation Across Incidence Locations

Testing for the spatial autocorrelation, the Global Moran's I observed is 0.002 (Expected index of -004) with a Z-score of 0.49 (p = 0.620), indicating that the pattern of the distribution of confirmed cases is not significantly different than random. This indicated that the distribution of the confirmed cases across the world appears to be random.

For the recovery, the Moran's I index value of 0.0098 was recorded (Expected value = -0.004) with a Z-score of 4.009 (p = 0.000). Thus, indicating that this is a less than 1% likelihood that this clustered pattern could be the result of random chance. The recovery count is not random, indicating spatial autocorrelation in the recovery rate.

The number of death was also tested for spatial autocorrelation, and the result shows as indicated by the observed Moran's I (-0.01) compared to the Expected value (-0.004) that this is not different from random with a Z-score of -0.401; the pattern does not appear to be statistically significantly different from random.

The Local spatial autocorrelation test was carried to identify local clusters and outliers for the COVID-19 incidences. The inverse distance conceptualisation of spatial relationship was adopted using Euclidean distance and 4,475km was identified as the default neighbourhood search distance threshold. The result for confirmed cases shows that there are 9 locations of statistical importance concerning confirmed cases (Table 3) - 7 clusters (High-High and Low-Low Clusters) while there are 2 outlier locations (Low-High).

Table 3. Cluster and Outlier Locations for Confirmed Cases of COVID-19

OBJECTID	Country	Province/State	Confirmed	Cluster Type
235	US	Ohio	13	LL
236	US	Minnesota	14	LL
237	US	New Jersey	29	LL
238	Venezuela		2	LL
44	China	Chongqing	576	LH
110	Holy See	Vatican	1	LH
51	China	Henan	1273	HH
53	China	Jiangxi	935	HH
71	China	Hunan	1018	HH

LL-Low-Low, HH – High-High, LH – Low-High

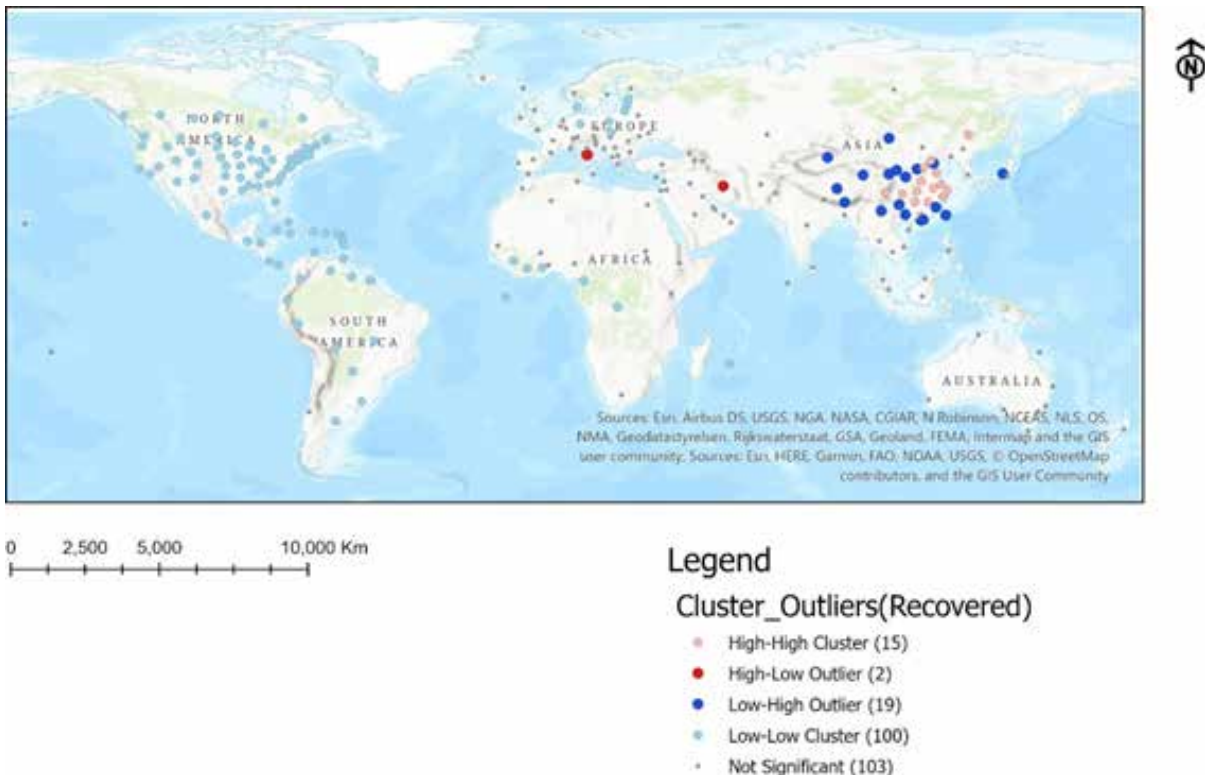
Source: Own Elaboration

The cases High-High clusters were all found in China (Table 3) – Hunan, Jiangxi, and Henan. One of the outliers (Low value surrounded by high values) was found in China (Chongqing) and the other in Rome (See of Rome), these represent usually a low number of confirmed cases amid of a high number of confirmed cases. Four locations were found to belong to a statistically significant Low-Low cluster, with 3 in the USA and 1 in South America (Venezuela). All the other locations were not found to be statistically significant. Despite global analysis showing no spatial autocorrelation, the local analysis revealed there are local patterns of spatial autocorrelation for confirmed cases.

For the cases where recoveries have been recorded, the results of the local spatial autocorrelation are presented in Figure 1. There are 100 locations identified as Low-Low clusters. These locations spread across (a) North and South America; (b) Northern Europe; and (c) West Africa. The High-High cluster is made up of 15 locations across China (Shandong,

Chongqing, Jiangsu, Heilongjiang, Hubei, Henan, Shanghai, Jiangxi, Guangdong, Beijing, Anhui, Sichuan, Zhejiang, Hunan, and Hebei).

Figure 1. Distribution of Cluster and Outlier Locations for COVID-19 Recovery Cases

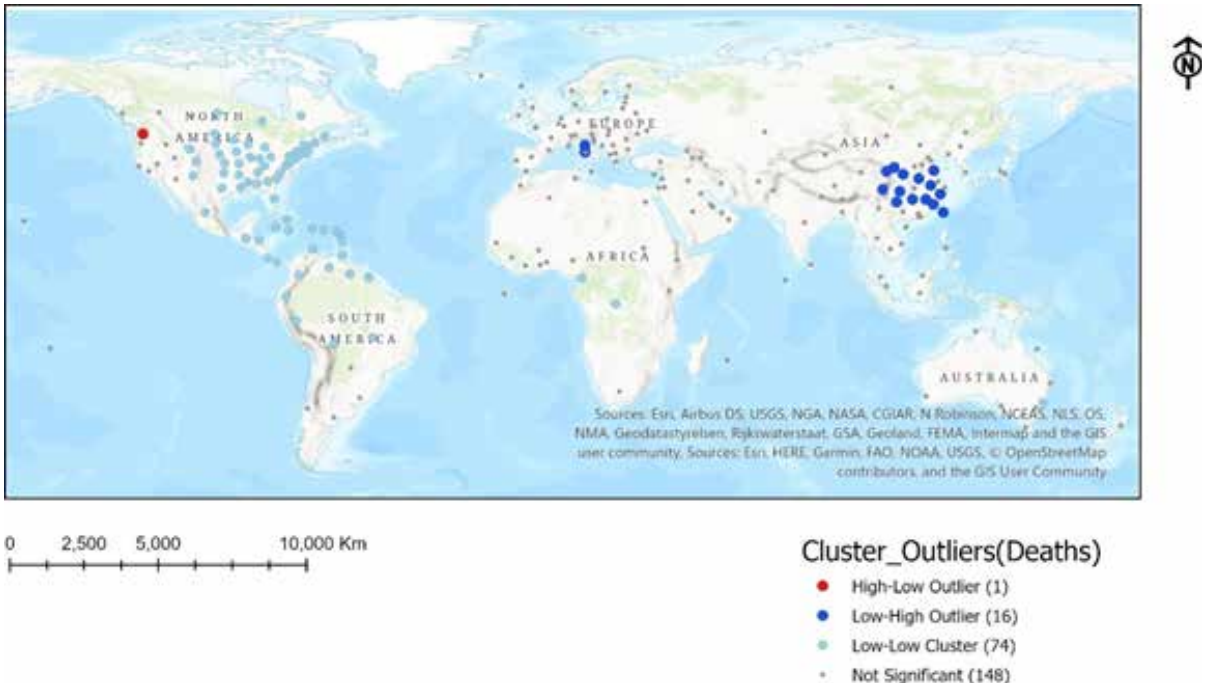


Source: Own Elaboration

Two locations (Iran and Italy) were identified as High-Low outlier i.e. those locations have unusually high recovery counts amid low recovery counts. Nineteen (19) locations displayed attributes of Low-High outlier, spread across Mostly across China and other places such as Bhutan, Holy Sea, Japan, Mongolia, and Taiwan. Evidently, most of these outliers are also located within China.

Analysis of local spatial autocorrelation for deaths shows that there is only one cluster type (Figure 2). The Low-Low clusters could be found across countries in North and South America, and Central Africa. The only High-Low outlier was found in Washington State on the east coast of the USA. All the Low-High outliers were located across China, Taiwan, and Italy (Holy See). Generally, most of the locations did not show any indication of spatial autocorrelation.

Figure 2. Distribution of Cluster and Outlier Locations for COVID-19 Death Cases



Source: Own Elaboration

3.3 Relationship between Climatic Variable Proxies and COVID-19 Cases

The correlation analysis results (Table 4) shows that monthly average water vapour content in the atmosphere - WV19_12, WV20_01 and WV20_02 (December 2019, January and February 2020, respectively) have a statistically significant ($P<0.05$) negative relationship with confirmed and recovery cases. However, the relationships were all found to be weak with R-square ranging between 0.043 and 0.054 for confirmed cases and between 0.021 and 0.029 for recovery cases, clearly indicating that a very small percentage of the variation in the confirmed and recovery cases can be explained by the average amount of water vapour across the three months. There was no statistically significant relationship between the death cases and the water vapour content of the atmosphere for the three months.

Confirmed counts were found to be negatively related to the Land surface temperature for the night in December 2019 (LSTN_1912) and January 2020 (LSTN_2001). The relationship identified was statistically significant albeit being very weak (Rho ranges between - 0.152 and -0.142). This indicated that the nighttime surface temperatures have very little explanatory power for predicting confirmed case of COVID-19. Death and recovery cases show no statistically significant relationship with the nighttime surface temperatures across the months.

The daytime land surface temperatures were also compared with death and recovery cases, and the result indicated no statistically significant relationship. There is a weak but negative correlation between these case attributes and the surface temperatures (LSTD_1912 - December 2019, LSTD _2001 - January and LSTD_2002 - February 2020). The Rho values indicated a very weak explanatory power with R-Square value ranging between 0.022 (LSTD_2002) and 0.026 (LSTD_1912).

Table 4. Correlation Analysis Result for Climatic Variable Versus COVID-19 Cases Count

Climatic Variables	Statistics	Confirmed	Recovered	Deaths
WV19_12	Correlation Coefficient	**-0.233****	**-0.169***	-0.118
	Sig. (2-tailed)	0.000	0.010	0.074
	N	231	231	231
WV20_01	Correlation Coefficient	**-0.208****	**-0.156***	-0.095
	Sig. (2-tailed)	0.001	0.017	0.148
	N	233	233	233
WV20_02	Correlation Coefficient	**-0.208****	**-0.145***	-0.076
	Sig. (2-tailed)	0.001	0.026	0.245
	N	236	236	236
LSTN_1912	Correlation Coefficient	**-0.152***	-0.081	-0.057
	Sig. (2-tailed)	0.030	0.251	0.419
	N	204	204	204
LSTN_2001	Correlation Coefficient	**-0.142***	-0.094	-0.061
	Sig. (2-tailed)	0.043	0.183	0.387
	N	204	204	204
LSTN_2002	Correlation Coefficient	-0.129	-0.026	-0.024
	Sig. (2-tailed)	0.065	0.713	0.736
	N	204	204	204
LSTD_1912	Correlation Coefficient	**-0.161***	-0.015	-0.051
	Sig. (2-tailed)	0.021	0.831	0.470
	N	204	204	204
LSTD_2001	Correlation Coefficient	**-0.162***	-0.039	-0.041
	Sig. (2-tailed)	0.021	0.577	0.564
	N	204	204	204
LSTD_2002	Correlation Coefficient	**-0.147***	0.036	-0.033
	Sig. (2-tailed)	0.036	0.611	0.635
	N	204	204	204

** - Correlation is significant at the 0.01 level (2-tailed)

* - Correlation is significant at the 0.05 level (2-tailed)

Source: Own Elaboration

3.4 Multivariate Cluster Analysis

To examine the natural groupings that may exist within the COVID-19 dataset, the two-step cluster analysis was carried out. The internal consistency of the members within the groups identified was examined using the Silhouette measure of cohesion and separation (Rousseeuw, 1987). For this measure, clustering with silhouette measure value greater than 0.5 is considered to have a good cluster quality while less than 0.5 but greater than 0.2 is considered fair.

Table 5. Summary of the Auto-clustering Diagnostic for the Two-step Clustering Analysis

Number of Clusters	Schwarz's Bayesian Criterion (BIC)	BIC Change[a]	Ratio of BIC Changes[b]	Ratio of Distance Measures[c]
1	528.344			
2	104.806	-423.538	1.000	16.251
3	109.581	4.775	-0.011	5.521
4	137.353	27.772	-0.066	1.402
5	166.584	29.231	-0.069	4.037
6	198.544	31.960	-0.075	1.782
7	230.898	32.354	-0.076	1.318
8	263.375	32.476	-0.077	2.054
9	296.047	32.673	-0.077	1.868
10	328.806	32.759	-0.077	1.890
11	361.612	32.806	-0.077	1.937
12	394.444	32.832	-0.078	1.119
13	427.278	32.834	-0.078	1.047
14	460.114	32.836	-0.078	1.319
15	492.955	32.841	-0.078	1.146

[a] The changes are from the previous number of clusters in the table; [b] The ratios of changes are relative to the change for the two-cluster solution; [c] The ratios of distance measures are based on the current number of clusters against the previous number of clusters.

Source: Own Elaboration

The summary for the auto-clustering operation is presented in Table 5. The result indicated that two clusters are the optimal number of clusters for the dataset (incidence counts). This is because the highest ratio of distance measure (Table 5) is greatest at 16.251 when the number of clusters is 2 compared to 5.521 for 3 clusters and 1.402 for 4 clusters.

Based on this result the cluster distribution showed that 98.7% of the locations belong to Cluster 1, while 1.3% (3 locations) belong to Clusters 2. This clustering was found to exhibit good cluster quality (internal consistency) with a silhouette measure of 1.0. Examination of the variable importance (Table 6) for the grouping exercise shows that importance is in the order Deaths > Confirmed > Recovery. In the grouping of the locations, the most important criterion was the number of deaths recorded while the least important is the recovery counts.

Table 6. Variable Importance Result

Nodes	Importance
Recovered	0.4243
Confirmed	0.7866
Deaths	1

Source: Own Elaboration

Looking at the centroid of the natural grouping (Table 7), Cluster 2 has high mean values for deaths, confirmed, and recovery cases when compared to Cluster 1. The members of Clusters 2 area Hubei (China), Iran, and Italy while all the other locations belonging to Cluster 2.

Table 7. Centroid Attributes for the Natural Groupings

Cluster	Confirmed		Recovered		Deaths	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1	206	737	61	202	2	12
2	32271	30921	19114	29307	1618	1316
Combined	608	4623	300	3432	23	217

Source: Own Elaboration

3.5 Discussion

The most affected country could be found around the northern hemisphere (around a range of latitude) with most of the confirmed cases occurring at the epicenter of the disease (China). The recovery was also high among the countries and locations where the confirmed cases are high as well as some places where the infection is low. The highest death rate among the high infection countries was recorded in Italy. SARS Corona Virus has caused a major pandemic in this millennium and its origin is China - Guangdong Province (Ksiazek et al., 2003), so it is not surprising that a new strain emerged from China. This rate of infection from China the top 10 countries with a high number of confirmed cases indicated a point-source outbreak with a high number at the source (Ksiazek et al., 2003) and as one moves away from the source the number thins out.

Examination of aggregated counts of all cases across countries shows that there are statistically significant variations in the count of confirmed, recovery, and death cases for the COVID-19 infection. This could be attributed to the distance away from the source, demography, preventive and response measure across the countries, thus the manifestation of the disease is impacted by various constraints (Hagerstrand, 1968) while culture and tradition influenced its emergence (Cheng et al., 2007).

At the global level, spatial autocorrelation showed up only for the recovery rate as such there is a spatial process at those places across the globe. At the local scale, spatial autocorrelation emerged for all the infection attributes, thus indicating that there is a spatial process taking place. There are local clusters and outliers across the globe for confirmed, recovery, and death cases, thus showing that infection, recovery, and deaths have a spatial dimension to their occurrence. Large populations near the epicenter and nearby locations to confirmed cases are potentially still at risk. Since the disease is highly transmissible, contact with a large population may result in reemergence even after this current wave.

While the disease has been more prominent across a region, the result from the correlation analysis shows that there is a weak negative but statistically significant association between the cases and the climatic variables. This is in agreement with the findings of Tan et al. (2005) which identified 16°C to 28°C as the optimum environmental temperature associated with the SARs virus outbreak in 2003-2004. Essentially, as land surface temperature and water vapour content increases, confirmed case decreases. But it should be noted that these associations are weak and due to the coarseness (low spatial resolution) local variations may not be properly captured. However, with the outbreak coinciding with the previous episodes at the beginning of the millennium, it is logical to deduce that the period is conducive for the virus to grow and spread. This is in partial agreement with the findings of Tamerius et al. (2013) indicating that seasonal influenza thrives during the “cold-dry” and “humid-rainy” periods.

Two types of clusters emerged with the attributes of the incidence at different locations across the globe. Thus, locations could be distinguished most importantly based on the number of death and the number of confirmed cases. There is a natural group with a high

number of deaths, confirmed cases, and recovery cases with very few members - 3 locations (Hubei China, Italy, and Iran) indicating the most impacted so far. While the other locations (98.7%) are characterised by comparatively lower counts of confirmed, recovery, and death cases.

4. CONCLUSION

Based on the collated data, we can conclude that there is a latitudinal dimension to the prevalence of COVID-19, but since this is an ongoing event, we will have to wait and see how the event pans out. As such for now, there is evidence showing that the most impacted locations in terms of confirmed cases are around the northern hemisphere.

From the correlation analysis is it possible to conclude that there is a weak negative association between confirmed cases count and the selected climatic variables. The weakness could be attributed to the coarseness (low spatial resolution) of the climatic data. However, there is evidence of association with climatic conditions, this is also reflected in the latitudinal dimension highlighted earlier.

Spatial analyses revealed the level of spatial association across event locations. From the results, we can conclude that patterns formed at the global scale indicate majorly a random formation. However local level analysis shows that there are cluster and outlier locations across the globe, thus identifying locations for further studies and investigations.

The multivariate cluster analysis (non-spatial) reveals the natural grouping for the locations with the incidence of the disease, as such, we can conclude that there are two categories of location based on their counts of confirmed, death, and recovery. Essentially, the identification of area with differences could reveal underlying factors creating the observed figures.

The study has showcased the relevance of spatial structure in understanding the emergence phase of COVID-19 pandemic, while also exploring the relationship between the climatic variables and confirmed cases. With the pandemic is still evolving, our current conclusions might only be relevant for this initial phase of the disease. However, from the foregoing, it is recommended that spatial structure and organisation be considered in studying the evolution of the COVID-19 disease to help mitigate the spread and re-emergence of the disease. Consequently, further research needs to consider the spatial structure in the study of the evolution of the disease.

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THE STATUS OF RESOURCE MANAGEMENT AND CERTIFICATION IN TOURISM SUSTAINABILITY IMPLEMENTATION LITERATURE

Fatima Lampreia-Carvalho[1]

ABSTRACT

The present article aims to explain why *community-based natural resource management* and *tourism certification* are the main concerns in academic literature on tourism sustainability implementation. The method of choice is a systematic review of literature based on the Prisma Statement for Systematic Reviews. Sources of interest were identified within the Web of Science Core Collection and other repositories. From a total of 430 records screened, 106 stable documents were selected and submitted to content analysis to create a matrix coding of mentions of *sustainable tourism implementation* in highly cited publications. A content analysis revealed that *sustainable tourism implementation* encompasses eight sub-categories of interest in current research outputs. Those sub-categories are: (1) *Adaptive resource management (ARM), (2) Carbon mitigation approach; (3) Community-based Conservation Areas (CCAs) and Community -based ecotourism; (4) Community-based natural resource management (CBNRM); (5) Multi-objective Optimization model (6) Social reinvestment strategy; (7) Tourism Sustainability Certification and (8) Transition Management.* The analysis revealed that implementation strategies such as *Community-based natural resource management* and the *Tourism Certification Approach*, covered 60 percent of all mentions of methods of sustainability implementation in the literature selected and should be treated as leading accelerators of tourism sustainability, yet much work needs to be done explain how and why a certain destination or tourism business meet set standards over time and across national contexts.

Keywords: Sustainability, Tourism, Implementation, Policymaking, Management.

JEL Classification: L83, Q01, Q54, Z32

1. INTRODUCTION

Sustainable tourism partially overlaps with the terms: responsible tourism, alternative tourism, ecotourism, environmentally friendly and minimum impact tourism and thus it is well intertwined with issues such as physical environment, stakeholders, management, marketing, public sector, industry, taxes, other forms of tourism, education, and infrastructure. International Organisations such as the United Nations World Tourism Organisation, the United Nations Environment Programme and tourism experts have proposed many possible ways to fulfil the call for a more sustainable tourism.

Although climate change exposes the tourism sector to serious risks, the implementation of tourism sustainability can rely on effective management systems. Moreover, as this article seeks to demonstrate, previous academic studies on the research implementation of sustainable tourism supports the view that the accelerators of sustainable tourism implementation (positive tourism management, good destination management and good

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resource management) overcome the major barriers working against *tourism sustainability implementation* (TSI).

According to "The Making Tourism More Sustainable: a Guide for Policy Makers" which builds on UNEP and WTO (2005: 23) "Governments have a crucial role to play in the development and management of tourism and in making it more sustainable …in the developed world, issues of rejuvenation and visitor management are more prominent". The implementation of tourism policies and plans demand several approaches and techniques, but any planning recommendations must be feasible, and the methods of consolidation reviewed along the way. Both governments and the private sector are those responsible for such implementation and therefore this article will focus on empirical research on sustainable tourism implementation strategies which focuses on academic research, but it is directed to governments and the private sector involved in sustainable tourism development.

The role of the public sector in developing the tourism sector materialises via tourism policies, planning and research. Through those elements the public sector provides a basic infrastructure for tourism in terms of the development of touristic attractions, the setting of standards, patterns and rules for the administration of touristic services and facilities. The public sector establishes and manages the regulations underpinning the tourism sector and may offer incentives to attract private sector investments. The public sector will also take the responsibility, in joint (public/private) projects to further develop the tourism sector.

From the perspective of the tourism industry, its organizational infrastructure and wellbeing, three main issues are likely to obstruct the implementation of sustainable policies: (i) the number of actors involved, (ii) the presence of conflicting goals and (iii) the needs of resource rationalization (Arbolino, Boffardi, De Simone & Lopollo, 2021: 9). Aware that sustainability is an attribute of quality and tourism standards, the United Nations World Tourism Organisation (UNWTO) and the United Nations Statistics Division (UNSD) launched the initiative Towards a Statistical Framework for Measuring the Sustainability of Tourism (MST) to develop an international statistical framework for measuring tourism's role in sustainable development, including economic, environmental, and social dimensions (UNWTO/MST, 2016).

