Demand for Domestic Marine and Coastal Tourism

John Deely[1], Stephen Hynes[1], Mary Cawley[2] and Sarah Hogan
[1]SEMRU, Whitaker Institute, National University of Ireland Galway, Ireland
[2]Whitaker Institute and School of Geography and Archaeology, National University of Ireland Galway, Ireland
John.Deely@nuigalway.ie
Stephen.Hynes@nuigalway.ie
Mary.Cawley@nuigalway.ie
Sarah.Hogan@nuigalway.ie

Abstract: Domestic marine and costal tourism has increased in importance over the last number of years due to the impacts of international travel, environmental concerns, associated health benefits and COVID-19 related travel restrictions. Consequently, this paper conceptualizes domestic marine and coastal tourism within an economic framework. Two logit models examine the factors that influence participation in the coastal day trips and overnight stays markets, respectively. Two truncated travel cost models are employed to explore trip duration, one analyzing the number of day trips taken and the other examining the number of nights spent in marine and coastal areas. Although a range of variables predict participation, no one variable had a significant and consistent affect in every model. A division in access to domestic marine and coastal tourism is also observed based on variation in household income. The results also indicate a vibrant day trip market and large consumer surpluses. The decision to use logit participation models and travel cost models applied to day trips and overnight stays is a direct result of the audiences this paper aims to inform. Firstly, by presenting the decision making process for domestic marine and coastal tourism in this depth, evidence based decision makers can gather a better understanding of how domestic tourist decided to participate in marine and coastal tourism, who the larger beneficiary are of the different types of marine and coastal tourism and how policy focused solely on overnight stays can adversely affect particular segment of society, often those less well off financially. Secondly, the academic literature has presented a dearth of information comparing day trip participation to overnight stays in marine and coastal tourism, as such, this paper provides a valuable source of information.

Keywords: domestic, marine and coastal, day tripper, overnight stay, participation models, truncated travel cost model

1. Introduction

In many senses, domestic tourism is an often-overlooked aspect of the tourism market. From the individual's perspective, overseas travel is frequently seen as more desirable than holidaying at home (Xin et al., 2019; Athanasopoulos and Hyndman, 2008). Tourism policy often focuses on attracting overseas tourists paying little attention to the domestic tourist. Even in the academic literature, papers on domestic tourism are published much less frequently than those on international tourism (Athanasopoulos et al., 2014; Canavan 2013). This outlook undervalues the contribution, importance, and potential of domestic tourism. However, recent social, political and economic factors are contributing to the re-evaluation of the demand for domestic tourism.

Restrictions on international travel during the COVID-19 pandemic resulted in increased demand for local recreational facilities and domestic holidays (Arbulú et al., 2021; Foo et al., 2020; Moreno-Luna et al., 2021; Vaishar and Šťastná, 2020). As a consequence, domestic tourists developed an increased knowledge of local environments which may continue to exert further demand for domestic holidays in the future (Jeon and Yang, 2021). Further to this, a better understanding of the impact of air travel on climate change and anticipated increases in carbon taxes are likely to lead to reductions in international travel (Gössling et al., 2020; Hendrik et al., 2017). As such, many countries and economies are looking to increase revenue through domestic tourism as it is a potential driver of coastal economic activity in the short term and is predicted to have sustained long-term growth.

This paper is designed to contribute to the literature by conceptualizing domestic marine and coastal tourism within an economic framework. The attributes influencing participation and length of stay are examined for the two main components of the market; namely, day-trippers and overnight tourists. The analysis employs two sets of econometric models applied to Irish national level data; the logit model to analyze the socio-demographic factors influencing the decision to take a day trip or an overnight stay and the truncated Travel Cost Models (TCM) to analyze the factors associated with the number of days or nights spent in a marine or coastal location. Although some of the economic impacts of day-trips (Downward et al., 2020; Prayaga 2017) and longer stays

(Canavan, 2013; Canavan, 2016) in marine and coastal areas have been studied, comparative research is less common (Hynes et al., 2017; Yang and Zhang 2015) By providing a comparative analysis of day-trippers and overnight tourists, valuable insight into how to best grow and service the market can be obtained. Further to this, a comparative analysis allows for a better understanding of the relative importance of day trips and overnight stays in relation to the marine tourism economy and the benefits derived by users from both types of trips.