Given the wide scope of sustainability implementation, it will never be enough to analyse sustainable tourism development guidelines and management practices that are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. But a good start can be the UNWTO and Measuring Sustainable Tourism (MST) assertions on what tourism sustainability should do:

> "Sustainable tourism should: 1. Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural resources and biodiversity. 2. Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance. 3. Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income earning opportunities and social services to host communities, and contributing to poverty alleviation". (UNWTO/MST, 2016: 3)

Dorin (2011) argued that although the international community is trying to implement sustainable tourism in different regions of the world, some questions can be raised regarding the results of those projects and the industry's ability to replicate them elsewhere. Another noticeable gap refers to the absence of compulsory regulations to encourage the actual

execution of sustainability projects -"redundant proposals and advice that are offered by international institutions, with largely the same concepts, but lack of the tools of coercion to compel the implementation of these proposals" (p.135). With a broad remit, the intergovernmental world tourism organization – UNWTO has been questioned (Schyvens, 2007) as it seeks to supervise the promotion of responsible, sustainable, and universally accessible tourism, pitched towards the achievement of the universal 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

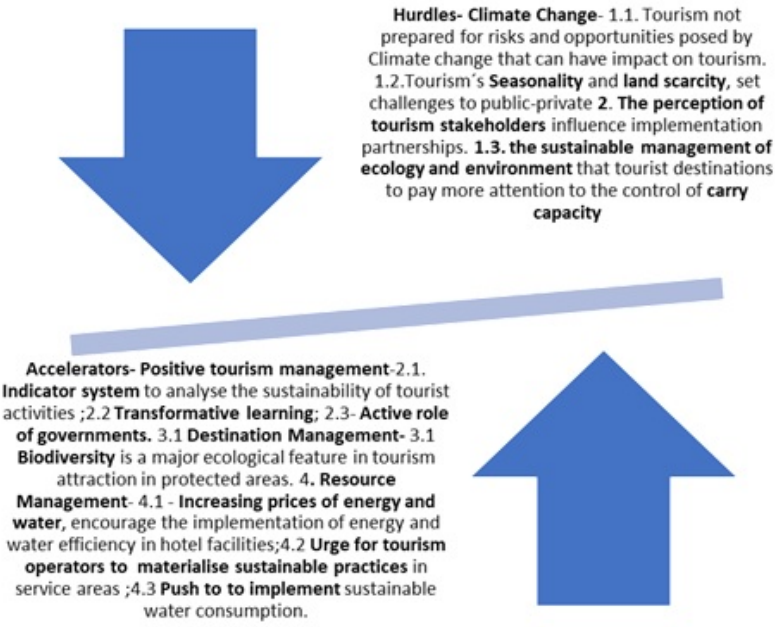
1.1 Academic Production on Tourism Sustainability

The above-mentioned guides and resolutions which shape international sustainability policy making can be analysed in a new light when confronted by academic production on tourism sustainability and destination image. Baloglu and McCleary (1999) suggested that tourists' destination images are formed out of three factors: quality of *experience*, attractions, and value/*environment* as perceptual/cognitive items. Considering that tourism uses finite resources that are greatly sensitive to deterioration, such as nature and human heritage, tourist interest and motivation will disappear without those resources. This aspect is vital for sustainability implementation studies because the main attraction of a tourist destination is the environment´s excellence, natural or urban.

2. STATE OF THE ART: FOCUS ON SUSTAINABILITY IMPLEMENTATION

This section seeks to explain the implementation of sustainable tourism and identify facilitators of increased environmental, social, and economic sustainability in the tourism industry. It considers previous reviews carried by Buckley (2012), Huang, Chang, Chung, Yin, and Yen (2019), who charted the development trajectory of sustainable tourism using articles retrieved from five online databases. It is vital to recall that previous reviews identified a few hurdles and accelerators to the implementation of tourism sustainability programs, as summarised below, in Figure 1 and detailed in Table 1, further below.

Figure 1. Hurdles and Accelerators in Tourism Sustainability Implementation, 2021



Source: Own Elaboration

It is often argued that sustainable tourism was created by academics, but their work has not suggested ways to overcome difficulties in making the implementation of sustainability a reality (Lane, 2017). There is also a belief that "dominating paradigms are self-enforcing and will not change unless…high level frameworks (e.g., a global agenda with implementation powers) will force them to do so" (Becken, 2019: 4).

Up to 2021, the literature on the implementation of sustainable tourism reported on comprehensive policy programmes, which included reference to a success strategy adopted in 1997 by the Netherlands Antilles government on the Curaçao Island, for the period 1998-2005 (Dinica, 2006). On Curaçao Island, environmental NGOs stirred voluntary implementation initiatives, together with the federal environmental agency. However, their success in stimulating environmentally responsible operations by tourism companies was limited. Alonso and Ogles (2010) also detected a lack of agreement in identifying the effects of tourism and hospitality operations on the environment. This uncertainty could be aggravated by the idea that environmental management in the tourism industry "constitutes the reuse and recycling of resources and not a reduction in consumption" (p. 819).

Studying a community-based collaboration for conservation and economic development in Bolivia (Chalalan Ecolodge), researchers identified "an evolving partnership between local and international stakeholders toward local control" (Jamal & Stronza, 2009: 169). The authors questioned "how does the tourism system fit with the protected area system? Who represents "Nature" in negotiations over conservation and use? How can plans and programmes be effectively enacted at the local level for long term success?" (Jamal & Stronza, 2009: 169). With focus on the environmental or social and economic effects of certification on tourism, Blackman and Rivera (2011) claimed that hotel certification in Costa Rica generates significant price premiums and therefore presumably has an economic benefit. Certification can be relatively effective, but because producers already meeting certification standards disproportionately choose to participate, certification typically does not change behaviour (Blackman & Rivera, 2011: 1182).

Implementation studies are also concerned with poverty alleviation and environmental sustainability. Those studies have been valuable to address global development challenges singled out by the United Nations and its Millennium Development Goals (MDGs), proposed in 2000. Researchers like Mbaiwa (2011) applied the concept of social capital to analyse the effects of tourism as carried out with the help of community-based natural resource management (CBNRM) to promote the sustainable utilisation of natural resources in the Okavango Delta. Results indicated that CBNRM stimulated increased social capital between the CBNRM stakeholders.

Gössling, Hall, Ekström, Brudvik and Engeset (2012) explored the *transition management* literature to build a theoretical framework for stakeholder involvement and policy implementation processes in sustainable tourism. A typology of transitions can be interpreted in terms of a set of the following ideal possibilities:

1. Reorientation of strategies- resulting from a shock outside or inside the regime followed by a response from regime actors using internal resources, with no consensus at end point or means;
2. Endogenous renewal, where regime actors make conscious, planned efforts in response to perceived pressures using regime internal resources;
3. Emergent transformation from uncoordinated response to pressures outside the existing regime, often driven by small, new regime actors (firms, agencies and NGOs);
4. Purposive transition composed of intended and coordinated change processes that emerge from outside the existing regime. (Gössling et al., 2012: 901).

The above categories underpinned a study of a national tourism sustainability initiative by the Norwegian government initiated in 2010. Innovation Norway invited representatives of six stakeholder groups to participate in the process of developing "Sustainable Tourism 2015". Results suggested that transition management provides a valuable theoretical framework to understand change processes.

Larson and Poudyal (2012: 933) suggested that an *adaptive resource management* (ARM) approach could "help planners and managers guide Machu Picchu's growth". The ARM amounted to individually monitoring specific indicators of quality across various spatial and temporal scales. Managers could potentially address multiple management considerations that affect residents, foreign tourists, private tour operators and regional governments. Some of the suggested indicators for specified objectives in adaptive management framework at Machu Picchu were: "Protect biological diversity; Maximize amount of protected habitat… Minimize erosion and landslide potential; Minimize and properly dispose of waste; Preserve cultural heritage…Increase economic benefits and ensure stakeholder satisfaction" (p. 930-931).

Buckley (2012) reviewed social and environmental impacts, responses, and indicators for the mainstream tourism sector worldwide, in five categories: population, peace, prosperity, pollution and protection. Of 5000 relevant publications, very few attempted to evaluate the entire global tourism sector in terms of a global research in sustainable development. One priority was "the ability of tourism to bring about large-scale change in land use….in line with the internationally agreed Aichi targets, as a buffer against climate change" (p. 537).

As an increased stakeholder pressure requires companies to be transparent about their *Corporate Social Responsibility* (CSR) practices, Font, Walmsley, Cogotti, McCombes, and Häusler (2012: 1544) proposed that it is essential to know how reliable corporate disclosure mechanisms are, by testing the gap between corporate social responsibility claims and actual practice. Their study benchmarked corporate social responsibility policies and practices of ten international hotel groups of particular importance to the European leisure market. The authors found that corporate systems are not necessarily reflective of actual operations. Environmental performance tends to be eco-savings driven and centred on labour policies aimed to comply with local legislation. Thus, socioeconomic policies can be said to be inward looking with little acceptance of impacts on the destination, with limited customer engagement.

From yet a different angle, the key challenge for planning sustainable tourism development can be the limitation of the human perception of time (Jovicic, 2013). In this view, future conceptualisation of sustainable tourism issues should involve local communities as much as the issues of environment and economy. This could be achieved only through the active participation of all stakeholders.

A cluster approach has also been an object of study for the implementation of sustainability programs in Australia. Based on data from an international tourism and environmental management and advisory group – EC3 Global, Mclennan, Becken and Watt (2016) researched sustainability solutions for enterprises, destinations, and communities as designed by EC3 Global, founded by Australia's Sustainable Tourism Cooperative Research Centre in 1987. EC3 administered six voluntary sustainability clusters in Australia between 2007 and 2012 and "As part of a regular monitoring program, the organisation collected data on the six tourism sustainability clusters involving 307 businesses in Australia in 2008 - 2010." (Mclennan et al., 2016: 348).

In 2017, D'Amato, Droste, Allen, Kettunen, Lähtinen, Korhonen, Leskinen, Matthies, and Toppinen advocated for reciprocal integration by comparing the different sustainability strategies promoted by *Green Economy*, *Circular Economy* and *Bioeconomy.* The authors understood that Green Economy acts as an 'umbrella' concept, incorporating aspects from

Circular Economy and Bioeconomy concepts, as well as supplementary ideas, such as. nature-based solutions. Regarding the social dimension, Green Economy can be seen as "more inclusive of some aspects at local level (e.g., eco-tourism, education)" (D'Amato et al., 2017: 716).

Carbon mitigation strategies are judged as "an urgent and overdue tourism industry imperative" (Sun, Lin & Highan, 2020: 1). In the case of Taiwan, great potential exists to reduce emissions and sustain economic yields. Sun et al. (2020) thus put forward a novel carbon mitigation approach, which seeks to pro-actively determine, foster, and develop a long-term tourist market portfolio. Sun et al. (2020) thus proposed an analytical framework that quantitatively inform optimization of the desired market mix by combining the "de-growth" and "optimization" strategies.

Responses to the UN 2030 Agenda and its six Goals (UNWTO, 2011; UNDP, 2015) were materialised in projects supporting best practices in the tourism sector. Examples of these are as follows: "Kasbah du Toubkal, a small lodge in the midst of a Berber community in Morocco…Juist Island project (Germany), Greenest hotels in Thailand (Tongsai Bay), Gili Lankanfushi and the Coral Line Project (Maldives)" (Arbolino et al., 2021: 2). However, the authors also detected a gap in the process – there was no implementation framework for supporting investment decisions in sustainable tourism initiatives. Arbolino et al. (2021) thus proposed a methodology to assess and select tourism-related projects, to increase the efficiency in resource allocation through a comparison between the proposed *optimization model* and the traditional *multicriteria methods*.

To conclude, it is well-known that sustainable development, endorsed by the Brundtland report, is an all-embracing discourse for green growth and prudence. But within tourism, sustainable development refers to tourism that satisfies the needs of tourists and host regions while protecting and improving opportunities for the future (Vaughan, 2000). Sustainability has social and environmental dimensions. Some of those aspects are tourism and recreation, classified as social aspects of sustainability that touch upon Education and training, social justice, participation and democracy, health, quality of life and well-being, social capital, community network, safety, employment, income, social order, cohesion, and cultural traditions. On the other hand, environmental sustainability aspects include concerns such as "water, carbon, and nutrient cycles (including emissions and waste); greening cities and logistics; quality of energy source and efficiency in production and use; maintenance of biodiversity, ecosystems and related services". D'Amato, Droste, Allen, Kettunen, Lähtinen, Korhonen, Leskinen, Matthies, and Toppinen (2017: 6-7).

This section recalled literature on facilitators of increased environmental, social, and economic sustainability in the tourism industry from 1997 to 2021, helping to contrast tourism sustainability hurdles and accelerators, as summarised in Table 1.

Table 1. Factors Underpinning Tourism Sustainability Implementation, 2004-2021

Factor 1- Climate Change	**Author**	**Hurdles**	**Accelerators**
1.1 Tourism is considered little prepared for the risks and opportunities posed by climate change which can have direct impacts on tourism.	(Scott, 2011)	There are barriers to environment management.	
Tourism seasonality and land scarcity, set challenges to public-private partnerships.	(Arbulú, Lozano, & Rey-Maquieira, 2016)	Public-private partnerships related to the municipal solid waste management (MSWM) system.	
1.2 The perception of tourism stakeholders influence implementation.	(Sánchez-Medina, Díaz-Pichardo, & Cruz-Bautista, 2016)	Stakeholders may oppose the implementation of environmental management practices.	
1.3 The sustainable management of ecology and environment that tourist destinations to pay more attention to the control of carry capacity.	(Christofakis, Mergos, & Papadaskalopoulos, 2009; Ponting & O'Brien, 2014)	It is unlikely that Tourist destinations will control carry capacity.	
Factor 2 - Positive Tourism Management			
2.1 Give tourism managers and policy-makers information to better understand the transition to sustainability at specific destinations and to encourage them to carry out corresponding policy and management responses.	(Blancas et al., 2011)		Demand for an indicator system to analyse the sustainability of tourist activities in a country with a consolidated tourism sector.
2.2 Learning organisations and volunteer tourism organizations must redesign their activities to include filling the remaining steps of transformative learning to improve their product for both the tourists and the sustainability outcomes of the projects.	(Chang & Sun, 2007) (Coghlan & Gooch, 2011)		Appeal for learning organisations and volunteer tourism organisations to invest in transformative learning to improve their product.
2.3 The active role of governments engaging in the implementation of sustainable tourism is needed (Bâc, 2004).	(Bâc, 2004)		Call for Governments to engage in the implementation of Sustainable tourism.
Factor 3 - Destination Management			
3.1 Biodiversity is a major ecological feature in tourism attraction in protected areas.	(Catibog-Sinha, 2008)		Motivation for Tourism Planners and Managers to incorporate the principles of biodiversity conservation.
Factor 4 - Resource Management			
4.1 Increasing prices of energy and water, encourage the implementation of energy and water efficiency in hotel facilities.	(Bohdanowicz, 2006)		Need to implement energy and water efficiency in hotel facilities.
4.2 Business demands or added costs also present challenges in fully materializing an operator's environmentally sustainable practices, particularly concerning water consumption in service areas, such as in toilets, which represents a large proportion of total water usage (Alonso & Ogle, 2010).	(Alonso & Ogle, 2010)		Urge for tourism operators to materialise sustainable practices in service areas (toilets).
4.3 Water resource use is likely to become an increasingly important issue in tourism management.	(Hadjikakou, Chenoweth, & Miller, 2013)		Push to implement sustainable water consumption.

Source: Own Elaboration

The above Table 1 organises evidence that tourism sustainability accelerators are more numerous than the hurdles to overcome in the implementation of future projects.

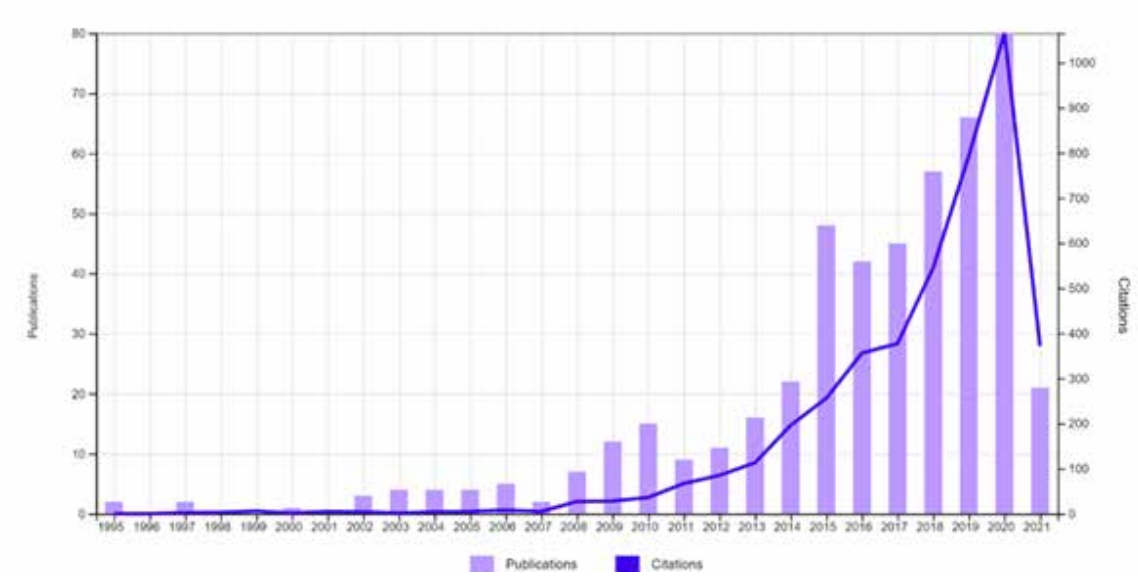
3. METHODOLOGY

This small desk investigation relies on the qualitative methodology known as Content Analysis (CA) to systematically approach and compare bibliographic resources concerning sustainability implementation methods. This observational research method is used to systematically evaluate the content of recorded communications (Kolbe & Burnett, 1991) and commonly supports academic productions in social sciences (Berg, 2009). Favourable claims regarding the CA methodology highlight its reassurance of analytical flexibility (Duriau, Reger, & Pfarrer, 2007), and adequation to diverse research designs of an inductive and deductive nature (Roberts, 1989; Elo & Kyngäs, 2007). Hall and Valentin (2005) pinpointed different uses of CA in the tourism field, such as the examination of the context of texts written by tourists. Caprumbi and Coromina (2016) analysed the trends and issues regarding the use of CA approach in the tourism field in 164 articles from ten relevant tourism academic journals included in the Journal of Citation Report (JCR).

3.1 Bibliography Search Methods

This desk research with focus on published academic research benefited from a primary search in the citation index for scientific and scholarly research known as the Web of Science Core Collection. This is a curated collection of over 21,000 peer-reviewed, high-quality scholarly journals published worldwide in over 250 science, social sciences, and humanities disciplines. Below in Figure 2 is a Web of Science report resulting from a search for TOPICS: (tourism sustainability implementation).

Figure 2. Web of Science Citation Report, 1900-2021



Source: Web of Science Report 4/05/2021

Tourism (Topic) AND Implementation (Topic) AND Sustainability (Topic)	
Time span: 1900-2021.	
Results found	478
Sum of the Times Cited	4360
Average Citations per Item	9.12
h-index	31

Source: Web of Science Report 4/05/2021

Bibliographic search was also carried out via additional databases and repositories. Below is a summary of the bibliometric analysis, comprising search engines, strings, dataset, size, and type of analysis, as reported below, and detailed in the Prisma Routine/Diagram for the Systematic Review of Studies on TSI, as following:

Step 1 - Identification

a) Identified studies via databases Web of Science, Academic Search Complete, and registers such as RCAAP and Research Gate. Records *identified* from Databases (n =519); Registers (n = 4).
b) Records *removed* before screening: Duplicate records removed (n =20) Records marked as ineligible by automation tools (n =68). Records removed for other reasons (n =1).
c) Identified studies via *other methods* Records identified from: Websites (n =30); Organisations (n =6); Citation searching (n =38). Reports sought for retrieval (n =20); Reports identified via other methods that were assessed for eligibility (n =20).

Step 2 - Screening

d) Records from Web of Science, RCAAP, Academic Search Complete and Research Gate-screened (n =430); Records excluded (n =200); Reports assessed for eligibility (n =110)
e) Reports excluded: Reason 1 (n =Publication in other scientific area), Reason 2 (n =Not contributed to tourism sustainability implementation), Reason 3 (n =Conference proceedings).

Step 3 - Inclusion

Studies included in review (n =96) + Reports of included studies (n = 10) = 106.

Table 2. Literature Search Methods on TSI: Web of Science, 1900-2021

Search Engine	Strings Searched	Dataset Size	Analysis
Web of Science (04 May, 2021)	TSI. Time range: 1900-2021	478	Chronological and geographical distribution of publications; most cited publications, salient keywords, and emerging topics in sustainability implementation.
RCAAP (29 April, 2021)	TSI in Title (journal articles. Time range; 2018-2021)	12	Journal articles with focus on Tourism Sustainability and Implementation.
Academic Search Complete (30 April, 2021)	TSI. (Time range: 2020-2021)	8	Journal articles with focus on Tourism Sustainability and Implementation. Emerging topics in sustainability implementation.
Research Gate (29 April, 2021)	TSI	21	Journal articles and other documents with focus on Tourism Sustainability and Implementation.

Source: Own Elaboration

Table 3. List of Highly Cited Papers

List of Highly Cited Papers	Web of Science	Topics
Author	Total Times cited	Implementation issues
Jamal, T and Stronza, A 2009 | *Journal of Sustainable Tourism*	188	Collaboration theory and tourism practice in protected areas: stakeholders, structuring and sustainability.
Font, X; Walmsley, Cogotti; McCombes; Häusler (2012). Dec 2012 | *Tourism Managemen*t	149	Corporate social responsibility: The disclosure-performance gap.
Blackman, A and Rivera, J Dec 2011 | *Conservation Biology*	137	Producer-Level Benefits of Sustainability Certification.
Scheepens, AE; Vogtlander, JG and Brezet, JC Feb 15 2016 | *Journal of Cleaner Productio*n	127	Two life cycle assessment (LCA) based methods to analyse and design complex (regional) circular economy systems. Case: making water tourism more sustainable.
Chan, ESW and Hawkins, R Dec 2010 | *International Journal of Hospitality Managemen*t	105	Attitude towards EMSs in an international hotel: An exploratory case study.
Schianetz, K; Kavanagh, L and Lockington, D Dec 2007 | *Tourism Management*	99	The Learning Tourism Destination: The potential of a learning organisation approach for improving the sustainability of tourism destinations.
Miller, D; Merrilees, B and Coghlan, A Jan 2015 | *Journal of Sustainable Tourism*	98	Sustainable urban tourism: understanding and developing visitor pro-environmental behaviours.

Source: Own Elaboration

3.2 Implementation Strategies in Highly Cited Papers

Publications such as *Journal of Sustainable Tourism*, *Tourism Management, Conservation Biology, Journal of Cleaner Production, International Journal of Hospitality Management* published some of the most cited articles on how to implement sustainable tourism. Jamal and Stronza (2009), for example, considered the challenges of implementation and long-term structuring for sustainability and success, as well as other crucial aspects of sustainability such as: "complexity (nested systems of biophysical environments, tourism and park management structures, community– resident systems, local–global systems and use–conservation gap; as well as scale, structure and scope of collaborations (including community involvement and control)". Their main reference was a community-based collaboration for conservation and economic development in Bolivia. Amid the sustainability strategies mentioned, is the strategy for "Social Reinvestment" (p.181).

As increased stakeholder pressure requires companies to be transparent about their Corporate Social Responsibility practices, the literature also points out that "it is essential to know how reliable corporate disclosure mechanisms are, testing the gap between corporate social responsibility claims and actual practice" (Font, Walmsley, Cogotti, McCombes & Häusler, 2012: 1544). This study benchmarked corporate social responsibility policies and practices of ten international hotel groups of particular importance to the European leisure market.

On the topic of certification, Blackman and Rivera (2011) proposed that producers of goods and services tend to adhere to defined environmental and social-welfare production standards and this trend was increasingly popular at the time. The authors identified peer-reviewed, producer-level studies in economic sectors in which certification was particularly prevalent (bananas, coffee, fish products, forest products, and tourism operations) and argued that evidence in favour of certification benefits for the environment and for producers was

still limited. More evidence would need to incorporate rigorous, independent evaluation into the design of certification projects.

There is a prevalent view that researchers need to validate metrics to analyse complex business models in the *circular economy*. To this end, Scheepens, Vogtlander and Brezet (2016) applied two methods: Eco-efficient Value Creation (EVR benchmarking) and the Circular Transition Framework (describing stakeholder activities which supported the transition towards sustainable business models) by means of a three-dimensional approach of costs, eco-costs, and market value. The practical case of analysis was the design and implementation of a business model for sustainable water recreation in Friesland (a province in the Netherlands).

Adopting a diverse perspective, research into environmental management systems (EMSs) looks at the driving forces, costs and benefits and nature of such systems. Chan and Hawkins (2010), for example, studied the impact of an EMS on hotel employees whose working attitude directly affects the services provided to guests by a predominantly workforce. An international hotel in Hong Kong with an ISO 14001 EMS was selected for the actual study. The research showed that emphasis of safer, better, and "healthier working environment that results from EMS implementation and the achievement of ISO 14001 accreditation could make hotel employees more committed to their jobs" (p. 649).

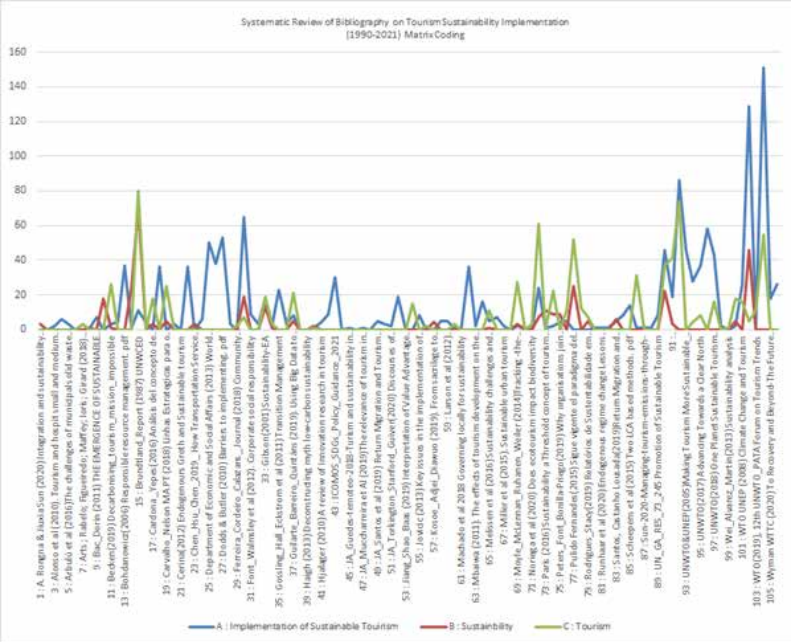
A framework for a Learning Tourism Destination (LTD) based on the concept of the Learning Organisation (LO) has also been investigated (Schianetz, Kavanagh & Lockington, 2007). This framework uses systems thinking and system dynamics modelling (SDM) approaches to implement and foster collective learning processes. SDM, a computer-based methodology can "…quantify the effects of the interconnections and time delays… to test certain policies" (Schianetz et al., 2007: 1468). The authors discussed the concept of the Learning Tourism Destinations (LTD) with reference to six case studies around the globe. The results revealed that SDM can promote communication between stakeholders and stimulating organisational learning.

The debate on sustainable tourism destinations also gained a new relevance for policy makers with an interest in the implementation of sustainable tourism in urban tourism destinations. Work published by Miller, Merrilees, Coghlan (2015) envisaged a concept of tourist social responsibility. Based on a quantitative online survey of visitors to Melbourne, Australia, the authors collected data on tourists' pro environmental behaviours in categories such as recycling; green transport use; sustainable energy/material use (lighting/water usage), and green food consumption.

3.3 Content Analysis NVIVO12 Outputs

Contents relating to what is to be done to support "sustainable" tourism are fragmented across social and economic dimensions. The matrix coding in Figure 3 demonstrates the frequency of contents in the 106 stable documents analysed. The WTO_UNEP (2019) Baseline Report on Integration of Sustainable Consumption greatly emphasised (151) the implementation of sustainable tourism, followed by WTO (2004) Indicators-of-Sustainable-Development-for-Tourism-Destinations-A-Guide-Book-by-UNWTO that also greatly emphasizes the topic (129), followed several mentions (86) in the UNWTO (2013) Sustainable Tourism for Development.

Figure 3. Matrix Coding – Systematic Review of 106 Documents, 1990-2021

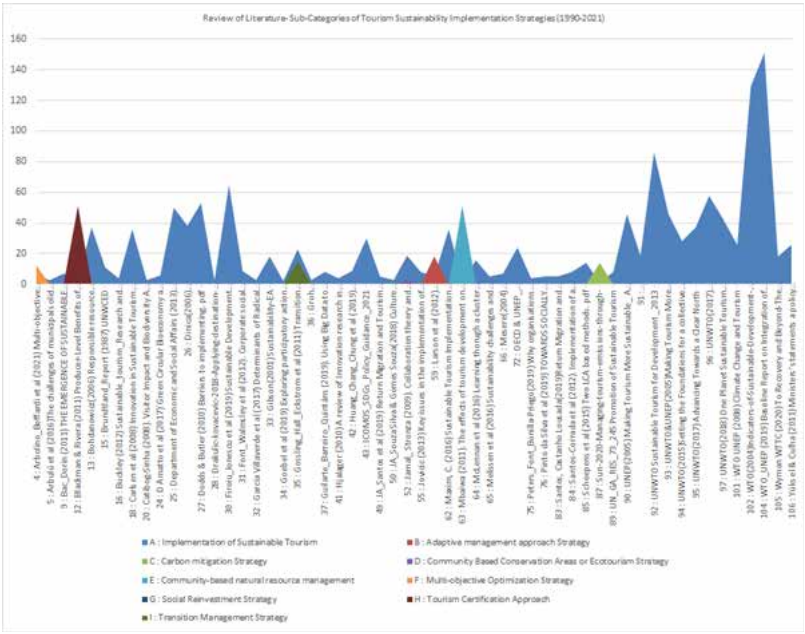


Source: Own Elaboration with NVIVO12

Academic works by Firoiu Ionescu et al. (2019) (65 mentions), Dodds & Butler (2010) (53), Dinica (2006) (38), Bohdanowicz (2006) (37), and Maxim, C. (2016) stressed the STI category (36). Other relevant publications were Carlsen et al. (2008) (36), and Chan and Hawkins, R. (2010). Attitude towards EMSs in an international hotel (36). It is therefore advisable to display a content analysis of subcategories of TSI.

The figure and table below expose the importance of two sub-categories of TSI in the academic articles analysed. Those key subcategories are: (a) *Community-based natural resource management* (51) and *Tourism Certification Approach (51*), responsible for 60% of all mentions to methods of sustainability implementation.

Figure 4. Sub-Categories of Tourism Sustainability Implementation, 1990-2021



Source: Own Elaboration with NVIVO 12

Table 4. Sub-Categories of Tourism Sustainability Implementation, 1990-2021

Sub-Node	References
Social Reinvestment Strategy	1
Community Based Ecotourism Strategy	3
Multi-objective Optimization Strategy	12
Carbon mitigation Strategy	14
Transition Management Strategy	15
Adaptive management approach Strategy	18
Tourism Certification Approach	51
Community-based natural resource management	51
Total	**165**

Source: Own Elaboration with NVIVO 12

With basis on this review, the main implementation instruments discussed in the UN´s reports and academic literature researched can be summarised as:

a) The *Implementation of Sustainable Tourism,* as a general category encompassing all mentions of related subcategories was strongly stressed 165 times in the selected academic articles.

b) Adaptive management approach or adaptive resource management (ARM), based on the UN World Tourism Organization's (UNWTO) sustainable tourism framework, was mentioned as a framework that applies knowledge from related disciplines to address contemporary tourism issues. "There are variations of the ARM approach to informed decision-making. Early iterations still in use today include the Limits of Acceptable Change (LAC), the Visitor Impact Management Model, both of which aim to set limits and minimize negative impacts from recreation and tourism on public lands. Newer strategies include the Tourism Optimization Management Model (TOMM) and the Integrated Monitoring and Adaptive Management System (iMAMS)" (Larson & Poudual, 2012: 926);

c) The Carbon mitigation approach supports the management of tourism emissions through optimizing a tourism demand mix: concept and analysis. This involves engineering discrete visitor segments so that overall anthropogenic greenhouse gas (GHG) emissions from tourism at a destination are reduced while, at the same time, seeking to maximize the collective benefits of tourism to the local/national economy, environment, and society (Gossling et al., 2016). Optimization seeks to develop and encourage lower emission markets (and/or demarketing high emission segments), while carefully considering the collective economic and social impacts at the destination after market intervention and re-configuration The proposed analytical framework is an iterative process (Sun, Lin & Higham, 2020);

d) Community-based Conservation Areas (CCAs) and Community-based ecotourism refer to areas owned by the community and where community-based tourism may be operating. There are two important factors in such community-based partnerships: "(1) ensuring long term sustainability of tourism and natural resources and (2) community or local/ indigenous ownership, control and management of tourism enterprises and activities" (Jamal & Stronza, 2009: 176);

e) Community-based natural resource management (CBNRM) in Mbaiwa (2011) is an incentive-based conservation philosophy that links conservation of natural resources with rural development. The basic assumption of CBNRM is that for a community

to manage its natural resource base sustainably, it must receive direct benefits arising from its use. These benefits must exceed the perceived costs of managing the resources. CBNRM scholars argue that when community livelihoods are improved, such a community is obliged to observe conservation ideals. The conceptual foundations of CBNRM are: (a) economic value; (b) devolution – emphasising the need to devolve management decisions from government to the community or local land users and (c) collective proprietorship – whereby groups of people are jointly given use rights over resources. CBNRM aims at achieving poverty alleviation and environmental sustainability (Mbaiwa, 2011: 253);

f) *The Multi-objective Optimization model* consists of an approach in tourism sustainability planning to maximise the efficiency of public resource allocation. The model accounts for environmental, social, and economic impacts, to select tourism activities to be done to maximize stakeholder utility. The multi-criteria dimension analysis (MCDA) methods allow practitioners to simultaneously address issues related to tourism policymaking. Decision support systems founded on multi-objective techniques facilitate a feasible, effective, and useful appraisal of the effects of tourism policies and a subsequent improvement of their sustainability (Arbolino, Boffardi, De Simone & Lopollo, 2021: 3);

g) *Social Reinvestment Strategy* – complements *Community-based Conservation Areas (CCAs) and Community-based ecotourism.* In the context of a community-based collaboration for conservation and economic development in Bolivia- This strategy was created to define how the fees can be applied to community development needs in categories that can be identified as education, health, agriculture, recreation, legal representation and other needs (Jamal & Stronza, 2009: 181). Kudratova, Huang and Zhou (2018) approached the issue of optimal project selection considering sustainability under reinvestment strategy. The authors proposed an integrated novel optimization approach in which sustainability cost is quantified and reinvestment strategy is adopted;

h) *Tourism Sustainability Certification approach*, extremely relevant in the literature, refers to initiatives certifying that producers of goods and services adhere to defined environmental and social-welfare production standards. Certification spurs producers to improve their environmental, social, and economic performance. In theory, it does so by enabling the consumer to differentiate among goods and services in relation to their environmental and social attributes and effects. "This ability to differentiate facilitates price premiums and expands market access for certified products. Price premiums and market access, in turn, create financial incentives for producers to meet certification standards" (Blackman & Rivera, 2011: 1177);

i) *Transition Management*, another key strategy for researchers in the field, provides a theoretical framework for stakeholder involvement and policy implementation processes in sustainable tourism. Transition management involves integrative and multi-level governance being used to shape and foster development processes. It also stirs the choice of policy instruments and actions by individuals and private and public organizations, based on common visions. Its main objective is "to empower stakeholders to develop their knowledge base and to implement new practices and technology change. It is best understood as not being a policy instrument, although it perhaps serves this role at a meta-policy level, but is instead a perspective" (Gossling et al., 2012: 900).

4. TRANSITION MANAGEMENT AND CERTIFICATION IN SUSTAINABLE TOURISM IMPLEMENTATION

Based on the literature analysed, with special attention to UNWTO supported research, one can identify two transition types in sustainable tourism implementation, which are *strategic reorientation of growth management* around broad sustainability and democratic concerns (Gleeson, Darbas & Lawson, 2004: 345; Gadotti, 2010: 203) and *endogenous renewal* (Cerina, 2012), with both approaches being self-regulatory and voluntary.

Strategic reorientation of growth will involve social, economic, and political dimensions of interest, aligning the interests of businesses, governments, and civil society. As stated in the 2002 Johannesburg World Summit on Sustainable Development, the main instruments used in global supranational initiatives to implement sustainable tourism are multi-stakeholder partnerships for progressing toward the Millennium Development Goals to leverage the impact of interventions. Market-based policies, fiscal incentives, and consumer awareness have also been used to support strategic reorientation of growth (ICAO 1997-2011; WTTC 2011).

The *endogenous transition* method tends to be self-regulatory and voluntary and can also follow recommendations seen as complementary to national and local regulations. The UNWTO, 2020 Global Tourism Plastics Initiative is an example of the integration of transnational implementation initiatives in endogenous transition methods. Initiatives on waste management and recommendations for the tourism sector to continue action on plastic pollution during COVID-19 recovery are examples that those methods of transition tend to blend. The major difference associated with the endogenous type of transition is that it can be community led and managed. As argued in the literature, an economy able to perform *endogenous growth* conforms to a positive and sustained long-run growth rate of the economy Such growth will be allied to the sustainability of the environmental resource, explained as "a non-negative growth rate of the environmental assets" (Cerina, 2012: 16) because it will create employment and enhance the value and utilization of local resources and skills. Whilst developing endogenous tourism commodities *endogenous transition* energize local cultures and traditions. It also develops local skills and capacities for setting up, running, and promoting alternate tourist enterprises. Table 5 displays some of the global supranational initiatives to implement sustainable tourism, with reference to diverse transition types, approaches, and instruments.

Table 5. Global Supranational Initiatives to Implement Sustainable Tourism

Reference	Sustainability Dimensions	Transition Type	Approach	Instruments
WTTC/WTO/Earth Council 1995	Environmental	Reorientation of trajectories	Self-regulation/ voluntary	-
UNWTO 1999	Social, political (environmental issues)	Reorientation of trajectories	Self-regulation/ voluntary	-
2002 Johannesburg World Summit on Sustainable Development	Social, economic and political. Aligning the interests of businesses, governments and civil society	Reorientation of trajectories	Self regulation/ volutary	Multi-stakeholder partnerships New vehicle for progressing toward the Millennium Development Goals leverage the impact of interventions
UNWTO 2004, 2010; UNWTO-UNEP-WMO 2008; UNWTO-SNV 2010	Environmental, economic, social	Endogenous renewal	Self-regulation/ voluntary	Capacity building, dissemination, networking, technical co-operation on project basis
UNEP 2011	Environmental, economic (social)	Endogenous renewal	Self-regulation/ voluntary	Policy recommendations, best practice for businesses, financing projects, consumer awareness
WTTC 2011	Environmental, social, economic	Reorientation of trajectories	Self-regulation/ voluntary, regulation	Market-based policies, fiscal incentives, consumer awareness
ICAO 1997-2011	Economic (social, environmental)	Reorientation of trajectories	Self-regulation/ voluntary	Market-based
SCBD 2004, 2007	Environmental, economic, social	Endogenous renewal	Self-regulation/ voluntary	Capacity building, education, guidelines, market-based policies, networking
UNWTO, 2020 Global Tourism Plastics Initiative	Environmental	Endogenous renewal	Recommendations to be seen as complementary to national and local regulations.	Waste management. 5 Recommendations for the tourism sector to continue taking action on plastic pollution during COVID-19 recovery

Source: Adapted from Gossling, Hall, Ekstrom, Engeset & Aall (2011: 903)

The UNWTO (2017) Practical Guidelines for Integrated Quality Management in Tourism Destinations describes the elements that should be integrated in a sustainable quality plan, including the European Foundation for Quality Management (EFQM) as a reference model. The social, cultural, economic, and environmental sustainability of tourism activities become components of quality in tourism that guarantee business survival. But sustainability also means ethical responsibility allied to quality. It is therefore "unsurprising to see the two concepts closely related, particularly in managing destinations." (UNWTO, 2017: 18).

Managing the quality system means measuring its effectiveness at regular intervals with respect to standards which refer to an objective level of quality that the destination aspires to achieve. To control the processes over time and evaluate the effectiveness and timeliness of improvements, practitioners must use measurable indicators representative of the attributes. The process is managed by a Quality Committee, comparable to a DMO, with varying composition in terms of numbers and form.

"Sustainability indicators include: – Investment in awareness activities; – Business climate indices (survey); – Satisfaction indices (residents; survey); – Number of tourism enterprises

with majority local ownership; – Energy consumption (kWh/person [residents and visitors]/ period); – Water consumption (m3 /person [residents and visitors]/period); – Waste (kg/ person [residents and visitors]/day); – Contribution of tourism to the local economy (% of GDP; income per inhabitant); – Concentration of CO2 gases/period; – Surroundings (survey); and – Tax receipts generated by tourism" (UNWTO, 2017: 78).

The World Tourism Organization and United Nations Environment Programme (2019) published other documents with focus on implementation, such as the *Baseline Report on the Integration of Sustainable Consumption and Production Patterns into Tourism Policies*, which includes a table with sustainable consumption and production (SCP) policy instruments, listed below in Table 6.

Table 6. Sustainability Policy Instruments

Policy Instruments	**Phases of Life-cycle**				
	Extraction of natural resources	Manufacturing and production processes	Provision of sustainable products, services and works	Use and consumption	End-of-life management
1. Regulatory and legal instruments	Regulation of access and activities in vulnerable areas, cultural and natural heritage sites	Regulations on water and energy efficient technologies, reuse and recycling of water, use of renewable energy	Regulations regarding construction materials and environmental standards of products	Regulations on visitor management and carrying capacity	Regulations on discharge of sewage and solid waste
2. Economic and Fiscal instruments	Fees for national parks and natural reserves, and protected areas for nature conservation as well as for other attractions	Grants, soft loans or tax credits for investments in eco-technologies (water, energy, etc.) and the reduction of emissions	Funding schemes for sustainable business development	Tourism tax earmarked for environmental action (beach cleaning, waste infrastructure awareness raising).	Promotion of carbon emission offset schemes linked to investments in local community projects for tourist/tour operators.
3. Communication and voluntary instruments	Public-private partnerships for sustainable tourism and networks involving communities.	Corporate Social responsibility in the tourism sector.	Certification schemes and guidelines for responsible operations.	Available information on sustainability issues and Codes of Conduct.	Promotion of tourist activities with lower impacts on environment (walking tours, cycling).

Source: Adapted from SWITCH-Med SCP Policy Toolkit, in UNWTO (2019) *Baseline Report on the Integration of Sustainable Consumption and Production Patterns into Tourism Policies* (p.22)

The overhead policy instruments, sustainability factors and implementation tools underpinning TSI situate sustainable tourism as a truly practical approach to tourism management. According to pragmatic philosophy of tourism destination management, sustainable tourism partially overlaps responsible tourism, alternative tourism, ecotourism, environmentally friendly and minimum impact tourism. From this angle, tourism sustainability is well connected with physical environment, stakeholders, management, marketing, public sector, industry, taxes, other forms of tourism, education, and infrastructure. Stakeholders

and practitioners have a choice of possible ways to fulfil the call for a more sustainable tourism.

4.1 Tourism Sustainability Standards and Certification

Certification is a way to ensure that a destination or tourism business meet certain standards. In the tourism sustainability jargon, *sustainable destinations* denote infrastructural, economic, social, and environmental aspects of tourism development that are examined simultaneously. *Sustainable enterprises* are those which "adhere to best practices, innovate, and harness the latest technologies will be more likely to prosper" (Carlsen, Jago, Harris & Silva, 2006: 19).

As negative impacts of tourism were felt in many destinations around the world, the triple bottom line of sustainability became an accepted business practice. Initially, business certification was concerned with quality, whereas governments took on the regulation of health, hygiene, and safety aspects of sustainable tourism, leaving any control over the environmental impacts of tourism for green certification programs. Green certifications have multiplied since the International Year of Ecotourism of 2002. Yet the Mohonk Agreement (2000) emerged as an informal effort to harmonise the domain and conceive a common baseline for sustainable tourism and ecotourism certification. Soon after, the Sustainable Tourism Stewardship Council (STSC) feasibility study generated recommendations for the establishment of minimum standards for the certification of sustainable tourism.

4.2 Types and Approaches to Certification

Tourism sustainability certifications can be first, second or third-party certifications. First party means self-evaluation, when a company or a destination declares that its products meet certain standards, with no external verification. Second party certification occurs when purchasers or a tourism industry body assures that the products and services meet the clients´ expectations. And a third-party certification refers to a neutral and independent evaluation as to whether the destination and its products comply with clearly defined standards and so most credible certification programs will demand a third-party assessment.

Approaches to certification of sustainable tourism can be *process-based system* and *performance-based.* The *process-based* certification treats a travel enterprise as a collection of procedures managed to achieve a desired outcome relating to a core value, with the most used process-based systems being the ISO 9000 series for quality management and ISO 14001 for environmental management systems. Process-based certification endorse destinations and enterprises that have created and documented systems for guaranteeing the improvement of quality or environmental performance without stipulating any performance results other than the company´s own, and those compelled by law. In sum, management create systems for monitoring certain environmental aspects, with emphasis on internal costs saving and environmental impact mitigation, with no reference to universal standards. A certification logo is attributed to applicants for setting up the process and not for achieving a specific target. On the other hand, *performance-based* schemes certify businesses, activities, and destinations for complying with external criteria, which allow direct comparisons between businesses and destinations.