2. Methodology

2.1 Data collection

Data collection was then conducted during February and March of 2019 using household face-to-face interviews across Ireland. To ensure a nationally representative sample respondents were screened with respect to area of residence, gender, social class and age. Data was collected on a variety of topics including, the number of day trips and overnight trips over the 12-month period prior to being surveyed, expenditure per trip, the composition of the travelling party, the types of marine and coastal activities undertaken on these trips, which counties they undertook these activities in, and demographic questions; including income, social class, employment status and questions related to the respondent's household.

2.2 Econometric approach

Two sets of models are presented in this analysis. The first set of two logit models are used to examine the socio-demographic factors influencing the decision of Irish residents to take a day trip or spend a night in Irish marine and coastal areas. The second set of two truncated TCMs are used to examine the total number of days/nights spent as a marine and coastal tourist.

The decision to separate the models, as opposed to jointly estimating participation and length of stay, is a consequence of the common data related issue of respondents not having participated in the market of interest (Bilgic and Florkowski, 2007). In the present study, some respondents in the data set did not participate in the domestic marine and coastal tourism market during the period of analysis. For non-participating individuals, there is no reported expenditure and none that can be reasonably calculated. Consequently, from the perspective of applying a TCM, individuals with zero cost will have taken zero trips running contrary to economic theory. As a result, participation and length of stay are modelled separately. In the logit model, we include those variables that are expected to impact the decision to spend at least one day/night on the Irish coast, excluding cost. In the truncated TCM, we include the variables that may impact the length of the stay such as travel cost, activities undertaken and travelling companions.

The logit model, is a logistic regression used to predict the probability of an event occurring. In the case of the day trip model, the event is taking at least one day trip and for the overnight stay model, the event is taking at least one overnight trip. The logit model can be depicted as:

$$P(Y = 1) = \frac{e^{\beta_0} + \beta_{1x1} + \cdots + \beta_{kxk}}{1 + e^{\beta_0} + \beta_{1x1} + \cdots + \beta_{kxk}}$$

where x_i are independent variables that impact the decision to spend at least one day or night in a coastal area. β_i are coefficients to be estimated using maximum likelihood.

To model the number of days or nights in a coastal area, a form of the TCM is employed. A TCM is a count model used to predict the probability of the dependent variable, usually trips taken, equally some non-negative integer. To elaborate on the type of TCM used here we start with the most commonly used form of the TCM with a demand function that can be written as (Parsons, 2011):

$$Y_i = f(Z_i)$$

Y_i is the revealed trip frequency and Z_i is a vector of variables that impact an individual's length of stay e.g. price, site attributes and personal characteristics. By definition, trip frequency is a non-negative integer. Consequently, count data approaches are appropriate. Count data models estimate the probability of the number of trips taken equaling a certain integer value. The most commonly used of these count models are the Poisson and Negative Binomial models. Assuming a Poisson distribution, the probability function can be written as (Hellerstein, 1991):

$$P\ (Y_i = j; j = 0,1,2, \dots) = \frac{\lambda^n e^{-\lambda}}{n!}$$

Where Y_i remains the number of trips taken, $j = 0,1,2, \dots$ are the possible values of Y_i and λ is the Poisson parameter to be estimated. In the case of the Poisson model, λ is assumed to be equal to the mean and variance of the number of trips. When overdispersion occurs, where the conditional mean is less than the conditional variance of the number of trips taken, the Negative Binomial model is more appropriate. Accounting for overdispersion the probability function can be rewritten as (Grogger and Carson, 1991):

$$P\ (Y_i = j) = Fnb\ (j) = \frac{\Gamma\left(j + \frac{1}{\alpha}\right)}{\Gamma(j+1)\Gamma\left(\frac{1}{\alpha}\right)} (\alpha\lambda_i)^j [1 + \ \alpha\lambda_i]^{-(j+\frac{1}{\alpha})}$$

where α and β are parameters to be estimated.