5. CONCLUSION

This content analysis revealed lessons on the diverse contributions given by the academic publications to the implementation of sustainable tourism: Studies mentioned in this article demonstrated that:

1. Up until 2016, tourism was considered as ill-equipped for the risks and opportunities posed by climate change. Tourism´s seasonality and scarcity of land-fill sites, posed challenges to public-private partnerships relating to municipal solid waste management (MSWM) system. Stakeholders were prone to oppose the implementation of environmental management practices and Tourist destinations didn't generally control carry capacity. However, there has been growing demand for positive management such as an indicator system to measure the sustainability of tourist activities along with an appeal for learning organisations and volunteer tourism groups to invest in transformative learning to improve their product. There was also a call for Governments to participate in the implementation of sustainable tourism. With respect to destination management, Tourism planners and managers have been motivated to incorporate the principles of biodiversity conservation. The increasing prices of energy and water has also encouraged the implementation of efficiency policies in hotel facilities. With carbon mitigation strategies becoming an overdue tourism industry imperative, contextual factors relating to global climate change and tourism consumption have contributed to an acceleration of sustainable policies in the last ten years.
2. This review found that *Social Reinvestment Strategy* and *Community Based Ecotourism Strategy* are not often the focus of academic studies in TSI. The main sustainability implementation instruments discussed in the UN´s reports and academic literature researched are *Community-based natural resource management* and *Tourism Certification Approach*. Strategic reorientation of growth management focuses on broad sustainability and democratic concerns whereas *endogenous renewal* is self-regulatory and involves capacity building, dissemination, networking, technical co-operation, as well as policy recommendations, and the building of consumer awareness.
3. Regulatory & legal instruments, Economic & Fiscal instruments together with Communication & voluntary instruments are examples of sustainability policy instruments, the latter involving public-private partnerships for sustainable tourism and networks. and alluding to the notion of Corporate Social responsibility in the tourism sector. Certification schemes and guidelines for responsible operations are however complementary to Regulatory & legal instruments and Economic & Fiscal instruments.
4. There is a belief that in contrast to resource management, *certification* methodology will guarantee that a certain destination or tourism business meets set standards. Yet, future research projects need to contextualise and validate those claims at regular intervals. This is because certifications raise concerns. (Bergin-Seers, 2008: 4-5) and may provide only a condensed account of the environmental impacts associated with tourist enterprises due to its subjective nature. Certifications may deprive the potential tourists of an unbiased, comprehensive assessment. Tourism ecolabelling programs may be judged as value-laden technical jargon such as the terms recycled, pollution-free, sustainable. The spread of ecolabelling schemes may boost suspicion and distrust and lead to the tourist becoming indifferent to the environmental claims. (Sasidharan, Sirakaya & Kerstetter, 2002; Goodwin, 2005; Fairweather, Maslin & Simmons, 2005; Darnall & Aragón-Correa, 2014).
5. Eight implementation instruments, listed in the abstract at the beginning of this article, have been tested and evaluated. From the perspective adopted in this article, the implementation of sustainability policies requires the main tourism stakeholders to further understand and accept the implications of climate change for tourism demand patterns. The implementation of new tourism sustainability research on standards comparability over time and across contexts can reshape both offer as well as demand

patterns in a new tourism industry, conforming with the Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

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OVERTOURISM TO ZERO TOURISM: CHANGING TOURISTS' PERCEPTION OF CROWDING POST COVID-19

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ABSTRACT

The World Health Organisation declared the novel coronavirus disease as a pandemic in March 2020. The outbreak of the novel coronavirus restricted global mobility as cities and countries started to impose complete lockdown to curtail the spread of the deadly virus. The restricted movement of people and transport worldwide resulted in a metamorphosis from overtourism to zero tourism within a short period. This study aims to analyse the effect of COVID-19 on the tourists' perceptions about crowding and how will this transition impact their decision while choosing a destination. In-depth interviews were conducted with tourists, and Nvivo12 plus was used to analyse the data. The study reveals that in the post-COVID-19 phase, tourists will be more sensitised towards crowding, and they would volunteer to avoid crowded places in the short run. Further, maintenance of social distancing norms and sanitised services at destinations will be a pre-requisite in selecting a destination. The study is a pioneer in analysing the changing tourist's behaviour concerning crowding, evolving perceptions of overtourism for the tourists which will aid the stakeholders at the destinations in developing strategies. Inadvertently, the tourists visibly reflected the need for sustainable tourism.

Keywords: Overtourism, Zero Tourism, Crowding, Post-COVID-19, Tourists' Behaviour.

JEL Classification: Z32

1. INTRODUCTION

The exuberant growth in tourism over the past decade attracted an increasing number of investors to the sector (World Tourism Organization, 2004). The year 2018 witnessed the arrival of approximately 1.4 billion international tourists in the world (UNWTO, 2018) and the target for the year 2020 was swiftly achieved in 2018 itself. This rapid unprecedented growth in tourism rendered not only economic benefits but also culminated in negative effects on the hosts (Murzyn-Kupisz & Holuj, 2020; Perkumienė & Pranskūnienė, 2019) environment (Benner, 2019; Weber et al., 2017), and on the destination itself (Benner, 2020; Weber et al., 2017). In 2019, overtourism was a hot topic amongst media and academicians. There were several special issues and debates over the ill-effects of tourism like tourismphobia and the anti-tourist movement (Jover & Díaz-Parra, 2020). Harold Goodwin in 2017 observed that the phenomenon will be a common sight in several destinations globally if tourism continues to grow unmanaged at this pace (Goodwin, 2017).

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An essential component to the concept of overtourism, the UNWTO defined carrying capacity as "the maximum number of people that may visit a tourist destination at the same time, without destroying the physical, economic and socio-cultural environment, and an unacceptable decrease in the quality of visitor's satisfaction"(Kennell, 2014; UNWTO, 2018). Overtourism became a usual sight in popular tourist destinations and therefore, the government's imperative to figure out a resolution to the contention amidst all the stakeholders (Martins, 2018). Researches in heavy numbers commenced in the subject and different management strategies and coping mechanisms were being tested for efficient management. The world is so volatile that in 2020 the entire notion of overtourism has vanished temporarily from the face of the Earth (Niewiadomski, 2020). The outburst of COVID-19 allegedly in December, brought a shift from overtourism to zero tourism. The change in ideologies of both the tourists and the locals are the most obvious predictions by scholars. Based on the evidence of the past it is safe to say that the idea of sustainability will reside (Romagosa, 2020), and the key coalescences of overtourism like carrying capacity, perception of crowding, reactions of the host community and human understanding of various fundamentals will see a change in the post COVID-19 scenario.

Overtourism was not clearly defined and characterised by the scholars even before the outbreak of COVID-19 (Benner, 2020) and with its onset, it has become especially difficult to understand the fuzzy coalescence of overtourism (Koens, Postma, & Papp, 2018). Also, since time memorial, crowd density is considered a crucial factor in the transmission of diseases (Ebrahim, Ahmed, Gozzer, Schlagenhauf, & Memish, 2020) and mass gatherings work as a playground for the viruses (Elachola, Assiri, & Memish, 2014). It is worth noting that most of the studies on overtourism and crowding have rather focused on analysing the residents' perception (Neuts & Vanneste, 2018; Kuščer & Mihalič, 2019) as locals directly face the brunt of tourism growth at a destination. However, the widely accepted definition of overtourism by UNWTO also stresses the deterioration of tourists' quality of experience, there are fewer studies that have investigated the tourists' perspective at a crowded place, especially in the post-COVID-19 phase. Thus, this study aims to add value to the existing literature on tourists' crowding perception. Therefore, the current research possesses majorly two objectives. Firstly, the authors aim to understand the effect of Covid-19 on the tourists' perceptions about crowding. Secondly, the research investigates the impact of the pandemic on the decision making of the tourists.

The authors interviewed 27 potential tourists aged between 16 to 75 years to understand the future choices of travellers whilst selecting a destination to travel post COVID-19 and their discernment about crowding and social distancing. The semi-structured interview is designed to understand whether the travellers will opt for the traditional crowded popular places or will they seek a place of peace and less population. The data are interpreted with the help of NVIVO Software 12 which is considered laborious (Sotiriadou, Brouwers, & Le, 2014) yet effective way of examining data (Zamawe, 2015; Woods, Paulus, Atkins, & Macklin, 2016).

The study allows the readers to comprehend the evolving understanding of crowding amongst the tourists. Also, the study is a forerunner in analysing the changing tourist's behaviour concerning crowding, the role of tourists in aiding to overtourism, and the role the tourists can play in developing a destination. The information is viable for the stakeholders at the destinations in developing strategies to market and manages the destination more efficiently. The current study aims to provide insights and recommendations to the stakeholders for increasing their efficacy in comprehending tourists' behaviour, particularly, in India.

2. REVIEW OF LITERATURE

The conceptual framework of the study is developed through an in-depth review of literature that provides proof on the changing perception of consumers with a lifestyle change and the effect of the pandemic on the psyche of people.

2.1 COVID-19 and Tourism

The ripple effect of COVID-19 is noticeable on the global economy ever since it was first reported on December 31st 2019 by the Chinese government to the World Health Organization (WHO). The disease named novel coronavirus or COVID-19 was declared as a pandemic on March 11th (World Health Organisation, 2020) due to its rapid spread to different parts of the world. The national authorities resorted to measures to restrict the further spread of the disease through stratagems affecting the world in ways unthinkable before. The ease of travel was considered one of the significant ways facilitating the highly contagious virus through territories (Niewiadomski, 2020). Thus, to prevent COVID-19, the governments decided to close down borders, suspend international transportation, and employ measures for social distancing (Ebrahim et al., 2020). The immobility of people brought a sudden halt to tourism. Moreover, the prevalence of social distancing measures manifested a dilemma for the world seen in the desire to "go back to normal" while rejecting the probable "new normal" (Brouder et al., 2020). The fear created by the life-threatening COVID-19 along with hedonic and utilitarian motives (Addo et al., 2020), China, and across the world based on the theory of fear appeal. We gathered published statistics, suspected, confirmed, and fatality influenced both the demand and supply side simultaneously. Therefore, the change in the consumer behaviour of tourists is obvious.

International tourism witnessed a low of 22% in the first quarter, and it is expected to fall further by 60-80% over the year (UNWTO, 2020). The UNWTO report mentioned the decline in the arrival of 67 million international tourists up to March transpired into an overall loss of US$80 billion. The repercussions are visible in the loss of several jobs worldwide with millions of livelihoods at risk. While several analysts believe in the black swan theory wherein a fixed unknown period the industry will get back to a situation similar to its earlier form (Romagosa, 2020). Several other authors believe that COVID-19 has provided a chance to reboot tourism in a more sustainable manner (Strielkowski, 2020). Although, it would be troublesome if the world goes back to its toxic attitudes considering the recurring warnings that tourism has received for its unsustainable growth. COVID-19 is supposed to challenge humanity to ponder on the unsustainability of pre-COVID travel and re-establish the tourism industry with a new model of sustainability.

The large number of restrictions imposed by the governments showcase their ability to regulate footfall according to an operational sustainability model with their will and political consensus. However, a sense of anxiety, bewilderment, and social unrest manifests a fear of tourists being carriers of the diseases, which in turn can pave the way for tourismphobia (Romagosa, 2020). The tourist movement was affected considering the health risk posed by Covid-19 even before a complete ban was imposed by the government. It could be ascertained that the future demand for tourism would witness a further change (Yang et al., 2020). Further, it is imperative to understand the coalescence of overtourism to deconstruct the changing tourists' crowding perceptions.

2.2 Overtourism and Perceived Crowding

The growth in tourists' number, which is believed to be an essential indicator of tourism growth, does not imply sustainable growth of the destination (Seraphin & Ivanov, 2020). A

critical barrier in the long-term sustainability is the short-term vision of making economic benefits. Thereby, the adversities of tourism are reflected in overtourism. It is an issue of contention when "too many tourists" converge at the same destinations during the same period (Kuščer & Mihalič, 2019; Perkumienė & Pranskūnienė, 2019). It is widely evident in popular destinations (Hughes, 2018; Bertocchi et al., 2020) and became a topical issue in the pre-COVID phase (Tiwari, Kainthola, & Chowdhary, 2020). The core issue lies with the unmanaged influx of tourists which on the one hand degrades the tourism experiences, while on the other hand, leaves a negative impact on the resident and host destinations (Oklevik et al., 2019).

A part of overtourism, crowding is a multi-variate concept that is primarily a construction of social, personal, and spatial attributes (Stokols, 1972; Ditton, Fedler, & Graefe, 1983). It is highly subjective due to the involvement of humans at different levels (Kalisch & Klaphake, 2007). Considered as a perceived generic term, crowding can be defined as a state where there are more people than perceived acceptable at a particular place (Santana-Jiménez & Hernández, 2011; Dichter & Gloria, 2017; Weber et al., 2017). Thus, earlier studies by Ditton et al. (1983), Popp (2012), and Sun and Budruk (2017) suggest that crowding can lead to both negative and positive experiences. Whereas overcrowding is a temporary state or a chronic situation that can arise in all spheres of institutions like hospitals, public transports, roads, monuments. In the tourism context, overcrowding denotes a fine line between popularity and crowding that starts impacting the tourist experience and the lives of the locals (Santana-Jiménez & Hernández, 2011). The perceived levels of overcrowding are influenced by several interlinked factors, and the major driving forces include perceived image of the destination, tolerance of an individual, and nature of tourism that the destination manifests (Padrón-Ávila & Hernández-Martín, 2019). For instance, a theme park is perceived as a place which observes a larger number of visitor and people will be more tolerant towards the crowd as opposed to a nature-based destination (Santana-Jiménez & Hernández, 2011; Eliasson & Velasco, 2018). Also, crowding is not a year-round state; instead, it is primarily based on the seasonality aspect of a destination, and therefore the reaction to crowding varies at different times (Bimonte & Faralla, 2016; Lu & Wei, 2019). Strikingly, the problems arising from both overcrowding and overtourism are similar which range from locals feeling alienated at their place, to the deteriorating experience of the tourists, and overburdening the infrastructure and natural resources (Johansson et al., 2012; Cheer et al., 2019; Namberger et al., 2019). Although commonly seen at mature destinations, overcrowding could also impact emerging destinations, cities, monuments, and even smaller events at tourist destinations (Mowen, Vogelsong, & Graefe, 2003; Das, 2014; Nazrin et al., 2019; Kainthola, Tiwari, & Chowdhary, 2021). While some destinations struggle to absorb crowds of domestic visitors, others face an influx of international visitors, and some places experience both (Lu & Wei, 2019). The popular belief is that the crowd is a regular feature in large cities but raises concern during crises leading to perpetual risks (Johansson et al., 2012). This risk is especially consolidated in the situation of a pandemic. Nevertheless, continuous efforts are made to formulate effective management plans to avoid disasters in mass gatherings and crowded places.

2.3 Carrying Capacity

Crowding and carrying capacity are two parallel concepts that are majorly related to the management of destination and tourism growth. Carrying capacity is broadly defined as the total number of tourists that a destination can support without facing the negative impacts of tourism (Simon, Narangajavana, & Margués, 2004). It is a multidimensional concept which deals with four significant thresholds, namely- environmental, economic, psychological, and perceptual (Trakolis, 2003; Zaidan & Kovacs, 2017). Different authors have defined

carrying capacity differently, and its practical definition has changed over time. O'Reilly (1986) criticised those definitions for not including the other aspects of sub-system namely economic, psychological, cultural, and social despite their relative importance (Simon et al., 2004). The author opined that there could not be a universal characterisation of carrying capacity since it differs from one situation to another and is diverse in terms of tourists' typology, speed of tourism development, characteristics of destination, etc. In the context of destination management, Sharma (2016) posits that carrying capacity cannot be applied directly as a management tool. Earlier, Mc Cool and Lime (2001) had criticised the concept as innate which is based on the scientific theory of finding the 'magic numbers', quite contrary to the decision-making or planning frameworks like Limits of Acceptable Change (LAC) and Visitor Experience and Resource Protection (VERP). The benefits of adopting LAC were reported by Simon, Narangajavana, and Margués (2004) stating that it can be easily converted from conceptual to operational terms as opposed to carrying capacity. In the early era of mass tourism, Canestrelli & Costa (1991) emphasised that the concept of carrying capacity be centred on the quality of tourists' experience, but if the tourism destination is a city, then considering the quality of life of residents is ideal. Nevertheless, the quality of tourists' experience is based on several idiosyncratic factors such as preference, tolerance, and expectation from a destination etc. which are necessary to be measured.

2.4 Expectancy Theory

The expectancy theory of motivation was developed by Vroom which analyses the reason behind an individual's behaviour. The theory is largely based on perceptions and asserts the connotations that individuals make towards the expected outcome (Vroom, 1964). This theory is utilised in analysing the tourists' perception of crowdedness at various destinations (Vaske, Donnelly, & Heberlein, 1980; Arnberger & Brandenburg, 2007). Lee & Graefe (2003) emphasised that tourists' expectations are generated based on their experience as well as from information attained before visiting a destination. After assessing the information and integrating it with different factors such as quality of service, convenience, price of the package, etc., the choice to visit a specific destination is made. Yeh, Wai Aliana, & Zhang (2012) mentioned that an individual's personality, socio-demographic, cultural traits, etc. affect the process of evaluating the information about a destination. Thus, every individual has different expectations from the same destination or the services offered at a destination. In the context of tourists' crowding perception, several researchers have analysed the effect of different factors such as gender, cultural norms, motivations, nationality, etc. in shaping their expectations of a destination (Jin & Ruban, 2011; Maruthaiah & Rashid, 2014; Sun & Budruk, 2017). Further, studies have analysed the crowding perception with the help of photographs by asking tourists about the difference between an expected crowd and actual crowd during their visit (Kalisch & Klaphake, 2007; Bell et al., 2011).

3. METHODOLOGY

A qualitative approach was employed to explore the tourists' perception of crowding after the outbreak of COVID-19. As the research area is novel, adopting the qualitative method was considered suitable to provide in-depth knowledge and valuable insights on the subject (Vaismoradi et al., 2016; Parsons et al., 2019). Thereby, the study is exploratory in nature.

3.1 Data Collection

For this study, the respondents were selected based on their familiarity with the authors. The respondents were characterised as avid travellers who travel at least three to four times a year. Accordingly, a list of 73 people was organised, and personal e-mails and messages were sent asking for their participation in the study. Out of these, 27 people agreed to participate in the study hailing from different states of India. The small sample size is appropriate for the qualitative study and adequately answered the research problem (Byrne, 2001).

Purposive sampling was used for the interview (Denzin & Lincoln, 2000) to form a homogenous data set of respondents from both urban and rural areas comprising of different age groups and gender (Guest et al., 2006). This type of sampling is frequently used in qualitative studies (Etikan, 2016). After informing the objective of the study, semi-structured in-depth interviews were conducted via video and phone calls. Every interview lasted on average for 40 minutes and respondents were asked 14 questions. The questions were open-ended (Saunders, Lewis, & Thornhill, 2009) that were carried out in a form of discussion like naturalistic manner (Griffee, 2005; Chima, 2020) for allowing meaningful responses. The interviews which were primarily in English were recorded with due permission of the respondents and were translated into transcripts manually to avoid any error. The first section included five questions that aimed to know the general awareness of respondents regarding overcrowding, crowding, and overtourism. The second section was related to the crowding perceptiveness amongst respondents and included three open-ended questions aimed to understand if their perception of crowding changed after COVID-19 outbreak, will the crowd play any role in choosing a destination for travel, and how will they manage to travel in the post-COVID-19 phase? These questions were adapted from existing literature to suit the research objectives of this study (Manning & Valliere, 2001; Mowen et al., 2003; Popp, 2012). The last section is comprised of 6 questions primarily to find out the factors which will be considered while selecting a destination in the post-COVID-19 phase. These interviews were conducted for 20 days from 8th June to 28th June 2020.

Member checking was then completed with the participants reviewing and confirming the accuracy of the transcripts with additional comments wherever necessary (Birt et al., 2016). Table 1 shows the respondents' profiles in brief.

3.2 Data Analysis

After collection of the data, verbatim transcription, familiarisation with the data, and multiple reading, the text was then coded, their relationship evaluated, patterns and commonalities were studied and themes identified (Alhojailan, 2012; Walters, 2016; Nowell et al., 2017) on both semantic and latent levels (Braun & Clarke, 2006). The developed themes were then studied and evaluated concerning to the existing frameworks of overtourism and crowding before formalising any proposed constructs (Schutt & Chambliss, 2013). The authors adopted thematic analysis to analyse the data as it enabled the investigation of individual experiences in objective settings (Percy et al., 2015). Scholars like Holloway and Todres explicated that the 'thematising meanings' are amongst the few shared generic skills across qualitative analysis (Holloway & Todres, 2003). It is considered the most efficient tool in the interpretation of written texts, especially interview transcripts (Hannam & Knox, 2005; Walters, 2016) by unravelling inherent cultural meanings (Walters, 2016). The data were analysed with the help of qualitative data analysis software, Nvivo 12 plus. Though the use of the application for analysis is labour intensive (Sotiriadou et al., 2014), it positively contributed to the efficiency of the analyses by adding rigour to the study (Alhojailan, 2012). The results from the thematic analysis regarding these concepts are discussed in the

next section along with the findings from the data are supported by direct quotes from the respondents to support the results.

Table 1. Respondents' Profile

Respondents' Profile		
Age of Respondents	*No. of Respondents*	*%*
16-24	6	22.2
25-40	14	51.9
41-60	5	18.5
61-75	2	7.4
75 and above	0	0
Gender	*No. of Respondents*	*%*
Female	10	37.0
Male	17	63.0
Other	0	0
Marital Status	*No. of Respondents*	*%*
Not married	16	59.3
Married	11	40.7
Prefer not to say	0	0
Occupation	*No. of respondents*	*%*
Student	10	37.0
Service class	9	33.3
Own Business	6	22.2
Retired	2	7.4
Education	*No. of respondents*	*%*
Matriculation	2	7.4
Under-graduate	14	51.9
Post-graduate	10	37.0
Above post-graduate	1	3.7

Source: Own Elaboration

4. RESULTS AND FINDINGS

4.1 Awareness about the Term Overtourism

A total of 18 respondents were aware of the term 'overtourism' and their understanding emphasised that 'too many tourists' are the major cause of this issue. Various studies have focused on analysing the residents' perception and concerns regarding overtourism (Marsiglio, 2016; Kuščer & Mihalič, 2019; Rasoolimanesh & Seyfi, 2020; Bertocchi et al., 2020) showing how different the preferences of tourists towards crowding fail to demonstrate the tourists' understanding of the phenomenon. During the course of the interviews, the respondents used the terms 'overtourism' and 'crowding' synonymously. Thus, it is found that tourists don't differentiate between these two notions and even the current studies

have largely failed to acknowledge the differences and similarities between crowding and overtourism. Some of the statements given by tourists are:

> "Too many people at a particular destination or place"
> [Respondent 4]
> "Overtourism is a term which is related to a large number of visitors at a time which is not good for the particular destination the resources get overused and wasted at the same time"
> [Respondent 16]

Peeters et al. (2018) applied the concept of overtourism to four kinds of destinations, i.e. rural, urban, and coastal & islands, and heritage attractions. The respondents in this study related the phenomenon with places like Italy, Barcelona, and Shimla (India) as destinations affected by overtourism. These destinations are significant attractions of coastal, winter, and heritage character, supporting the pragmatic application of the study conducted by Peeters et al. (2018).

4.2 Crowding as a Negative Emotion

Figure 1 portrays the word cloud of the top words the respondents associated with crowding. Words like traffic jams, packed, congestion, claustrophobic, pollution, and noise were largely associated with the negative connotation of crowding. About 24 respondents related crowding to discomfort and 'being intolerable'. The words expressing the feelings of 'annoyance', 'unsafe', and 'uncomfortable' were analogous with crowding. Thus, the findings of Popp (2012) and Sun and Budruk (2017)the way tourists experience high tourist densities is still a neglected topic in urban tourism research, whereas it is one of the most frequently studied subjects in outdoor recreation. In this article the crowding concept is transferred to urban tourism. The study is based on qualitative in situ interviews using Florence, Italy as an example. The interviews reveal that negative crowding (i.e., a feeling of stress related to good crowding which proliferates positive feeling) could not be substantiated in this study. The word crowding had a negative connotation per se given the pandemic scenario.

Furthermore, few of the previous studies have reported an insignificant relationship between gender and crowding perception (Jin & Pearce, 2011; Rasoolimanesh et al., 2017). The findings of our study correlated with Rasoolimanesh et al. (2016) and Zehrer & Raich (2016) who analysed that females feel more uncomfortable in the crowd than males. The female respondents shared incidences of physical harassment at crowded places.

Figure 1. Words Associated with Crowding by the Respondents

Source: Own Elaboration

4.3 Changing Tourists' Perception of Crowding Post-COVID-19

4.3.1 Pre and Post COVID-19 Perceptions

The notion of crowding before COVID-19 was such that it largely affects the famous tourist destinations (Dichter & Gloria, 2017; Namberger et al., 2019). About 17 respondents believed that famous places are likely to attract a crowd in general. This opinion is supported by Joppe (2019) who emphasised that destinations listed on Lonely planet or included in blogs titled 'must visit in your lifetime' plays a key role in attracting a crowd. The respondents further stated that earlier (i.e., before the pandemic), the number of people at a destination did not bother them significantly. This has two underlying assumptions, i.e., tolerance limit of tourists and their preference. Jin and Pearce (2011) reported that when acceptability levels lie between tolerance and preference, the tourists' perception of a crowd is lower. However, the tolerance limits might vary amongst tourists belonging to different parts of the world, and thus, making crowding perception a multidimensional socio-psychological construct (Kim, Lee, & Sirgy, 2016). For instance, one of the respondents said:

> "Earlier crowded destination doesn't affect me as much as it affects me now. As an Indian, I had never thought that it would have been so crucial for us to maintain social distancing practice."
> [Respondent 22]

Electronic and social media plays a vital role in creating a destination image and influencing people to visit a specific destination. Thus, a change in the tourists' perception of a destination in both pre-COVID-19 and post-COVID-19 phase would have a significant impact on the demand and supply sides of the tourism system. The below mentioned response demonstrates both the acceptability of crowding while travelling (pre-COVID-19) and the role of media and destination authorities in creating awareness (post-COVID-19).

> "Honestly speaking, before the spread of the coronavirus, I think I was not sensitive towards crowding affecting me directly. But now I am becoming more aware of its problems with the help of media and national authorities (sic.)."
> [Respondent 20]

The respondents recurrently recalled their experiences of long queues, high prices of accommodation, unavailability of parking spots, traffic jams near famous hotspots, etc., especially during the peak season.

4.3.2 Factors to be Considered in Travelling Post-COVID-19

The majority of the responses showed that the outbreak of the pandemic would push people to think beyond their usual decision-making state while choosing a destination. For instance, Padrón-Ávila and Hernández-Martín (2019) analysed a total of 13 potential determinants that attract tourists to crowded places. These include theme parks, convenience to travel, weather, health tourism, environment, natural safety, etc. These could be considered as determinants of the pre-COVID-9 phase. However, the post-COVID-19 responses demonstrate the importance of health and safety from infection while preparing to travel. This correlates with the study conducted by Wen et al. (2020). A respondent replied:

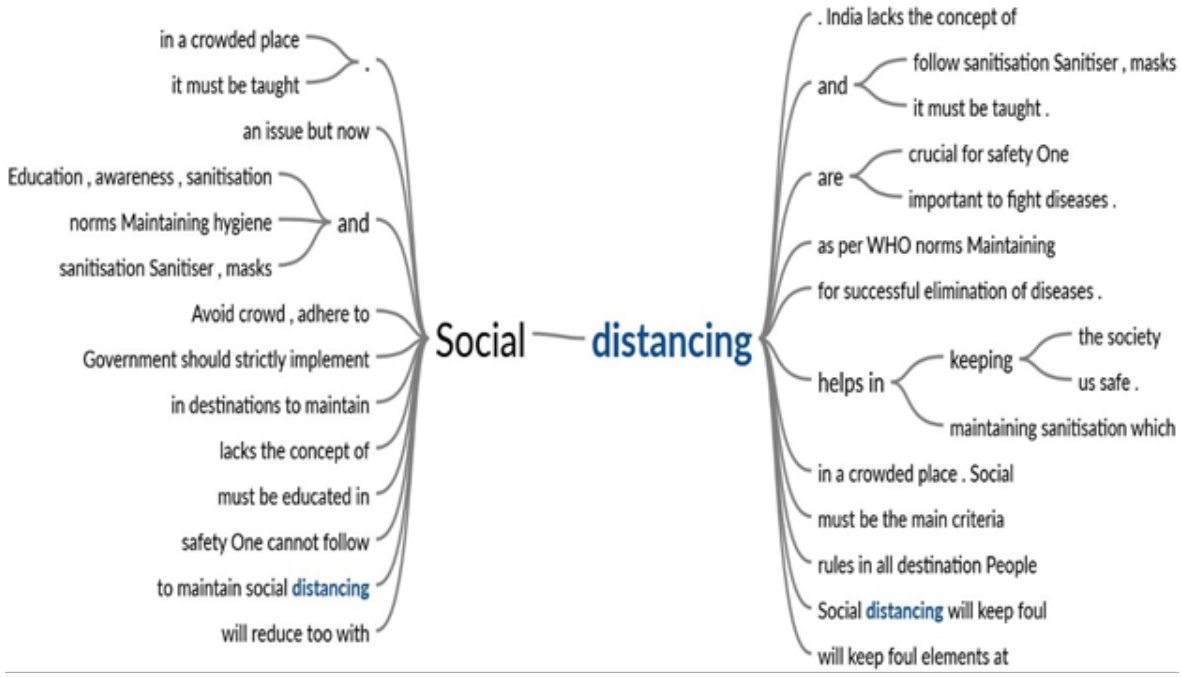
> "Surprisingly, now, I will rather look at the health and wellness status of a destination which I earlier did not consider. For instance, how clean, sanitised and hygienic services are being offered by the destination. If I am not satisfied with the online reviews, I am opting out of"
> [Respondent 1]

Though all the respondents emphasised the need for safety and hygiene while travelling, the main factors that would be considered have not changed much such as the price of the package, accessibility to the place, and weather. However, an additional component was added, i.e., the place should be less crowded. For instance, when asked this question, a respondent replied:

> "Distance, whether it is accessible through private transport, the area's population and scenic beauty and it will be a freebie if the destination has some adventure fun activities, provided it is not open for very large general public"
> [Respondent 2]

The text search query of the word distancing, as shown in Figure 2 reveals that distancing is naturally linked with social distancing, and it has become a corresponding necessity to survival.

Figure 2. Text Search Query of the Word 'Distancing'



Source: Own Elaboration

4.3.3 Will the Crowd Discourage Travelling in the Post-COVID-19?

The respondents linked COVID-19 and crowding, where the risk of infection is high due to the poor standards of hygiene and absence of social distancing. The outbreak of global health issues has made people more attentive to hygiene which indicates that perception of safety and hygiene will be a significant factor in travel decisions (Nazneen et al., 2020; Ozili & Arun, 2020). On asking if the crowd would discourage them to visit a destination, 22 respondents agreed, whereas 5 of them said that it is too early to say anything. It is assumed that the pandemic is unprecedented and travelling to crowded places would be unsafe in the present scenario. In the same context, a female respondent replied:

> "Firstly it's always an uncomfortable situation where ever there is crowding, and secondly, in the present COVID-19 situation it is unsafe too. So for me, safety is going to be the priority."

Within the context of Haiti, Seraphin (2018) emphasised the need to improve destination image in the recovery phase, especially after a destination is affected by any conflict or disaster. Thus, it is advisable for the destinations which had a larger number of coronavirus cases such as Mumbai, Delhi, and Tamil Nadu, etc. to re-work their destination image in the post-COVID-19 phase. The creation of a safe travelling environment, and incorporation of factors related to health, hygiene and wellness would be appreciated by potential travellers. A female respondent shared her perception of post-COVID-19 travel plans:

> "Now I might not travel to the regular popular monuments or places and rather opt for something where there is a lesser crowd. Or probably a destination which has branded itself as covid-19 free and is strictly following precautionary measures"
> [Respondent 3]

4.4 Suitable Measures Adopted to Avoid the Crowd

In the post-COVID-19 phase, the respondents candidly replied that they are following the governments' regulations regarding travelling activities, and avoiding travel as far as possible. In this dynamic situation, about 6 respondents said that they would avoid traveling till the time vaccine is available or traveling becomes safe. About 17 of the total respondents said that they would avoid going out to crowded places in the first place, and if travel is mandatory, they would maintain social distancing norms, and follow the instructions laid by the authorities at a place. This practice falls under the typology of behavioural coping mechanism related to crowded places and is termed displacement (Manning & Valliere, 2001). As per Manning and Valliere (2001), displacement is involuntary and relatively caused by adverse stimuli. It is observed in our study that the decision to displace would rather be voluntary among potential tourists. When asked about suitable measures that would be taken in the post-COVID-19 phase, a male respondent answered:

> "I may not prefer to travel until next year or until the vaccine is out. Even if I happen to travel for something important, I will ensure to minimise physical contact with people around me."
> [Respondent 17]

The displacement tactic is not only limited to the place visited but also with its core components. About 10 respondents emphasised that they would avoid eating out and would choose a take-away service if possible. Even if they are staying at hotels, they would rather skip buffet services for meals. A male respondent within the age bracket of 16 to 24 replied:

> "To be precise, I will avoid having food at buffet services while my stay in a hotel for some time. I will try my best to maintain less personal contact with others by using less public transport, and would choose to have tech-based transactions while travelling."
> [Respondent 13]

It is worth noting that Nickerson (2016) presented four categories of commonly practiced coping behaviour amongst tourists. These are: a) changing the time of day or season in which to visit; b) changing their attitude/perception about crowding; c) going to less popular locations in the same area; and d) not visiting the area altogether. The author emphasised that the fourth coping behaviour mechanism is least adopted by visitors. However, the pandemic has brought the adoption of the fourth coping mechanism widely in the short run.

5. THEORETICAL IMPLICATIONS

5.1 Perceived Crowding Factors and Expectancy Theory

The present study adds value to the existing paradigm of tourists' crowding perception and their expectations from a destination in the post-COVID-19 scenario. The study reports change in crowding perception in three aspects. Firstly, the pre-COVID-19 studies reported the impact of spatial crowding in impacting the tourists' perception of crowding such as traffic, lack of space to carry out activities, etc. (Kim et al., 2016; Sanz-Blas, Buzova, & Schlesinger, 2019). However, in the post COVID-19 phase, human crowding is likely to have an adverse impact on tourists' perception of crowding at a destination. The larger the number of humans, the more the level of perceived crowding. Secondly, the situational characteristics of a destination will play a major role over the personal and behaviour of others' characteristics in tourists' crowding perception. As mentioned by Kyle, Graefe, Manning, & Bacon (2004), three factors influence the crowding experience of individuals namely, personal characteristics, behaviour of others, and situational or environmental factors. The situational factors majorly include the number of tourists, ease of accessibility to the destination, seasonality, availability of services, design of space, and other physical characteristics of the destination visited (Neuts & Nijkamp, 2012; Yeh et al., 2012). In the post-COVID-19 phase, the respondents would acknowledge the situational factors in all the components of a destination. For instance, the increased role of safety, hygiene, accessibility, design of space, management of sites, traffic control, regulations for site management, etc. would be crucial factors in the travelling decision process. And lastly, a change in the behavioural coping mechanisms by tourists would be evident in the post-COVID-19 phase. Both inter-site (i.e. shifting within one recreational setting) and intra-site displacement (i.e. shifting from one period to another) would be common parlance but this would be a voluntary decision of tourists. Unlike emphasised in pre-COVID-19 studies that displacement is involuntary and is a result of adverse stimuli (Shelby et al., 1988; Moyle & Croy, 2007), the tourists in the post-COVID-19 phase would adopt displacement coping behaviour whenever they encounter a crowd. Likely, tourists might not prefer to visit a destination wherein the destination management authorities are incapable of ensuring social distancing norms and providing sanitised services. Therefore, the perceived definition of crowding is likely to change due to the change in the tourists' behaviour and their expectations of the services offered at a destination.

5.2 Tourists as Prosumers

The research acknowledges the role of tourist's decisions in negatively affecting the destination, aiding the constructs of overtourism, and sub-consciously contributing to crowding. The research considers tourists as inadvertent prosumers to crowding and overtourism, whereby the manifestation of activities is evident in the destination. The term 'prosumer', was first coined by Alvin Toffler in 1980, to recognise the already prevalent culture of individuals concurrently working as producers and consumers for products or services (Humphreys & Grayson, 2008). Research on tourists as prosumers is its incipient stage where not much attention has been provided to the subject other than referring to the creative tourist in particular as a prosumer (Messineo, 2012; Ritzer et al., 2012). The process is mostly discussed based on conscious development of a product with due assistance from the consumers through co-creation (Campos et al., 2018) or 'prosumption' (Carvalho, Costa, & Ferreira, 2019) that transforms the consumers into producers of the final product or experiences they consume". As a deviation from Toffler's definition of "prosumer" which addressed them as attentive customers (Ritzer et al., 2012), this research propounds on the

accidental role of the tourists in contributing to overtourism in a destination. Prosumption is recognised to leave a direct influential relevance in the economy (Ritzer et al., 2012), however, since tourism is a people's industry (Goh & Lee, 2018), the implications are visible on the people and on the destination as a whole. Therefore, as a prosumer the tourists can constructively contribute towards sustainability (Guilarte & Quintáns, 2019) by ensuing responsible behaviour at destinations with due education and awareness (Chowdhary, Tiwari, & Kainthola, n.d.).

6. PRACTICAL IMPLICATIONS

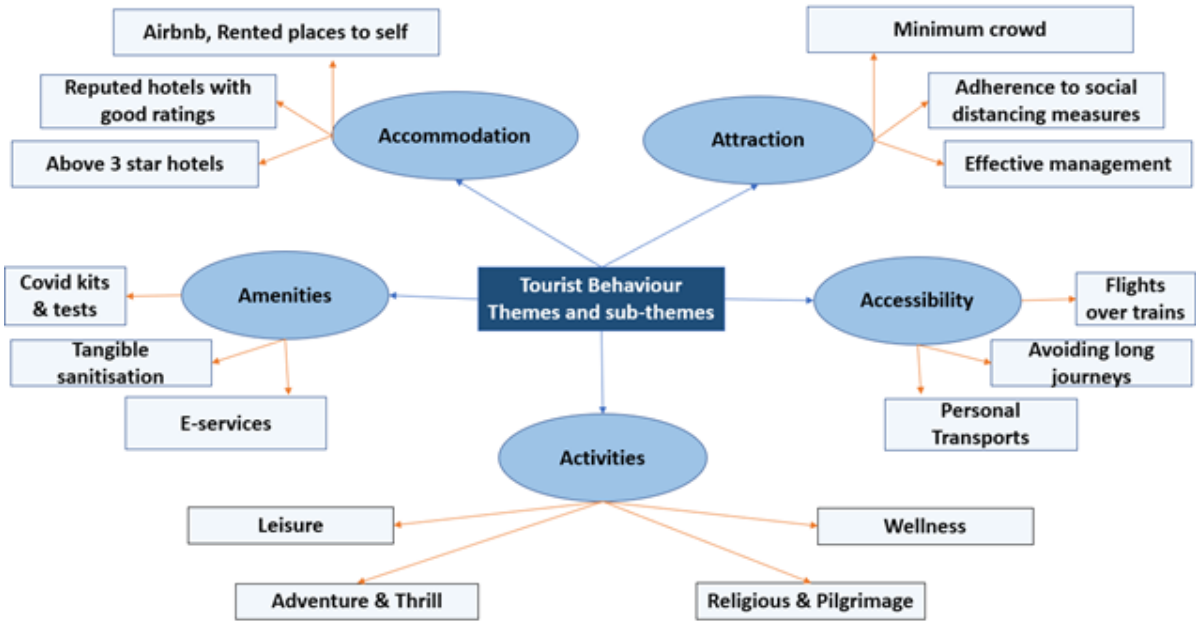
6.1 Managing Destinations in the Post-COVID-19 Phase

The change in perception of crowding after the COVID-19 outbreak would likely affect the management strategies of any destination. The respondents' frequent emphasis on the maintenance of social distancing highlights the significance of better management policies at tourist destinations in the post-COVID-19 phase. Visitor Management techniques are crucial for every destination for monitoring the tourists' flow and ensuring that locals and destinations are not affected (Scuttari, Isetti, & Habicher, 2019). It is likely that the concept of carrying capacity as the 'maximum limit that a destination can possess' would be an outdated mechanism to monitor the tourism system at a place (Sharma, 2016). Rather, adoption of other techniques such as limits of acceptable change (LAC), visitor impact measurement (VIM), visitor activity management process (VAMP), Visitor Environmental and Research Protection (VERP), etc. is suggested to be more effective. Managing the flow of tourists, traffic, easy movement of locals while ensuring that the ecological environment is least affected should be a pre-requisite in the post-pandemic phase. For instance, the idea of 6-feet tourism (Lapointe, 2020) or encircling on floors for ensuring that tourists follow social distancing at sites, pre-registration or electronic tickets/bar codes, etc. could be considered potential steps in the new normal scenario. Therefore, the implementation of these techniques would ensure re-establishment of the pillars of sustainable tourism growth at tourist destinations in the long-run.

6.2 Incorporating Hygiene in 5 A's of Tourism

The respondents in the study emphasised the need for hygienic and sanitised services during their visit and stay at any destination. This correlates with the study done by Naumov, Varadzhakova, and Naydenov (2020) who indicated that the sanitation and cleanliness at the accommodation establishments are the focus areas of the tourists' preferences. For instance, the American restaurant chain Ruby Tuesday said that it regained 30 per cent of its lost customers by adopting appropriate hygiene measures such as providing clean uniform to the restaurant's staff, sanitization, and routines of disinfecting etc. In the hospitality context, the Hilton hotels have also announced the 'Hilton CleanStay' program in April 2020. This program comprises features like a contactless digital room key, and Cleanstay Room Seal as an additional layer of safety assurance for its guests. This confirms that the guests' room is not accessed after been cleaned by the housekeeping department (Sanand, 2020). Likewise, the tourism department of the Meghalaya state located in India has released a Standard Operating Procedure (SOP) for the entry of tourists at famous attractions. It would be implemented to reduce the risk of COVID-19 transmission in the state (Sentinel Assam, 2020). Even though various destination across the world is gearing up to offer an exquisite experience to potential tourists in the new normal scenario, the question of whether the cost of sanitised services falling on tourists needs to be inquired.

Figure 3. Identifying Themes and Sub-themes of Tourist Behaviour Post Covid-19



Source: Own Elaboration

6.3 Application of Demarketing to Manage Tourist Flow

Demarketing is the new marketing technique of the 21st century (Lawther, Hastings, & Lowry, 1997). The authors propose that the application of demarketing in the tourism system in the post-COVID-19 phase would be a useful step towards the development of quality tourism practices. For effective implementation of demarketing in the tourism system, Tiwari, Kainthola and Chowdhary (2020) suggested a marketing mix framework for demarketing the various components of a destination such as cutting down the promotion of highly populated sites, increasing the ticket prices, limit on the number of tourists, etc. A combination of these strategies could be adopted by monuments and cities to manage tourists' flow.

6.4 Utilising Technology for Sustainable Growth of Tourism

The reported issues of overcrowding and overtourism were largely related to the ill-management of tourism growth (UNWTO, 2018), the pandemic has offered an opportunity to redesign and rethink the destination management perspective. Recent studies have proposed it is the right time to centre tourism activities on providing benefits to the locals (Lapointe, 2020). The COVID-19 outbreak has significantly highlighted the advancement in internet utility and e-activities in every economic sector (Chen & Li, 2020). The increased use of digital media platforms, artificial intelligence applications, and advanced communication and technology could be used for collaboration between government, tour operators, and local stakeholders at a large scale. The use of robots and robotic artificial intelligence is also considered an innovative step to manage tourism activities in the post-COVID-19 period (Zeng, Chen, & Lew, 2020). For instance, the Indian-based ZafiRobots has developed a robot that is deployed in some garment shops in the state of Tamil Nadu. The robot alerts if any visitor in the shop is not wearing a mask or not maintain social distancing, it dispenses sanitiser and performs a thermal screening function while anyone enters the shop. Moreover, it keeps track of the number of people entering the shop at a time (Ahuja, 2020).

The transition in tourists' behaviour requires an equal transition in the offering of services at destinations. Therefore, to pave the way towards smart tourism destinations (Tiwari, Kainthola, & Chowdhary, 2020), stakeholders' cooperation along with the incorporation of technology in the tourism production and consumption process would yield efficiency. Tourist education and effective marketing strategies also play an important role in improving the destination's image affected by disaster or a crisis (Séraphin et al., 2019). The consistent advertisements and reminders by the government to maintain physical distance and cleanliness have developed enduring habits among people. The use of sanitiser, wearing masks, and maintaining distancing has become muscle memory for people. Therefore, this research aids the destination management organisations in understanding the expectations and perceptions of tourists related to crowding and frame strategies to ensure better visitor management at famous tourist sites.

7. CONCLUSION

The study analysed the change in tourists' perception of 'feeling crowded' in the post-COVID-19 phase. It was found that more than half of the respondents were aware of the overtourism issue and identified some destinations like Barcelona, Shimla with it. However, using the terms crowding and overtourism synonymously highlighted the complexities between both issues. Further, crowding is majorly perceived as a negative feeling for tourists as they denoted the term with congestion, claustrophobic, traffic jams, unhygienic and prone to disease, etc. and it might not likely alter in the post-COVID-19 scenario. The study also reported that women are more likely to perceive crowding as a negative emotion than men. A significant number of respondents reported that crowding or crowded places didn't affect them earlier but after the rise in the COVID-19 cases in the country, they are avoiding travel to crowded places to a large extent. There are certain factors which they would consider important while travelling shortly such as the preference for hygienic and sanitised services, and maintaining social distancing norms. The respondents mentioned that they would either choose staycations or postpone travelling till the time vaccine is discovered to combat the ill-effects of the virus.

The change in consumer behaviour due to the fear of COVID-19 would bring a shift in the tourism supply-side correspondingly. Tourism and hospitality experiences being mostly abstract, the service providers will have to put in more effort to demonstrate that they are conscious of hygiene, safety, social distancing, and other norms. Based on this, the accommodation sector might increasingly play on the idea of hygiene, the restaurants would strategize marketing to portray their setting as clean and safe, and the destination management would prioritize managing visitors by ensuring that social distancing measures are followed. Certainly, the stakeholders have got an unprecedented opportunity to reboot the tourism sector more sustainably and responsibly manner (Strielkowski, 2020). The research lays out the evolution in tourist consumption behaviour with the onset of the pandemic that has seemingly caused fear as well as awareness regarding the environment. Its high time that the 'old normal' needs be restructured with the changing circumstances (Nepal, 2020; Romagosa, 2020). However, if they are made aware of the consequences of their irresponsible conduct that could have adverse impacts on the destination and the hosts, the 'new normal' will be the 'right normal'.

Future studies can focus on analysing the safety perception of tourists in the post-COVID-19 phase, comparison between change in travelling behaviour among a different generation of travellers, the role of tour agencies in minimising the risk perception of tourists, utilisation of technology at famous places to monitor crowding, etc.

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CONTEXTUALING A TOURISM DEVELOPMENT ALTERNATIVE FOR ARGENTINA: A PROPOSAL FOR COMMUNITY BASED DIFFUSED TOURISM

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ABSTRACT

This conceptual paper proposes using a new Community-based diffused tourism (CBDT) model, which is based on the consolidation of Community-based tourism and '*Albergo diffuso*' (AD). CBDT is a model of tourism development that is dispersed over a given territory. It consists of an assemblage of hospitality facilities, social cohesion, and commonality of aspirations to empower disadvantaged communities and develop local economies for profit-sharing tourism. The Social and Solidarity Economy of Argentina presents possibilities upon which CBDT can be formed. This opens up chances to describe culture and community in local terms. The CBDT is a confluence of minds, services, resources, and capacities serving a common purpose for the common good. The CBDT model has the characteristics of ownership/control residing with the local community, is geographical/space-specific, and boasts several typologies, such as neighbourhood-based CBDT, street-based CBDT, and 'building'-based CBDT involving inhabited and uninhabited spaces.

Keywords: Tourism, Community-based Tourism, *Albergo Diffuso*, Argentina, Community Development.

JEL Classification: L83, Z32, Q01

1. INTRODUCTION

The tourism sector is essential for economic growth and development for many countries (Duro & Turrión-Prats, 2019). Some data show the considerable contribution of the tourism sector to the economy. For instance, in 2017 there were 1,326 million international tourist arrivals, and the international tourism sector was ranked third after chemicals and fuel as a critical export sector reaching US$ 1.6 trillion, or US$ 4 billion a day on average (UNWTO, 2018a). Notably, tourism growth has shown to be resilient even in moments of crises and shocks, as presented by terrorist attacks and events such as new diseases (Frangialli, 2005).

In Argentina in 2016, the tourism sector sustained over 1.6 million jobs, either directly or indirectly, exceeding banking and financial services, mining, and automotive manufacturing (World Travel & Tourism Council – WTTC, 2017). Tourism growth in Argentina is evident by establishing various travel agencies, restaurants, and artisanal shops and creating new jobs reflecting a burgeoning entrepreneurial culture (Helms, Rodríguez, de los Ríos & Hargrave, 2011). The propensity to create jobs in large quantities, often requiring menial skills, makes tourism an attractive sector in which to channel resources for both immediate and long-term impacts affecting the individual and the community.