Since we do not observe the expected costs for the individuals who make zero trips, the observations used to model trip frequency are truncated at one. Consequently, truncated negative binomials are required. Following Grogger and Carson (1991), the amended negative binomial can be expressed as:

$$\mathrm{P}\ (Y_i = j \mid Y_i > 0) = \frac{\Gamma\left(j+\frac{1}{\alpha}\right)}{\Gamma(j+1)\Gamma\left(\frac{1}{\alpha}\right)} (\alpha\lambda_i)^j [1 + \ \alpha\lambda_i]^{-\left(j+\frac{1}{\alpha}\right)} [1 - Fnb(0)]^{-1}$$

As demonstrated by Hellerstein and Mendelsohn (1993), the consumer surplus (CS) associated with, in this case, a trip to a marine or coastal area can be estimated as:

$$CS = -1/\beta_{tc}$$

where β_{tc} is the estimated travel cost parameter from the TCM.

3. Domestic marine and coastal tourism data and summary statistics

The original data set contains 1,014 observations; 49 observations were removed due to illogical responses such as stating they undertook a marine or coastal activity in Ireland without visiting a marine or coastal area. The logit participation models were applied to the remaining 965 observations. The summary statistics for these 965 observations can be found in Table 1 column 2 under the heading "Complete Sample". Outliers were also removed from the data set used for the TCM models. In the day trips model, individuals whose expenditure was more than 2.6 standard deviations[1] from the mean were removed. These individuals who spent more than €300 per day each account for approximately 2.5% of day-trippers. In the overnight model data set, two sets of outliers were removed. The first set of outliers was individuals who spent €500 per night or more. This accounts for approximately the top 1% of spenders and, like in the day trip model data set, are individuals whose expenditure was more than 2.6 standard deviations from the mean. The second set of outliers excluded was those who spent no money per night. Although it may be true that these respondents spent nothing per night it is unlikely that no money was spent on their behalf. Some monies were likely spent by an individual other than the respondent and it is likely that this cost informed the trip duration. Approximately 3% of the sample spent nothing per night.

Table 1: Summary statistics

Variable	Complete Sample	Day Tripper	Overnight tourist
Day Trips	5.10 (8.84)	6.91 (9.78)	5.28 (7.97)
Average Expenditure on Day Trips	€71.76 (€78.87)	€85.80 (€54.66)	€95.73 (€88.88)
Night Trips	1.29 (2.13)	1.19 (1.87)	2.65 (1.79)
Nights Per Trip	1.52 (2.32)	1.42 (2.09)	3.23 (1.98)
Average Expenditure Per night	€77.93 (€117.18)	€79.47 (€114.98)	€179.03 (€91.48)
Social Classes A, B	0.15 (0.36)	0.16 (0.36)	0.22 (0.41)
Social Classes C1, C2, D	0.73 (0.44)	0.76 (0.43)	0.72 (0.49)
Social Classes E, F	0.12 (0.32)	0.08 (0.28)	0.06 (0.24)
Income €0 - €30,000	0.38 (0.48)	0.34 (0.47)	0.28 (0.45)
Income €30,001 – €60,000	0.23 (0.42)	0.24 (0.43)	0.27 (0.44)
Income €60,001 Plus	0.04 (0.21)	0.04 (0.20)	0.07 (0.25)

[1] Mean and standard deviations are calculated from those who took at least one day trip or spent one night respectively. These are not the same values as presented in Table 1. Table 1 presents the mean and standard deviations after the removal of outliers.