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In tourism, as in other sectors, the benefits have tended to go to society's wealthier sections, thus directing capital accumulation "up the hierarchy" (Britton in Pearce, 1989: 94). From a microeconomic perspective, research shows that employment in the sector is more precarious than in other sectors because of poor working conditions, which impacts income distribution negatively (Porto & Espinola, 2019). Its positive impacts depend on "which model of tourism development is chosen" (Saayman, Rossouw, & Krugell, 2012: 463). For example, traditional tourism, namely, conventional mass tourism, is not geared to consider equitable distributive postures (Saayman & Giampiccoli, 2016). Therefore, tourism is not always favourable to local people. In many countries, the growth of tourism is linked to neoliberal policies which promote the private property, free markets, and free trade dogma - making trade liberation and privatisation reinforce each other - with local people losing their land and resources in the process (Marx, 2018). To overcome such problems in the sector, the equitable distribution of its benefits requires the execution of radical measures that disrupt the *status quo*. Business will not achieve that end but will perpetuate benefit injustice. As such, the eradication of poverty 'should not be regarded as 'charity' – the domain of 'bighearted' pop stars or 'enlightened' bureaucrats' (Chok, Macbeth, & Warren, 2007: 160), but instead should involve a restructuring of society with equitable distribution of power, control, resources, knowledge, capacities, and benefits for a just outcome (Saayman & Giampiccoli, 2016). It is acknowledged that free markets are not concerned with equitable distribution and re-distribution of resources, knowledges, and capacities. Inherently, free markets support a 'winner take all' mentality irrespective of the baseline endowments between parties and their circumstances.

Thus, there is a consensus that there is a need for a new inclusive model of growth and development that strives to attain high living standards for all (WEF, 2018). The 2012 United Nations Conference on Trade and Development in Doha recognized the importance of sustainability to achieve that ideal (UNWTO, 2018b). Beyond this, inclusive growth and creating quality jobs is a preoccupation of governments worldwide (Guevara Manzo, 2018: no page). The need to involve local communities in tourism development is largely embraced in literature (Nagarjuna, 2015; Rasoolimanesh & Jaafar, 2016; Salleh, Shukor, Othman, Samsudin & Idris, 2016; Burgos & Mertens, 2017), and sustainable socio-economic change can be accomplished when local people derive the most benefits from investment opportunities in tourism that prioritise them (Mogale & Odeku, 2018). It must also be noted that micro, small, and medium enterprises (MSMEs) are important for attaining inclusiveness in tourism (San Andres, Cheok & Othman, 2016).

Community-based tourism (CBT) is an alternative form of tourism development that emerged in response to the negative impacts of conventional mass tourism (Cornelissen, 2005; López Guzmán, Sánchez-Cañizares & Pavón, 2011; Gadi Djou, Baiquni, Widodo & Fandeli, 2017). The concept of *Albergo Diffuso* (AD, meaning scattered/diffused/spread hotel) was born in 1982 as a consequence of the devastating 1976 earthquake that destroyed extended parts of various locations in the north-east of Italy such as Friuli Venezia Giulia, intending to rebuild small centres after the earthquake (Dichter & Dall'Ara, n.d). The AD model was then sequentially "engineered by Mr. Giancarlo Dall'Ara" (Dichter & Dall'Ara, n.d: 4). CBT and AD have both similarities and differences (Giampiccoli, Saayman & Jugmohan, 2016). This article uses the new concept of community-based diffused tourism (CBDT) (Giampiccoli & Mtapuri, 2020a), which consolidates CBT and AD to facilitate the inclusion of local community members in the tourism sector through control of enterprises and benefit-sharing.

This article contextualises Argentina's historical and current background to identify possible alternatives for tourism development that foster greater community involvement and benefits. This new proposal should be considered in any locality where local traditions

and characteristics make it a potential tourism development option. In this context, Argentina is used as an example that can facilitate CBDT because collaboration amongst people is historically rooted and emerged due to specific local factors that favour this new model. This article is desktop research. Data was combed from internet sources and other documents to contribute to the body of knowledge on the relationship between tourism and development. We posit a new CBDT model contextualised within the Argentinian scene. The article includes a literature review related to people and worker cooperation in Argentina, CBT, AD, and CBDT.

2. LITERATURE REVIEW

Argentina's history is imbued with a rich tradition of cooperative organisations that include worker cooperatives (Chrisp, 2017). Argentina is not alone as a solidarity economy. These economies are also strong in the 'Global North' in countries such as Spain (see, for example, the famous Mondragon Cooperative), Italy, Canada, Germany, and United States (Rizek, Georges & Freire da Silva, 2014). Evidence shows the resilience of cooperative workplaces as revealed during Europe's economic crisis with worker recovered companies (WRC's) such as Vio.me in Thessaloniki and Ri-Maflow, a recycling plant in Milan (Ozarow & Croucher, 2014).

The economic crisis of 2001 played a big part in reviving the cooperative and solidarity economy. The current COVID related socio-economic crisis provides an opportunity for the reorganisation and revival of cooperatives in new contexts. During that 2001 period, about 4000 companies were declared bankrupt, Workers, inspired by desperation and the weakening of the subservience to power and authority entrenched in Argentina's history, started taking over their shut down factories and restarted production (Rizek et al., 2014). Despite the many failures in 2014, there were about 300 factories that were owned and managed by the workers in that country (Rizek et al., 2014). Regardless of factors such as the markets, financial pressure, attempts to co-opt, demobilize and depoliticise the Argentinian movement, Argentine WRC's have survived and retained the value of worker self-management and equity (Ozarow & Croucher, 2014). Argentina shows that, alongside 21st Century capitalism, there is room for worker self-management that can impact social relations, policy, and wealth distribution to constitute an alternative 'moral economy' that disrupts current industrial relations (Ozarow & Croucher, 2014).

The rediscovery of the Social and Solidarity Economy (SSE) in Argentina via movements such as WRCs and other cooperative attempts "shows how those most affected by the economic crisis rejected the hegemonic idea that there is no alternative to neoliberalism" (Raffaelli, 2017: 48). Instead, affected people started their alternative solidarity-based strategies challenging neoliberalism's hegemonic stability (Raffaelli, 2017). The case of the Hotel Bauen worker cooperative in Argentina can be placed in this context which promises a possible alternative towards a more human-centred form of development. For Higgins-Desbiolles (2012), alternatives must humanise economic systems, which the Hotel Bauen exemplified in the tourism sector. Humanity is essential in tourism as it is in other spheres of life. The second author of the present article personally dined at Hotel Bauen and witnessed that the hotel is still open for business despite the challenges, and the staff is motivated and proud of their achievement.

The SSE movement presents an alternative to capitalism although it accepts profit-making and competition to remain sustainable as a co-operative. This should happen in the context of decreased political activism but was reborn in post-2001 in Argentina because

neoliberalism and the resultant crisis left little options for the workers but collective action (Raffaelli, 2017). In this context:

> SSE organisations can act as agents of social transformation, cultural resistance, and emancipatory alternatives. Moreover, they are driven by social justice values, inclined towards sustainable production modes, and empowered disadvantaged communities through democratic social relationships. Finally, they are democratic organisations that build up counter-hegemonic identities; they propose new forms of social relations and governance. Not understanding the SSE in all its complexity is part of accepting the hegemonic discourse and the lack of alternatives (Raffaelli, 2017: 48).

SSEs represent a new form of democratic governance of enterprises underpinned by social justice values while refuting the hegemony of neoliberalism. In other words, SSEs open up new emancipatory and liberating opportunities so that workers can benefit from their sweat and labour. At the same time, the case of WRCs (or worker-recuperated Enterprises - ERT) must be understood beyond itself to become a symbol of what is possible showing "*innovative alternatives for reorganizing productive life itself*" during economic crisis times heralding a new productive life that arises from within but triggered by neoliberalism in crisis (Vieta, 2010: 296, Italics in original). In this context, it must be added that WRCs were part of a more significant movement of solidarity actors. During the Argentinian crisis, the social actors' ambition was to address poverty and exclusion through barter organisations, cooperatives, charitable organisations, self-employment, and alternative unions (Raffaelli, 2017). Thus, the workers were directly involved in the WRCs movement, but a complete social ensemble of actors was actively participating in the general solidarity economy. Communities secured and defended factories, showing that the solidarity economy can bring about change and transformation, which neoliberalism wants to separate (Rizek et al., 2014).

Beyond exemplifying innovative strategies of reorganizing work that directly addresses the unavoidable instability shaped by an overreliance on the global neoliberal market structure, the ERT also proposes "viable community-based alternatives to welfare plans, government make-work projects, clientelism, unemployment, and underemployment" (Vieta, 2010: 314). Thus the community at large, and not just the workers, become critical protagonists of the movement. To the workers' support came neighbourhood assemblies, secondary school and university students, leftist parties, and human rights groups to ensure that workers earn a living (Ranis, 2010).

However, for the Argentine civil society, a lot needs to be done to secure the working class's minimum rights (Ranis, 2010). Within this socio-economic substratum of solidarity and cooperation amongst workers and community members' movements, efforts towards a just society with new alternatives to tourism development can be proposed. This can be done by allowing the workers and disadvantaged community members to gain control of the tourism sector and the geographical spaces in which it operates.

2.1 Corporate Social Responsibility (CSR) and more 'Sustainable' Tourism

This section is pertinent because the above alternatives, based on solidarity and cooperation, should be contextualised within the more general sustainability and current milieu issues. Change should happen now with a shift towards sustainability rather than to procrastinate. In this context, tourism companies can change through their corporate social responsibility (CSR) for sustainability.

"CSR is linked to sustainable development" (Sucheran, 2016: 3), although this is debated as questions arise such as the similarities and differences between CSR and sustainability

(Mihalic, 2016). Conceptually both sustainability and CSR share three economic, social and environmental pillars. "It is evident that CRS is more popular in the corporate world and sustainability among tourism destinations and public bodies or organisations. One may even claim that the term sustainability has been avoided by corporate business practice and consultants" (Mihalic, 2016: 468). Corporate Social Responsibility operates from a corporate position and values with a profit orientation, with preference being given to the economic pillar as against the social and environmental. In contrast, the discussion on sustainable tourism "claims that all pillars are equally important, with no priorities given to any pillar and certainly not to the economic one" (Mihalic, 2016: 468). Henderson (2007: 231) explains the similarities and differences:

> The principles of sustainable development have much in common with those of CSR, and the terms are sometimes used interchangeably. A company pursuing sustainable tourism is, by definition, socially responsible, while CSR incorporates some of the fundamental tenets of sustainability. However, sustainable development seeks to embrace all the participants in the development process and give equal weight to their voices. CSR maintains a company perspective, and profitability questions remain at the forefront, not to be eclipsed by social and environmental agendas.

As compared to CSR, we believe sustainability is more focused and comprehensive, as is articulated in this excerpt:

> Sustainable development implies a more profound and broader commitment and is part of a debate relevant to most areas of human endeavour and informs private and public sector actions. In comparison, CSR pertains only to industry members and covers a particular and voluntary activity aspect. It, therefore, occupies a position near the weaker pole of the sustainability spectrum and should be assessed within the context of that discourse (Henderson, 2007: 231).

CSR requires that firms are accountable to all stakeholders in their operations and activities to achieve sustainable development in the economic, social, and environmental dimensions (Trong Tuan, 2011). The need is to go beyond it and to recognise that sustainable tourism is about the quality of life of both visitors and the hosts and not merely environmental conservation (Trong Tuan, 2011). CSR and sustainable tourism remain complex, with CSR being based on corporate needs and goals, whereas sustainable tourism is concerned with attaining a balance between socio-economic matters and the environment.

As currently conceptualised and practiced, corporate social responsibility does not promote the restructuring of the tourism sector to become just, as can be argued for any sector. Instead, strategies that reconfigure the ownership and benefits distribution of companies such as the Investment Redistributive Incentive Model (IRIM) (Giampiccoli & Mtapuri, 2020b) advance favourably towards a more just tourism sector and beyond.

It is necessary to go beyond CSR which remains rooted in a neoliberal framework and advance new tourism development approaches. New models that promote a sustainable, just, and redistributive tourism sector that is locally controlled and contextualised, environmentally aware, and experiential are necessary (Mtapuri & Giampiccoli, 2017). Structural changes are needed where the tourism sector becomes localised in terms of control and benefits involving the just and equitable distribution of resources, power/control, knowledge, capacities, and benefits (Saayman & Giampiccoli, 2016).

2.2 Community-based Tourism, '*Albergo Diffuso*' and Community-Based Diffused Tourism

2.2.1 Community-based Tourism

Community-based tourism is growing in relevance, and in the last few years the context is essential in the analysis of CBT (Mayaka, Croy & Wolfam Cox, 2019). However, different terminologies, meanings, and models are assigned to it (Boonratana, 2010). Community-based tourism has its root in the 1970s as an alternative development approach aiming to counteract international mass tourism's negative impact (Giampiccoli & Saayman, 2018a; Tolkach & King, 2015). Community-based tourism can be practiced in urban and rural areas (Bhartiya & Masoud, 2015: 348; Ndlovu & Rogerson, 2004; Rogerson, 2004: 25).

The understandings of CBT are many. Some are 'community-owned/managed', with others being run by the private sector while providing community benefits. Some are owned by individuals, while others by community associations, cooperatives, and concessions in community reserves (Dodds, Ali & Galaski, 2018). However, community ownership and CBT management are essential CBT projects (Tamir, 2015). Extensive literature (for example, Amat Ramsa & Mohd, 2004; George, Nedelea & Antony, 2007; Koster, 2007; Leksakundilok & Hirsch, 2008; Giampiccoli & Nauright, 2010; Tasci, Semrad & Yilmaz, 2013; Nataraja & Devidasan, 2014; Sánchez-Cañizares & Castillo-Canalejo, 2014; Petrovic & Bieliková, 2015: 6; Kaur, Jawaid & Othman, 2016; Terencia, 2018; Somnuek, 2018) concurs on the need for ownership by local community members and the management and control and benefits of CBT. Disadvantaged community members must control their CBT ventures (Giampiccoli & Saayman, 2018b). Considering taking control of its own geographical spaces, it must be underlined that CBT is a tourism "conceived, managed and supplied by the local communities of a given territory" (Terencia, 2018). CBT is meant to build local communities, and it prohibits external community members from being involved in the tourism management of the local communities (Kaur et al., 2016). CBT seeks to ensure that most benefits must go to locals and their economy (Strydom, Mangope & Henama, 2019).

> The expression 'community-based' emphasizes that this type of tourism benefits the rural communities where it takes place. This does not mean necessarily that all the people participate in tourism, but it is essential to state that the owners of the businesses are local, as are most of the suppliers of services and products. Therefore, these linkages generate substantial contributions to local economic development (Guereña & Calderón, 2005 in Trejos & Chiang, 2009: 378).

Community-based tourism businesses can have various models and organisational forms, including cooperative businesses and private sector concessions (Dodds et al., 2018; Calanog, Reyes & Eugenio, 2012), but those within the collective ownership/management approach are the ones aligned with what CBT should be. Thus, "*CBT is tourism that is planned, developed, owned and managed by the community for the community, guided by collective decision making, responsibility, access, ownership and benefits*" (Tasci et al., 2013: 9, Italics in original). Collective management, redistributive justice, and equity are all part of the CBT approach (Dangi & Jamal, 2008: 12; Ullan de La Rosa, Aledo Tur & Garcia Andreu, 2017). CBT should not be restricted but should be recognized with the possibility to scale up and grow (France, 1997; Jealous, 1998; Peaty, 2007; Hamzah & Khalifah, 2009; Calanog et al., 2012; Saayman & Giampiccoli, 2016).

Community-based tourism is practiced in Argentina but is essentially localised in rural areas such as in the province of Salta (Cáceres & Troncoso, 2015). To that end, the provincial government of Salta has promulgated rules regarding CBT in the province (Gobierno de la

Provincia de Salta, 2013). The province of Buenos Aires, for example, has its own CBT programme (Buenos Aires Turismo, n.d.) However, this programme does not seem to consider CBT in urban areas (see Buenos Aires Turismo, n.d.). This exclusion limits the potential of CBT as a vehicle for urban regeneration and contributing to community development in urban areas. A manual related to CBT in rural contexts was published in Argentina (Gallo & Peralta, 2018). In 2017, the Bill (Proyecto de ley) on rural CBT was proposed (Senado Argentina, 2017). In June 2019, the UNWTO sought two CBT facilitators in Argentina for five days (UNWTO, 2019). These few examples indicate CBT practices in Argentina, although with a bias towards rural contexts.

2.2.2 Albergo Diffuso (Diffused Hotel)

In 1982, a new concept "engineered by Mr. Giancarlo Dall'Ara" of AD emerged. It was associated with the regeneration of small centres suffering from an earthquake (Dichter & Dall'Ara, n.d: 4). Since then, the AD model has continued to grow to become an international hospitality model (Silvestrelli, 2013; Morena, Truppi & Del Gatto, 2017; Romolini, Fissi & Gori, 2017). Notably, the AD model aims to regenerate the whole local economy through economic, social, cultural, and energetic interventions which are affordable (Tagliabue, Leonforte & Compostella, 2012). AD's two main characteristics are relevant here: its connection with the local context and the geographical 'horizontal' dispersion/diffusion of the tourism facilities. The AD model integrates a place's culture and community (Cucari, Wankowicz & De Falco, 2019). For instance, the accommodation facility is integrated into the territory, and the community mainly provides various hospitality services (Villani & Dall'Ara, 2015). Secondly, ADs "are horizontal accommodation facilities…" (Villani & Dall'Ara, 2015: 170) that were "lodging, dining and entertainment businesses that are operationally integrated but physically dispersed" (Di Gregorio, 2017: 123). The facilities such as accommodation rooms "forming the *Albergo Diffuso* are not located too far from one another and from the building that hosts the common services to support the whole community hotel, for example, the reception and the restaurant" (Morena et al., 2017: 447). Finally, AD must be seen as a sustainable type of tourism. It is the sense of community and the provision of hospitality services that hold the AD together. It is a confluence of minds, services, resources, and capacities for a common purpose: developing and making a local area thrive and sustain lives and livelihoods using resources from within.

While different ownership models are possible "either a single entrepreneur, a cooperative, or any other most suitable form of productive association" (Dichter & Dall'Ara, n.d: 6), AD businesses are most often cooperatives (Racine, 2012; Marquardt, n.d.) and several of such examples of AD are commonplace (Giampiccoli, Saayman, Jugmohan, 2016). However, the AD should not be understood rigidly but as a flexible model, therefore it has a flexible structure with a common denominator but whose presence can be found in different settings (Pietrogrande & Vaccher, 2016). The AD model gravitates towards a sustainable tourism approach (Giampiccoli & Mtapuri, 2020a). From sustainability, AD incorporates economic prosperity, equity, social cohesion, and potential for job and growth generation (see also Tagliabue et al., 2012; Vallone, Orlandini & Cecchetti, 2013). For Dangi and Jamal (2016), justice is an important bridge between the local and global as well as between the particular and universal, and especially the particular because tourism development is concerned with ethical issues related to equity, fairness and justice for planetary sustainability and well-being.

3. PROPOSING COMMUNITY-BASED DIFFUSED TOURISM (CBDT) IN BUENOS AIRES

After examining the principles and characteristics of the CBT and AD models, we proposed Community-based Diffused Tourism (CBDT) as unifying CBT's social characteristics with the 'diffused' characteristics of AD (Giampiccoli & Mtapuri, 2020a). In the CBDT model "the socio-economic and business ownership/control characteristics and principles of CBT with the geographical/space characteristics of AD, where the geographical/space characteristics and a specific 'social' feature (uninhabited AD units) are expanded and reconfigured" (Giampiccoli & Mtapuri, 2020a). From an AD perspective, it is proposed that the CBDT can boast several typologies, such as neighborhood-based CBDT, street-based CBDT, and 'building'-based CBDT (see Giampiccoli & Mtapuri, 2020a). From a CBT and a socio-economic perspective – the focus of this article – taking CBT characteristics as a base, CBDT enterprises should be cooperative or another form of collective enterprises without restricting individual initiatives such as SMMEs under a single umbrella entity. These enterprises should be primarily owned, controlled, and managed by disadvantaged social groups for their benefit. The CBDT entities should also be owned and managed to support redistribution, equity and empowerment. These are the social-economic context and objectives of CBT embedded in the CBDT model (Giampiccoli & Mtapuri, 2020a).

Also, CBDT should be seen as a model that interacts with and is strongly connected to the local context, for example, by involving businesses not formally belonging to the CBDT. Finally, while the AD model usually uses uninhabited structures, the CBDT is proposed to be more flexible by giving opportunities to inhabited spaces (Giampiccoli & Mtapuri, 2020a). This last issue is very relevant for two reasons. First, it gives more opportunities to disadvantaged/poor people to be part of the tourism/CBDT entity because people "supply what they have, that is, where they live" (Giampiccoli & Mtapuri, 2020a: 13). Thus the type of "inhabited CBDT category could allow many individuals and families to enter into the tourism business without any financial investment, offering great potential for social inclusion in the tourism business, except for what they have and willingness to participate in tourism" (Giampiccoli & Mtapuri, 2020a: 13). In this context, cooperation and a desire to achieve common goals are more important than financial resources (Giampiccoli & Mtapuri, 2020a). Secondly, the 'inhabited' type of CBDT will enhance sustainability and local control. "People live in the same area where CBDT is located, thus enhancing local control of the geographical space through tourism. Consequently, sustainably managing the area is fundamental to maintain and possibly increase the attractiveness of the CBDT entity and the local area" (Giampiccoli & Mtapuri, 2020a: 14). These issues are particularly relevant in Argentina, where social cohesion and cooperation between workers and community members, as noted above, is historically and currently alive. On this solid bedrock, CBDT can be formed creating strong bonds and cooperation between the workers and community members. Therefore, it is cooperation that can lead to the establishment of CBDT where people living in proximity can work together to manage a venture that will allow them to reap the economic benefits of their labour and entrepreneurship and also enhance its control of the local spaces to guarantee sustainability of the CBDT in a specific geographical area.

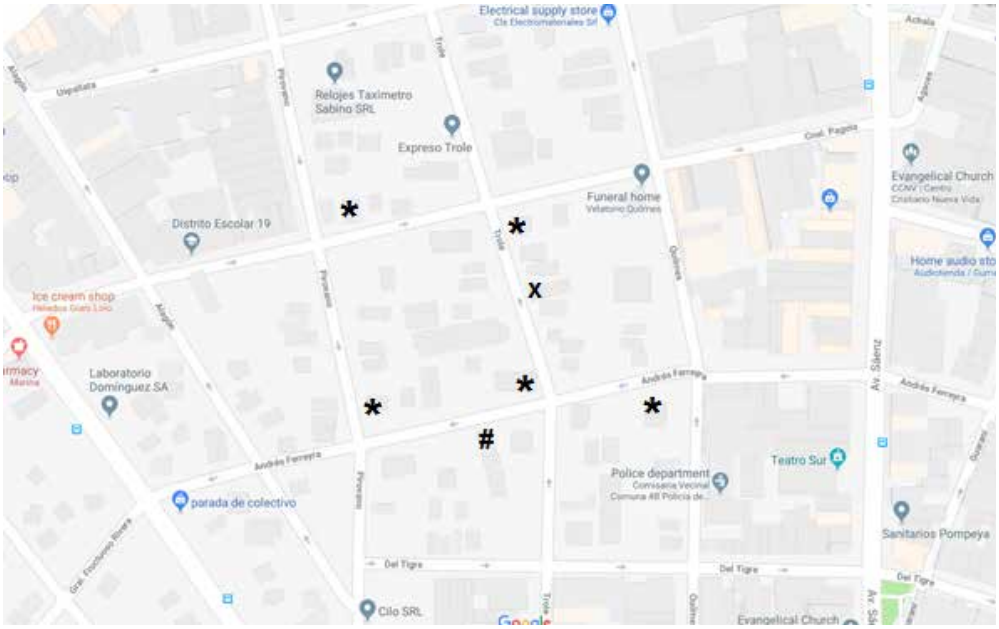
As an example, Figure 1 shows the possible CBDT organised by, and within, the community living in a specific neighbourhood (*Barrio* in Spanish) such as Nueva Pompeya. While the dispersion of the CBDT facilities could not cover the entire neighbourhood as it may not be feasible and not comfortable for the visitors, the neighbourhood as a whole, with its people and internal organisations, could act as an umbrella entity that works with the various CBDT entities within it.

Figure 1. Neighbourhood-based CBDT. Partial Map of Buenos Aires Showing Nueva Pompeya Neighbourhood (*Barrio*)

Source: Google map

Figure 2 represents a possible CBDT within the neighbourhood-based CBDT. In this typology, the facilities can belong to various streets, roads, and squares. Thus the location of rooms and other facilities, especially the reception area and eating rooms, should remain within a comfortable distance for both visitors and owners of the entity and be in specific areas/distances that are also socially connected and, by extension, where social cohesion and commonalities exist. If all CBDT facilities are in one specific street, it can be called a Street-based CBDT. It is essential that distances which are in accordance with visitors' comfortability, social aspects of commonality, and social cohesion must be considered when developing CBDT entities.

Figure 2. Neighbourhood-based CBDT. Partial Map of Nueva Pompeya Neighbourhood (Buenos Aires) with Specific Streets and an Example of Localisation of Facilities of the CBDT



Source: Google map (Adapted).(* bedrooms; # reception; x eating area)

As proposed by Giampiccoli & Mtapuri (2020a), the third typology of CBDT where distance disappears can also be initiated. This is when CBDT is very local, within the same building, or a maximum of two adjacent buildings. Figure 3 schematically exemplifies the CBDT typology where different families can offer space in their flats in which all participants combine to form a 'hotel' (also see Giampiccoli & Mtapuri, 2020a).

Figure 3. 'Building'-based CBDT. Simplified Images of Various Basic Building

Source: Shutterstock.com (adapted)

4. DISCUSSION

This article presented the merits of CBT and AD and provided a constellation of possibilities that promote just tourism which uplifts and empowers the disadvantaged members of society. This can be done through their sweat and resources underpinned by social cohesion. The platform for the realisation of this state of affairs is CBDT. A substratum requirement for this to develop and enhance the chances of success is a tradition of vibrant, current, and persistent cooperation amongst local people or the existence of a specific context that favours and enhances the desire and need for cooperation amongst them. While not all people in a specific geographical area necessarily need to be involved, it is imperative, however, to have support or at least neutrality towards CBDT by the most significant number of people living in the specific area, and to avoid antagonism and purposive destruction of its potential. In this context, it is necessary to find solutions that equitably distribute the benefits, not always in monetary terms, to the most significant number of people possible (the indirect beneficiaries) who belong to the specific geographical area of the CBDT project/venture.

The connection between CBT and AD can be viewed as strategic. As mentioned earlier, CBT is usually meant for disadvantaged community members, often with limited resources. Thus the link to AD makes it possible for various people to put together their resources to establish an accommodation establishment as a collective. For example, in a specific street or neighbourhood, various families could "put together their homes" to establish a CBDT hotel. For instance, a family can make the kitchen/eating room available, while another family can provide a room as a reception area. Several families can supply sleeping rooms and other facilities. The model's social aspects imply that disadvantaged people/subaltern/worker classes such as social groups who are involved in the WRCs and SSE in Argentina are the protagonists. At the same time, as happened in Argentina, other community members

not directly involved in the venture can support, facilitate and work for the success of CBDT as a way to express solidarity, enhance local control of spaces and improve the local living conditions.

In the context of scaling-up CBT, the aim should be to make CBDT a mainstream tourism approach in specific neighbourhoods, with streets eventually encompassing the whole city, and allowing the disadvantaged and the ones at their side to (re)gain control of the city and accrue its benefits, within reasonable limits, permitted by the tourism sector. To foster this CBDT model, Government regulation and facilitation become essential. Besides the usual role of government, its role should be to facilitate and promulgate legislation that recognises AD, CBT, and CBDT. In Italy's Sardinia Region (see Consiglio Regionale della Sardegna, 2017), the concept of AD has legal status. This gives merit to the formation of CBDT because the possibilities abound.

The conglomeration of community-based facilities under the CBDT opens up new chances and possibilities and for *in-situ* job creation using local resources, energies, labour, and effort. The creation of a hamlet with a purpose such as under the postulated CBDT assumes that individuals and communities are ready to cooperate, collaborate and work together for the common good. It requires trust, a shared vision, and pride in their location. For CBDT to work, adherence to collectively agreed-upon common standards would be essential to provide a product of acceptable standard within the hamlet.

In this context, CBDT can, within its own limits, also serve as an avenue to offer and contribute to new possibilities and strategies alternative to the "business as usual" and the neoliberal monolithic creed reinforcing the inclusion and role of actors seeking a more equitable, just and locally controlled globalisation. Thus, CBDT can improve social cohesion and increase the equitable distribution of benefits from the tourism sector. It can contribute to local disadvantaged people/subaltern/worker classes and their allies. In this sense, CBDT should involve more sectors linked to tourism and beyond and, at the same time, to go beyond the direct social protagonist of CBDT, including groups in society allied to the disadvantaged. Subaltern classes are not alone, as Freire (2005) in dedication to his Pedagogy of the Oppressed writes: "To the oppressed, and to those who suffer with them and fight at their side." A (re)compacting of class(es), social groups, and individuals looking for alternatives to neoliberalism could also come from CBDT as a strategy to connect with and seek control of a most relevant global economic sector, the tourism sector, and as a means to gain or regain the control of the local spaces.

> While CBDT is specifically intended for, and should prioritise, disadvantaged community members, a collaborative framework that includes all sectors of society is required so that the benefits are spread and social cohesion is enhanced. A CBDT enhances solidarity and togetherness of citizens in a local area for collective entrepreneurship where everyone is an entrepreneur, if they want to (Giampiccoli & Mtapuri, 2020a: 14).

In the current global context, despite the socio-economic tragedies that the COVID pandemic is inflicting around the world, the moment presents opportunities to revive and reorganise cooperatives and solidarity movements that allow the subaltern classes and their allies to regain a central role in society. In this context, tourism as a major global sector could act as the necessary scaffold to reinvigorate and reconfigure the cooperatives and solidarity assemblages in new contexts using a bottom-up approach for the betterment of society. Equally important is financing and management support actions for the subaltern classes that intend to invest in this option of tourism for sustainability.

5. CONCLUSION

The tourism sector is significant globally. In many parts of the world, it is viewed as a possible development tool. In Argentina, the tourism sector is equally essential for jobs and overall economic growth. A specific tragedy such as an earthquake was the reason behind the new concept of AD. Using Argentina as an example, this paper proposes using the new CBDT model, based on the consolidation of CBT and AD. The use of Argentina as an exemplar is pertinent as the country has a long tradition of worker cooperation, cooperatives, and SSEs that emerged with a revival impetus from the crisis of 2001.

Building on the cooperative substratum, this article offers a model of tourism development dispersed over a given territory, as proposed in the urban area of Buenos Aires. Thus, the new CBDT model is based on the geographical aspects of AD and the social aspects of CBT. It should be borne in mind that AD and CBT have similarities such as close linkages to local contexts and the economy, and the adoption of the legal status of cooperatives and their inclusive nature. The new CBDT and its three main typologies for urban areas should be considered flexible and an example of the consolidation of AD and CBT. Further research could still unpack new innovative ways to coalesce AD and its geographical dimension and CBT with its social aspects. In addition, further research can be done in terms of expanding the concept of the interconnection of AD and CBT beyond the accommodation sector.

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ECOTOURISM AND PROTECTED AREAS SUSTAINABLE FINANCING: A CASE STUDY OF WADI EL GEMAL VISITOR CENTER

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ABSTRACT

Ecotourism has the potential to support protected areas (PAs) financing where PAs' visitor centers (VCs) are mechanisms for raising public awareness, and revenue generation. Park agencies must shift from a sole emphasis on preservation to include management approaches that increase the benefits of ecotourism and promote partnerships, collaboration, and integration of tourist activities into protected areas core business. A strategy is needed for Wadi El Gemal National Park (WGNP) to enhance tourism practices in a manner that will protect ecosystems, benefit the local community, and promote sustainability. Visitor centers contribution to the development and sustainability of PAs and ecotourism is rarely investigated. This article sheds the light on PAs' visitor centers and their role in ecotourism, conservation, and PAs financial sustainability. It defines the potential ecotourism products and services in WGNP and its Visitor Center, elucidates the impacts of COVID-19 on the park and the local community, and identifies the necessary tools and resources to implement a sustainable business and management model for WGNP Visitor Center. The results of the VC's probability analysis and the financial indicators suggest that the Visitor Center is financially feasible and could present a model of sustainable revenue generation and ecotourism development in WGNP.

Keywords: COVID-19, Ecotourism, Financial Sustainability, Protected Areas, Visitor Centers, Wadi El Gemal National Park.

JEL Classification: Z32, Z33

1. INTRODUCTION

Tourism is a universal industry that creates employment and remunerations, playing an important role in the economies of several countries (Balmford et al., 2015). Tourism can present principal drivers for creating employment, rising foreign exchange, improving infrastructure, and financing the management of protected areas to accomplish preservation goals (Cerveny et al., 2020). Well-planned tourism offers fiscal and political incentives for management and preservation and may create supplementary benefits to local communities and economies (Agardy, 1993). Protected areas tourism donates to gross domestic product (GDP), serves as a significant source of economic returns, supports local livelihoods, and assists raise funds for biodiversity conservation in developing countries that are gifted with natural resources (Bhammar et al., 2021). Tourism and recreation have long been a key driver for protected areas economic development (Blair et al., 2019). The planning

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and management of tourism development can assist to safeguard a destination's natural and cultural heritage and accelerate long-term economic prospect (Cerveny et al., 2020). Sustainability and environment protection became relevant topics in tourism research and fundamental for consistent destination development and business continuity. The Stakeholder Theory and the Resource-Based View can present theoretical frameworks in the context of sustainability in tourism addressing users and destinations (Cavalcante et al., 2021). Sustainable tourism considers the existing and forthcoming economic, social, and environmental influences, addressing the requirements of tourists and visitors, the industry, the ecosystem and host communities (Aktsoglou & Gaidajis, 2020). The negative impacts of mass tourism and conventional/traditional tourism induced the emergence of alternative tourism (Gohar & Kondolf, 2020) such as nature tourism, ecotourism, rural tourism, community-based tourism, agrotourism, voluntary tourism, responsible tourism, geotourism, adventure tourism, soft tourism, sustainable tourism, small-scale tourism, green tourism, integrated tourism, cultural tourism, and creative tourism (Medeiros et al., 2021). Ecotourism and nature-based can be encouraged in protected areas intended at attaining sustainability.

Ecotourism emerged in the eighties with the advent of sustainable development, to address tourism revenues into preservation (Stronza et al., 2019). It is a combination of two words ecology and tourism (Bashar, 2018). Many studies have attempted to define ecotourism since the term was coined (Björk, 2000; Buckley, 2000). It was first defined as "travelling to relatively undisturbed or uncontaminated natural areas with the specific object of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural aspects found in these areas" (Ceballos-Lascurain, 1987: 13). Blangy and Wood (1992) defined it as responsible travel to natural areas that conserves the environment and sustains the well-being of local people. Nelson (1994) defined it as a subset of tourism that relies on natural resources. Weaver (2001) defined it as a form of nature-based tourism that strives to be ecologically, socioculturally, and economically sustainable. Pröbstl and Haider (2013) regarded nature-based tourism as a cultural ecosystem service. The International Union for the Conservation of Nature (IUCN) and the Ecotourism Society (TES) elucidated some characteristics that should be demonstrated in an activity to qualify it as ecotourism such as promoting positive environmental ethics, concentrating on intrinsic values, benefiting the wildlife, and environment, educating tourists, and involving the local communities in the tourism process (Pasape et al., 2012). Fennell (2001) listed the variables most frequently cited in the ecotourism definitions as (i) location or natural areas; (ii) conservation; (iii) culture; (iv) benefits to locals; and (v) education. Goebel et al. (2019) explored the Participatory Action Research (PAR) as a driver for sustainable tourism and a tool for tourism-affected communities' involvement in the decision-making. With its intercorrelated three basic parts: participation (life in society), action (engagement with experience), and research (growth of knowledge), the PAR can support community development and sustainable livelihoods. De Lucia et al. (2020) found that the social, econoamic, and environmental factors have positive impacts on residents' perception of sustainable tourism. Bernini et al. (2002) distinguished different perceptions and priorities within different tourist clusters regarding environmental sustainability. Nunes et al. (2020) illustrated that the behavioral approach can sustain actions that promote sustainability and environmental protection. Oviedo-García et al. (2017) elucidated that tourist satisfaction incorporates a significant influence on tourism sustainability and the ecotourism knowledge positively affects ecotourist satisfaction when the site is of high perceived value.

Protected areas are valuable assets that can be highly productive if appropriately managed (Fouda, 2002). Direct reinvestment in the conservation effort is essential for long-term sustainability (Balmford et al., 2015). Without sustainable and stable sources of funding

the long-term management objectives of the PA can be jeopardized (Colby, 2003). The WG Visitor Center could be a catalyst that activates ecotourism opportunities at the Park presenting a model of sustainable revenue generation and a partnership between the Park and the private sector (Buckley, 2002; Bodin, 2017). In this capacity, the article aims to develop a sustainable business and management model for the Visitor Center of WGNP. Concerning this objective, the article intends to define the potential ecotourism products and services in WGNP and its Visitor Center and the goals for creating a sustainable business and management model for the VC, identify the necessary tools and resources needed to support and implement the sustainable business and management model and the major issues that may hinder the implementation of the model, consult with locals and relevant stakeholders to gather their opinions and concerns, and define key messages for different target groups and stakeholders. This helps to integrate tourism development with the conservation of the unique and sensitive natural and cultural resources of the WGNP. To achieve the above-mentioned objectives, data on site and from many sources was used to extrapolate the overall situation. Documentation about WGNP were reviewed including technical reports about WGNP, tourism reports, and ecotourism best management practices. A selection of stakeholders were interviewed (e.g. Southern Sector of Red Sea Marine Parks manger, a group of Egyptian Environmental Affairs Agency and park staff, resort owners, tour operators, tourism guides, peoples belonging to the Ababda Tribe and other local communities). WGNP was visited to judge its visitor center and commercial potentials as the basis for developing sound best-practice management and business model. The field survey tools were employed during the visit were semi-structured interviews, focus group discussions, oral histories, observation, taking notes of meetings and interviews, writing up discussions, and content analysis.

2. MATERIALS AND METHODS

2.1 Study Area

The Wadi El Gemal National Park is an extensive area of land and coastal water lying to the south of Marsa Alam in Egypt. WGNP was officially declared in 2003 (Elhalawani, 2013). The Park covers an area of approximately 7,000 km^2 (4,770 km^2 of land and 2,000 km^2 of the sea) stretching from the Red Sea coast (about 70 km of coastline) to about 50 km (Baha Eddin, 2003). It includes many diverse ecological habitats (e.g. coral reefs, mangroves, desert valleys, and their associated vegetation) and a rich variety of animal and bird species including several of which are endangered (Patrick, 2012). The area is inhabited by local pastoral peoples belonging to the Ababda Tribe, who still practice a traditional lifestyle largely in harmony with their environment (Bos-Seldenthuis, 2007). WGNP is designated primarily as a National Park: Protected Area managed mainly for ecosystem protection and recreation, IUCN PA management category II. As large, all-inclusive resorts have developed along the Red Sea, beaches in WGNP remain some of the few places that tourists can enjoy unspoiled coastal landscapes and an area of extraordinary beauty, ecological richness, and cultural heritage (Baha Eddin, 2003).

The WGNP Visitors' Center (VC) is located at the Park's northern entrance situated as a focal point, on the top of a hill, along the western side of the Suez/Bir Shalateen seashore highway. The story building of the VC is about 250m^2. It was built by using local building materials (e.g. local basalt stones). The jury of the Hassan Fathi Award for Architecture 2009 decided to award it an honorary prize because the building is very simple and in harmony with its surroundings. The design of the VC was inspired by the acacia tree. For the Ababda tribes, the acacia is viewed as the reference point in the open wide desert; offering the

much-needed landmark, shade for gathering, and a source of nutritious pods, branches for construction, and firewood. Similarly, the VC was intended to offer shade and shelter where various activities can occur (ArchDaily, 2011). The facility could serve several functions such as disseminating essential information about WGNP, educating and orienting visitors and increasing their appreciation of the unique natural and cultural resources of the area, welcoming pit-stop and serving basic visitors' needs (e.g. refreshments and local crafts), and, offering ecotourism services to tourism establishments along the Red Sea coastline (USAID, 2008; KON-TIKI, 2015).

2.2 Participants and Data Collection

Data collection is fundamental in research, as the data are expected to improve the understanding of the investigated phenomenon (Aberdeen, 2013). Hence, data must be obtained using sound judgments, particularly as a thorough analysis still cannot compensate for inadequately collected data. The interviews involved participants that represent the key stakeholders in the study area. Participants were the manager of Southern Sector of Red Sea Marine Parks, a group of Egyptian Environmental Affairs Agency and park staff, resort owners, tour operators, tourism guides, peoples belonging to the Ababda Tribe and other local communities. This selection was based on the relationship with or proximity to the park or the business share in the region. The main methods used to collect data were semi-structured interviews to eighteen individuals (7 park staff, 2 resort owners, 4 tour operators and guides, 5 Bedouins) and stakeholders' discussions meeting to five individuals (Southern Sector of Red Sea Marine Parks manager, WGNP deputy manager, resort owner, tour operator, tribe representative), in addition to oral histories of local people, observation during the field visit, taking notes of meetings and interviews, writing up discussions, and content analysis. A combination of purposive and snowball sampling was employed to determine, approach, and recruit relevant participants (Noy, 2008). Purposive sampling assisted in recruiting participants that are particularly informative, relevant, possess knowledge, have experience, and engaged in the research topics. The snowballing sampling method was beneficial in recruiting relevant participants based on a referral by participants from the purposive sample. The main topics were addressed in the interviews were the potential ecotourism products and services in WGNP and its Visitor Center, the associated expenditures and revenues, the beneficiaries, the impact of COVID-19 on the park, and the challenges to develop a sustainable business and management model for the Visitor Center of WGNP. The interview questions were developed based on the study objectives, the outcome of the literature review and the stakeholder's consultation process. The questions were tested in a pilot phase prior to the interview phase. An interview guide used to shape the discussion with the participants, guarantee reliability and to validate that all anticipated topics were investigated. A responsive interviewing procedure was utilised to allow the researchers to adjust to new information and conversion of direction during the interview when necessary in order to gain a deeper understanding on unpredicted perceptions. Three business development scenarios for the Visitor Center were presented in the stakeholders meeting. The main issues and concerns were highlighted. The discussions were registered and the content was transcribed.

2.3 Data Analysis

Data collected during the field visit to WGNP and in the semi-structured interviews and in the stakeholders meeting were examined using an inductive approach to build a sustainable business and management model for WGNP Visitor Center including the message, the target audience, the marketing mix, the financial feasibility, the business plan and the profitability

analysis. The data analysis followed four steps: data preparation; data exploration; data reduction; and interpretation. Relevant criteria were chosen to assess the feasibility of WGNP Visitor Center. Calculations were done with care and included different aspects that need to be considered. Several assumptions used in the calculations were made to fill data gaps and to simplify the analysis and were conservative in estimating revenues and liberal in estimating expenses. Moreover, the deducted profitability indicators were calculated by using a discount rate 10% which is higher than the interest rate of the Central Bank of Egypt (the overnight deposit rate, overnight lending rate, and the rate of the main operation remained unchanged at 8.25 percent, 9.25 percent, and 8.75 percent, respectively at its April 29th, 2021 meeting).

3. THE POTENTIAL ECOTOURISM PRODUCTS AND SERVICES IN WGNP

Key questions must be answered to develop sustainable tourism for the WGNP: how much and what type of tourism is appropriate? where should tourism occur and what infrastructure is appropriate? how will tourist infrastructure and resource protection be paid for? The next sections will present some answers to the preceding questions.

WGNP has excellent potential for ecotourism development given its unique natural and cultural heritage resources. Sillence (2015) suggested three of the Wadi el Gemal's Unique Selling Points (USPs) that can be assumed to be the basis of the activities that will be developed to attract visitors to the area: desert landscapes (e.g. deltas, mountains, and night skies); fauna and flora (e.g. esp. sooty gull, Nubian ibex, dugong, coral reefs, sea turtles); and ancient archaeological sites (e.g. roman ruins and sapphire mines and trade routes). From the uniqueness of these physical attributes of the Park, the author highlights a list of activities as proposed tourism attractions: beach visits, snorkeling, diving, turtle conservation, horse riding, camel rides, yoga and meditation, desert technology demonstration, archaeological site visits, desert walks, mountain biking, trekking with the Ababda, Astro-tourism, and nautical tourism. Also, Patrick (2012) mapped some potential ecotourism opportunities at WGNP as:

- overnight use in the Park could occur with an "eco-lodge" or could be camping allowed at designated locations away from the sensitive coast by permit only.
- developing two to three "swim" beach sites at less sensitive locations that can accommodate buses, vans, and larger numbers of people.
- identifying other sites that can accommodate small groups, primarily guided and by permit, for nature watching, interpretation, and education (e.g. Hamata Mangrove, Ras Baghdadi/ Wadi Gemal, Tourfat Al Masheikh, Sharm el Luli, Umm Al-Abbas, and the point at Qulaan).
- identifying and developing several locations for authentic Bedouin craft and food outlets (e.g. Qulan Village, Abu Ghosoun Village, WGNP Visitor Center, and Museum).

These activities need to be packaged up to provide the basis of the products and services that will produce visitor flows into the Park.

4. VISITOR MANAGEMENT STRATEGY

WGNP was designated a Protected Area in 2003. Since that time, very little has been done in Park's service development. To date, few visitor facilities, guides, or information currently exist. Tourism use in the Park has been generally unplanned and opportunistic (USAID, 2008; USFS, 2008). Ecotourism can contribute to preserving and improving natural resources and quality of life while providing jobs, increasing local revenues, generating

business opportunities, and enhancing community cohesion and pride (Björk, 2000; Coren & Gray, 2012). The enhancement of natural resources and promotion of the sustainable utilization of resources such as ecotourism are proactive measures that seek to improve the future utility of the natural resources of the Park (Holden & Sparrowhawk, 2002; Ospina, 2006). WGNP has a high potential for leisure, recreation, adventure, beach tourism, safari, and cultural heritage tourism. However, tourism of any kind has the potential to impact negatively or positively on the destination. Rangers at WGNP face challenges in balancing visitor access, services, and facilities with the protection of the remarkable Park. Visitor centers assist in using, controlling, managing, protecting, and developing tourist attraction resources (Pearce, 2004). They serve many different functions, from education, information, and services, to reducing visitor pressure and generating economic development in declining or undeveloped areas.

Visitor management is a significant tool and one of the main jobs within the protected area management. It comprises many different tasks such as getting knowledge about the visitors and their needs and providing education and services to satisfy their expectations and enhance the visiting experience. Thus, successful visitor management requires quantitative and qualitative knowledge of visitor numbers and activities undertaken in the protected area as well as accurate information on visitors' needs and wishes (Thapa & Parent, 2019). Comprehensive knowledge and accurate information on visitors to protected areas are essential not only for the planning and managing of visitor services and tourism infrastructure but also for the sustainable protection of natural and cultural heritage.