Variable	Complete Sample	Day Tripper	Overnight tourist
Income refused	0.35 (0.48)	0.39 (0.49)	0.38 (0.49)
Coastal Participation	0.69 (0.46)	0.83 (0.38)	0.82 (0.39)
Marine Participation	0.39 (0.49)	0.45 (0.50)	0.54 (0.50)
Aware of Wild Atlantic Way	0.91 (0.29)	0.92 (0.27)	0.95 (0.22)
Visited Wild Atlantic Way	0.39 (0.49)	0.43 (0.49)	0.59 (0.49)
Irish	0.92 (0.27)	0.93 (0.26)	0.94 (0.23)
Age	45.98 (16.30)	43.72 (15.25)	42.84 (14.23)
Living with Partner	0.67 (0.47)	0.68 (0.47)	0.75 (0.43)
Female	0.50 (0.50)	0.52 (0.50)	0.52 (0.50)
Children Under 16	0.72 (1.07)	0.75 (1.08)	0.86 (1.12)
Employed	0.63 (0.48)	0.68 (0.47)	0.73 (0.44)
Retired	0.17 (0.38)	0.13 (0.34)	0.10 (0.30)
Third level or higher education	0.43 (0.50)	0.45 (0.50)	0.56 (0.50)
Sample size	965	697	388

Standard deviation is given in parenthesis.

Comparatively, the demographics from the complete sample (column 2) are similar to those of the "day-trippers" segment (column 3). Generally, there are only a few percentage points between the two groups. In part, this is due to the fact that nearly three-quarters of the complete sample (72%) took a day trip. However, there are some obvious exceptions in relation to expenditure, number of trips and marine and coastal activity participation. In contrast, there are several differences between the complete sample, day trippers' segment and overnight tourist segment with respect to several demographic variables. Those who spent at least one night in a coastal area were more likely to be employed, younger, on average, higher educated, more likely to live with a partner and less likely to be retired.

4. Results

Table 2 presents two logit participation models, one for day trips (column two) and another for overnight trips (column three). In the case of the day trip model, the dependent variable is spending at least one day in a coastal area or not. The dependent variable in the overnight model is spent at least one night in a coastal area.

Table 2: Logit participation models for domestic coastal and marine tourists

Variable	**Day Trip Participation Model** Coefficient (Standard Error)	**Overnight Participation Model** Coefficient (Standard Error)
Social Classes C1, C2, D	-0.075 (0.264)	-0.462 (0.215) **
Social Classes E, F	-0.506 (0.360)	-0.778 (0.353) ***
Income €30,001 – 60,000	0.043 (0.241)	0.396 (0.208) *
Income €60,001 plus	-0.235 (0.423)	0.783 (0.400) *
Income refused	0.401 (0.203) **	0.353 (0.177) **
Part Time	0.334 (0.358)	0.071 (0.287)
Unemployed/ Unable	-0.506 (0.381)	-0.131 (0.403)
Other Work	-0.079 (0.604)	-0.216 (0.594)
Retired	0.172 (0.315)	0.091 (0.322)
Homemaker	-0.372 (0.348)	0.481 (0.335)
Student	0.246 (0.440)	-0.738 (0.361) **
Third Level Education	0.100 (0.195)	0.597 (0.160) ***
Age	0.092 (0.040) **	0.008 (0.040)
Age^2	-0.001 (0.000) ***	-0.000 (0.000)
Living with Partner	0.382 (0.208) *	0.808 (0.200) ***
Dependents Under the Age of Four	-0.365 (0.218) *	-0.810 (0.202) ***
Dependents Age Five to Fifteen	0.048 (0.105)	0.179 (0.088) *
Distance to coast	-0.002 (0.003)	-0.003 (0.003)
Dublin	0.762 (0.228) ***	0.101 (0.184)
Female	0.143 (0.175)	-0.002 (0.151)
Aware Wild Atlantic Way	0.524 (0.278) *	0.599 (0.275) **
Went on Overnight Trips	-0.121 (0.180)	-
Went on Day Trips	-	-0.105 (0.179)

Variable	**Day Trip Participation Model** Coefficient (Standard Error)	**Overnight Participation Model** Coefficient (Standard Error)
Constant	-0.829 (0.985)	-0.342 (0.924)
Observations	965	965
Pseudo R2	0.125	0.129
Log-likelihood	-477	-577
AIC	999	1199
BIC	1111	1311

*** indicates significant at 1% ** indicates significant at 5% * indicates significant at 10%

Social class played a significant role in the overnight participation model. In comparison to those living in a household where the chief income earner was in either social class A or social class B, those that were in classes C1, C2, D and those that were in social classes E and F were less likely to take at least one overnight trip during the survey period. The income of the respondent was also significant in the overnight participation model for all categories of income. In comparison to those who earned €30,000 or less a year, those who earned more than €30,001 or those who refused to declare their income were more likely to go on at least one overnight trip.