Figure 1. Visitor Management Strategy

Source: Own Elaboration

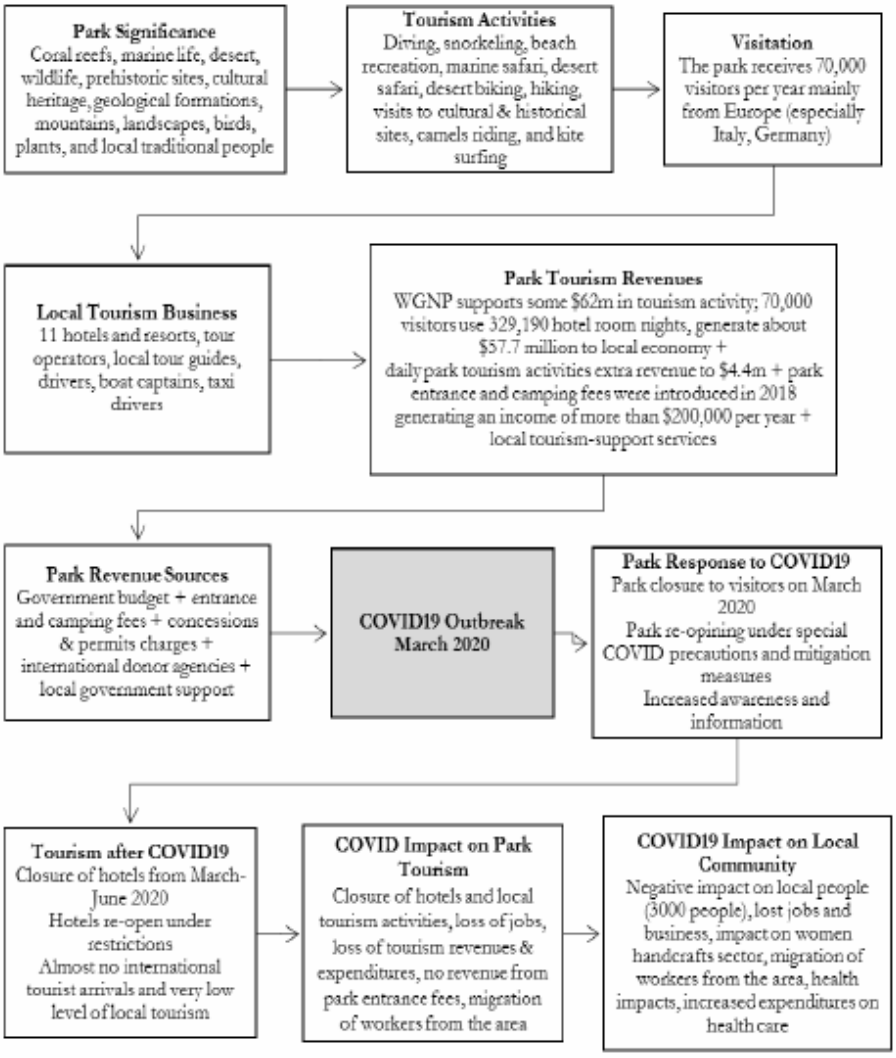
5. THE IMPACT OF COVID-19 ON TOURISM AND VISITATION IN WGNP

Protected areas tourism was a strong-growing segment in the international travel and tourism business prior the economic repercussions of the COVID-19. It created foreign exchange for nations endowed with natural resources, added to conservation incomes, and delivered benefits for communities. Though, the COVID-19 outbreak and the travel restrictions hit it hard (Bhammar et al., 2021). WGNP is a tremendous destination for tourism given its remarkable natural and cultural resources. Such nature-tourism destinations are rare in the present time and pursued by tourists willing to pay a premium for the experience. However, likewise, in almost all protected areas in the world, the park's tourism and visitation have been significantly affected by the COVID-19 outbreak. As of March 2020, all visitation, recreation, and tourism activities to protected areas of Egypt, including WGNP, were put on hold by the Egyptian Ministry of Environment. Priority was given to human health safety

therefore all human undertakings within PAs were temporality suspended. In June 2020, the park was re-opened to visitors under strict precautions and measures to minimize the potential impact of COVID-19 on park visitors. However, visitation and tourism rates, hit by the pandemic, become very low. International tourism arrivals to Egypt stopped since the outbreak and local tourism is very slow as well. Some projections suggest that tourism in the park will not recover before 2022.

COVID-19 outbreak impact on tourism and recreation in WGNP is potentially high. From an economic perspective, the pandemic harms park tourism. The entrance and camping fee revenues, as a major contributor to the park budget, were lost. Millions of dollars of tourism activities and tourists' expenditures were lost as well. Hundreds of people who work in tourism (local tour guides, drivers, hotel staff, boat captains, etc.) have lost their jobs and main sources of income. The pandemic harms the local community in the area. Tourism is the main source of income for more than 3000 people of Ababda people who live in the park for centuries. Tourism supports jobs, local handcraft business, and numerous local tourism services, all lost due to the pandemic. Hundreds of Egyptian workers (none WGNP local people) migrated temporarily from the area to other locations looking for jobs and alternative sources of income. Local women who produce local handcrafts and sell to tourists have also lost their income.

Figure 2. Impacts of CPVID19 on Tourism and the Local Community in WGNP



Source: Own Elaboration

6. SUSTAINABLE BUSINESS AND MANAGEMENT MODEL FOR WGNP VISITOR CENTER

6.1 Message

WGNP Visitor Center will work to get visitors at some point of their holidays out of the regular hotel situation and to bring them in touch with the Parkland, its people, plant and animal life and considering the site rather as a springboard into the Park rather than one top exhibition offers new dimensions to the interpretive planning of the site (KON-TIKI, 2015). The center will support the following activities: encourage a better understanding of the environmental and cultural issues in the region, promote visits to other sites within the region thus distributing the economic impacts of tourism, offer the foreign and receptive tour operator an important attraction for their clients, provide a cluster of services that can generate revenues such as handcraft sales, food and beverage, day trip sales and books/CD's, DVD's, etc.

6.2 Target Audience

Tourism development has increased rapidly along the Red Sea Coast (Eddin, 2003). There are now numerous large-scale hotels, diving operations, and bus tours operating on the Red Sea coast north and south of the Park. Resorts are scattered along the Red Sea from El Gouna 35 km north of Hurghada to Wadi Lahmi some 100 km south of Marsa Alam. Tourists to WGNP are primarily interested in visiting the Park's beaches to sunbathe, snorkel, and swim, as well as visit the Park's reefs for diving (Chemonics, 2008b). Other natural and cultural values of the Park are gaining attention and interest. The value of WGNP will become increasingly apparent when large stretches of the Red Sea coastline are occupied with manmade structures, and visitors seek to experience the natural setting of the Red Sea. In 2003, there were 30,150 rooms on the Red Sea coast, with some 87,301 under construction between Hurghada and Marsa Alam (Eddin, 2003). According to Child (2009) there were 11 hotels in the direct vicinity of WGNP in 2008. An estimated 70,604 guests (about 75% foreigners (largely from Europe) and 25% Egyptians) utilised 329,190 room nights (45% occupancy) which generated about $57.7 million. He suggested that daily park tourism activities generate extra revenue for local tourism of $4.4m and the economic contribution of WGNP to the local tourism industry is some of $62m. Park entrance and camping fees, introduced in 2018, generate direct income of about $200,000 per year (WGNP Accounting department). By 2017, the executive capacity was 93,247 (74%) out of 126,404 the approved capacity (104,506 hotel capacity and 21,898 tourist housing capacity) in the Red Sea Tourist Area (TDA, 2017). Half of this capacity is located at Hurghada where 16% in Marsa Alam (TDA, 2017). Germans are one of the most numerous nationalities in the southern Red Sea, mainly coming for diving, in addition to the Italians who mostly engage in leisure or beach tourism (Chemonics, 2008a). The other nationalities reported visiting the area are the French, Russians, Americans, and Scandinavians (Cesar, 2003). The Visitor Center would appeal to a general audience, which is mainly the WGNP visitors both national and international and serve the needs of awareness and education for schools and universities.

6.3 Marketing Mix (4P'S)

Marketing is defined as 'putting the right product in the right place, at the right price, at the right time (Singh, 2012). To effectively market a product or service there are four elements, known as the marketing mix, which should be viewed as one unit and structured to support each other. The following section describes the marketing mix of the WGNP visitor center:

Product: The Visitor Center will provide several educational, informational, entertaining, and ecotourism opportunities for its visitors. It will offer an exhibition, demonstration, and hands-on areas, local and site-specific merchandise offers, and a choice of food and drinks. It is assumed that this means approximately 1 hour for a visit plus the actual excursions (KON-TIKI, 2015). The experiences consist of: a multilingual (English, Arabic, Italian, German) partly interactive exhibition with demonstration and hands-on areas; opportunities for excursions into the Park on various levels (e.g. 1h hands-on introduction into various topics, half-day excursion, one-day excursions, overnight excursions with star gazing, etc.) with preparation for outside experiences in the center (orientation, equipment); a merchandise and culinary offer strongly related to the content of the site (Ababda-souvenirs from natural materials and regional or national available materials, polished stones, post cards/posters, alabaster animals such as coral/turtles/birds/camels etc., eatable (candy) stones cake with the shape of the WGNP area, biscuits in the shape of various animals, Bedouins sun-bread); staffed self-service counter and vending machine; a small animal enclosure presenting typical animals of the land the visitor is not very likely to see otherwise even during excursions (e. g. Dorcas gazelle, Nubian Ibex); and Junior Ranger activities (e.g. puzzles, drawing boards and activity magazines for children).

Price: a detailed financial analysis is presented in the next section.

Place: The site is located close to the coastal road to be easily accessible for the mass of visitors. There is a good road network linking WGNP with major tourism centers along the Red Sea (Hurghada, Quseir, and Marsa Alam) and the Nile Valley. The main Red Sea coast road between Suez and the Sudanese border through the WGNP. The Park is also accessible from the Edfu-Marsa Alam Road via the asphalt road to Sheikh Shazli, which passes through the western section of the PA. The building is constructed to blend in with the natural and cultural features of the Park. The major components include: Reception/information desk staffed by a multilingual informed staff, seating area for relaxing and observing the view of the sea, large panels and displays demonstrating the major theme and visual images of the resource base, craft production demonstration area, display racks with brochures from the region and beyond, connected thematic 'pods' demonstrating the various marine, desert and cultural messages, small amphitheater for a variety of video presentations, the retail outlet features local crafts, dried medicinal plants, etc., outdoor terrace and beverage service, equipment rental outlet, observation towers, interpretation kiosks, and parking area.

Promotion: A successful promotion process should make the VC a world leader in demonstrating desert technology as well as using WGNP natural unique selling points (USPs) in innovative ecotourism packages to attract visitors. The premises need to be developed as a state-of-the-art visitor center with accompanying quality ecotourism services. For advertising of the Visitor Center and its excursions, a large map of the National Park featuring the main attractions plus the excursion option could be developed for the information areas of the hotels in addition to introductory videos, flyers, guidebooks, posters, display boards, and electronic advertising via the internet and operator websites. Other effective mechanisms include establishing a regional identity based on a stakeholder branding workshop, designing and launching a commercial website and database, attending trade shows and tourism events, organizing a familiarization tour, producing electronic and print brochures, and producing a Group Tour Planner for the travel trade. It will be also necessary to access the intermediaries who will reach the client markets such as tour operators and adventure travel companies (e.g. Tribes Travel, Overseas Adventure Travel, Forum Andersreisen, TravelMotion), booking and search engines (e.g. Google Ads, Tripadvisor, Expedia, Book Different, eDreams,

Orbitz, KAYAK, Travelocity, Skyscanner, Green Hotel World), and Media organizations (e.g. National Geographic, Travelmole's Vision on Sustainable Tourism, Planeterra, The International Ecotourism Society, National travel magazines/journals).

6.4 Financial Feasibility and Business Plan

The Business Plan intends to provide the financial basis for effectively managing the Visitor Center's operations and its likely expansion in subsequent years. It assesses the financial and economic implications of potential revenue-generating scenarios including innovative revenue-generating activities and the investments needed to fully activate these revenue-generating activities. The plan provides the structure and direction for developing more targeted one-year operational plans whose activities fall within the parameters of the business plan. The business plan identifies three business development scenarios for the Visitor Center. In each scenario, the plan specifies current operational costs and current revenue sources. The business plan does not intend to be the "final word" regarding current and future programs and their associated costs, or current and future revenue sources. Nor does it attempt to quantify with specificity the costs associated with future activities, or the amount of revenue that might be gained from potential future sources. The numbers provided are reasonable estimates based on the analysis of projected future needs. They serve as an informed and reliable starting point from which programmatic discussions and decisions can proceed. Once programmatic decisions are taken, detailed financial planning will be necessary. This plan assumes that the Visitor Center will be operated by a third party, i.e., private sector or non-governmental organization, and through a partnership between this party, the park's authority, and the local community.

Table 1 provides a summary of costs and revenue sources for each of the three business plan scenarios. The three scenarios are differentiated as follows:

- Scenario 1: Number of visitors who buy the packages per year is 2,600 visitors (Scenario 2 X 50%).
- Scenario 2: Number of visitors who buy the packages per year is 5,200 visitors (25 visitors X 4 days per week X 52 weeks).
- Scenario 3: Number of visitors who buy the packages per year is 7,800 visitors (Scenario 2 X 150%).

For this analysis, data were gathered from discussions with relevant stakeholders. Additionally, several assumptions were made to fill data gaps and to simplify the analysis. All assumptions are based on conservative estimates.

Table 1. Projected Revenues & Expenses (€)

	Scenario 1	Scenario 2	Scenario 3
Revenues			
Revenues from the Gift Shop	5,200	10,400	15,600
Revenues from the Cafeteria	2,600	5,200	7,800
Revenues from the Ecotourism Packages	91,000	182,000	273,000
Subtotal	**98,800**	**197,600**	**296,400**
Operation Costs			
Rent	50,000	50,000	50,000
Salaries & Wages	45,000	45,000	45,000
Training	4,000	4,000	4,000
Electricity & Water	3,000	3,000	3,000
Repairs & Maintenance	7,000	7,000	7,000
Transportation	3,000	3,000	3,000
Communications and Internet	2,000	2,000	2,000
Uniforms	2,000	2,000	2,000
The Cafeteria running costs	5,000	5,000	5,000
Goods for the Gift Shop	6,000	6,000	6,000
Certification	3,000	3,000	3,000
Advertising & Marketing	30,000	30,000	30,000
Depreciation	5,000	5,000	5,000
Other	5,000	5,000	5,000
Subtotal	**170,000**	**170,000**	**170,000**
Net Operating Income	**-71,200**	**27,600**	**126,400**
Capital Development Costs			
Renovation of Visitors Center	115,000	115,000	115,000
Furniture & Equipment	100,000	100,000	100,000
Interior design (e.g. exhibition area)	60,000	60,000	60,000
Signage system	25,000	25,000	25,000
Consulting, Legal and Professional Fees	30,000	30,000	30,000
Subtotal	**330,000**	**330,000**	**330,000**

Source: Own Elaboration

Table 2. Revenues from the Ecotourism Packages (€)

	Scenario 1	Scenario 2	Scenario 3
Number of visitors who buy the packages per year	2,600	5,200	7,800
package price per visitor	70	70	70
the international marketing company (30 percent)	21	21	21
cost of package per visitor	14	14	14
net revenue from package per person	35	35	35
Total	**91,000**	**182,000**	**273,000**

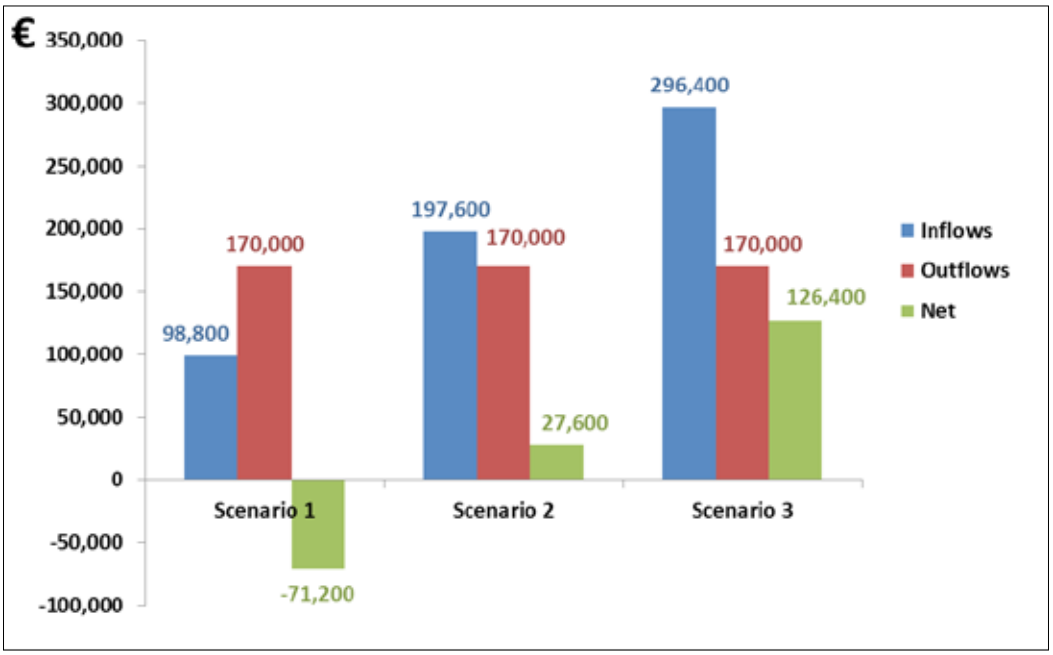
Source: Own Elaboration

Table 3. Staff and Salaries (€)

Staff	Number	€/Month	€/Year
Manager	1	1,300	15,600
Guide	2	600	14,400
Admin	1	350	4,200
Visitor Center Specialist	2	350	8,400
Cleaning Staff	1	200	2,400
Total	**7**		**45,000**

Source: Own Elaboration

Figure 3. The Business Situation Over the Different Scenarios



Source: Own Elaboration

6.5 Profitability Analysis

Profitability analysis is the first step in the economic appraisal of a project. It is concerned with assessing the feasibility of a new project for its financial results. This analysis is applied to appraise the soundness and acceptability of the project. Profitability is defined as the ability to earn a return over and above the cost of capital with consideration of the risks involved. Any or a combination of the indicators in Table 4 determines the profitability of the project. The deducted profitability indicators (NPV, IRR, B/C) will involve discounting to translate future value into their present value worth by applying a discount factor that reflects the diminishing value of the same amount of money as one moves further into the future.

Table 4. Financial Indicators

	Scenario 1	Scenario 2	Scenario 3
non-deducted profitability *			
Pay-back period	-	11.9 year	2.6 year
Accounting rates of return	-	8%	38%
deducted profitability **			
Net present value (NPV)	-	-95,026	746,111
Benefit-cost ratio (B/C)	-	0.7	3.2
Internal rate of return (IRR)	-	5.5%	39%

* **Pay-back period:** it is just to determine the number of years it takes to recover all capital investment. The shorter the pay-back period is, the better the project.

Accounting rate of return or investment: It is the percentage of initial investment that is recovered each year. The higher rate is, the better the project.

** **Net present value:** NPV is defined as the difference between the present value of the project benefit (B) and the present value of the project cost (C). The project is considered economically feasible whenever benefits exceed the cost or when NPV is greater than zero.

Benefit-cost ratio: B/C is the ratio of the present value of the gross benefit to the present value of gross cost. The decision rule is accepting projects with B/C greater or equal to 1; otherwise reject.

Internal rate of return: IRR of a project is the discount rate that equates to the present value of the benefit and cost. The decision rule is to accept the project if IRR is greater than or equal to the relevant discount rate; otherwise reject.

Source: Own Elaboration

In Scenario 1, the net operating income is negative, and the project is unfeasible. For scenario 2, the payback is approximately 12 years with a simple rate of return of 8%, which is fair given the concession is at least 20 years. For scenario 3, the payback is 2.6 years with a rate of return of 38%, which is very good for the project. However, these two indicators do not take into consideration the whole life span of the project but rely on one model period and their application is based on the project's annual data, meaning that all the inflows and outflows enter the analysis at their nominal non-discounted values as they appear at a given time during the project's life. Thus, their results somewhat less precise. The NPV, IRR, B/C are called discounted or dynamic indicators because they take into consideration the entire life of a project and the time factor by discounting the future inflows and outflows to their present values. According to these indicators, the project is not feasible with Scenario2 as the NPV is negative (€-95,026), B/C is less to 1 (0.7), and IRR (5.6%) is less than the relevant discount factor (10%). Scenario 3 is the only economically feasible scenario with a very reasonable NPV (€746.111), B/C (3.2), and IRR (39%). The results emphasize the importance to reach a certain number of visitors (i.e., >5,500 visitors/year) and justify the budget allocated to advertising and marketing in table 1.

7. CONCLUSION

A sound investment in Protected Areas can both protect biodiversity and enhance Egypt's tourism product while simultaneously generating significant financial surpluses (Child, 2012). These potential Win-Win-Win scenarios need to be used as the foundation of the stakeholder engagement process and the associated measures. Examples of these measures include better procedures for revenue generation and retaining revenue in Protected Areas at a level sufficient to cover its primary functions and provide incentives for improved park performance, improved protected area governance, and managing PAs as cost centers accountable for achieving certain levels of performance using effective objective-orientated performance-based planning methodologies (Colby, 2003). This will demonstrate the

importance of the Nature Conservation Sector (NCS) as a governmental body able to generate financial surpluses and considerable economic growth.

WGNP has excellent potential for ecotourism development given its unique natural and cultural heritage resources (Elhalawani, 2013). The Park does not have to provide all types of recreation activities but should meet demand only for activities that require a National Park to meet its objectives (Khallaf, 2009). This would include natural and cultural history education and interpretation; Ababda culture and craft venues; tours (driving, camel or horse riding, hiking, and boating) to view and learn about the Park; beach leisure for passive enjoyment of the Park settings; nature viewing (birds, turtles, plants, etc.); opportunities for scenic beauty; day use; guided use; and diverse itineraries that mix nature with culture (food/drinks, crafts, and people). Park management should plan and develop appropriate locations for a variety of tourism activities in the Park. Tour guides/operators can then tailor itineraries to include stops and activities along the coast at the designated and permitted locations. Thus, to position the region as a desirable destination for the ecotourism market it is essential to understand that WGNP at the beginning of long process that should include the following activities: attracting new investments and engaging private sector and local people; coordinating with higher authorities to generate and retain revenues to be used to support Park management and operations; evaluating the capacity of Park staff to account for all revenue generated in a systematic and transparent manner; regulating and monitoring tourism activities within the Park to ensure good practice; building appropriate environmentally friendly lodgings, service infrastructures and facilities that respond to visitor needs; designing and developing professional attractive multi-activity tour packages; constructing fully equipped and appealing visitor interpretation and information centers including interpretive trails, sign, observation towers, etc.; developing local based programs and training essential staff; and marketing to the selected target market with an aggressive campaign that appeals the 'specialty market' tour operators in Europe and elsewhere.

The development of the WG Visitor Center represents a strategy to interpret this part of Egypt's history and culture for tourism. This highlights the importance of the management of the WG Visitor Center professionally and sustainably and as a model for partnership between Park management and the private sector. It needs to be the catalyst that activates ecotourism opportunities at the Park. The probability analysis coupled with the financial indicators presented in this article assures that the VC is financially feasible and could present a model of sustainable revenue generation for WGNP.

An effective way to evaluate and monitor the achieved progress is to establish a group of indicators that would be the prime targets for future activities. The group of indicators is proposed for the WGNP Visitor Center include estimated arrivals into the Park (by sea and by land), percentage of ecotourists, number of days spent in the region, number of repeat tourists, number of users of the Visitor Center, number of visitor facilities established in WGNP, number of supportive stakeholders, amount of revenue generated per tourist per night, amount of visitors buying packages, the value of package sales, revenue generation by the center, number of visitors to the website and social media, post-visit satisfaction surveys, number of agreements with tour operators/hotels/local people, and volumes of sales of handicrafts and gifts.

The "number of visitors" is the most important data as it is the most essential indicator and basis for various planning and marketing activities. The increase in the number of visitors is expected to continue as significant additional tourist accommodations are constructed on the coastal strip to the north and south of the Park. Expansion of management capacity and facilities within the Park in future years will be essential to meet the demands placed on it by increased levels of visitor use. Another approach places the focus on increasing tourist expenditure rather than increasing tourist numbers.

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ISSN: 2183-1912

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