In the day trip participation model results, only one income variable was significant, the income refused category. Those who refused to declare their income had a higher likelihood of taking a day trip in comparison to those who earned €0 to €30,000. Unlike income and social class, the results indicate that work status of the respondent only played a minor role in the decision to participate in marine and coastal tourism. In comparison to those working full time, none of the other work statuses presented in Table 2 impacted the decision to take a day trip. In the overnight participation model, the only work status that had significant predictive power is being a student which was negatively associated with participation. Conversely, respondents with a third level education were significantly more likely to go on an overnight trip than those with less academic education. The respondent's age did not play a significant role in the overnight participation model. However, the respondent's age did play a significant role in the day trip participation model. On average, as a respondent grows older the probability of taking a day trip increases until the respondent reaches 53 years old after which point it begins to fall. Gender played no significant role in either model.

Household composition and location played an important role in both models. Living with a partner was positively associated with both the decision to take a day trip and an overnight stay. However, as the number of dependents under the age of four living in the household increased the likelihood of going to the coast either for a day or overnight decreased. Conversely, for the overnight participation model, the number of dependents aged five or older was positively associated with participation. No significant effect was found in the day trip model for this variable. The distance from the electoral district of the respondent's household to the coastline played no significant role in either logit participation model. However, respondents who lived in Dublin, Ireland's capital city, were more likely to take a marine or coastal day trip. The same effect was not found in the overnight trip model.

Awareness of the Wild Atlantic Way, a coastal route along the west coast of Ireland, increased the probability of taking a day trip and an overnight trip. Unexpectedly, if a respondent went on at least one overnight stay, they were no more likely to go on a day trip and if a respondent went on a day trip, they were no more likely to go on an overnight stay.

Presented in Table 3 are the results of the two truncated negative binomial (NB) travel cost models. The middle column presents the predictors of the number of day trips taken. The results presented in column 3 are in relation to the number of total nights spent in a marine or coastal area throughout the study year.

Table 3: Travel cost models for domestic coastal day-trippers and domestic coastal and marine tourists

Variable	Day Trips Coefficient (Standard Error)	Overnights Coefficient (Standard Error)
Travel Cost	-0.004 (0.001) ***	-0.003 (0.001) ***
Social Class C1, C2, D	-0.609 (0.118) ***	-0.039 (0.118)
Social Class E, F	-0.624 (0.210) ***	0.278 (0.253)

Variable	Day Trips Coefficient (Standard Error)	Overnights Coefficient (Standard Error)
Income €30,001 – €60,000	0.065 (0.120)	0.043 (0.137)
Income €60,001 plus	-0.147 (0.221)	0.407 (0.196) **
Income refused	0.416 (0.104) ***	0.071 (0.125)
Part Time	0.123 (0.153)	-0.303 (0.192)
Unemployed/ Unable	-0.113 (0.256)	-0.470 (0.281) *
Other Work	0.894 (0.328) ***	0.516 (0.376)
Retired	0.207 (0.200)	0.359 (0.211) *
Homemaker	-0.613 (0.197) ***	-0.328 (0.228)
Student	-0.236 (0.202)	0.265 (0.234)
Third Level Education	-0.078 (0.091)	0.065 (0.101)
Female	0.134 (0.086)	0.017 (0.090)
Age	0.006 (0.026)	0.016 (0.026)
Age^2	-0.000 (0.000)	-0.000 (0.000)
Living With Partner	0.156 (0.116) **	0.210 (0.131)
Dependents Under the Age of Four	-0.183 (0.108) *	-0.084 (0.136)
Dependent Age Five to Fifteen	0.120 (0.050) **	-0.009 (0.056)
Distance to coast	-0.008 (0.002) ***	-0.002 (0.002)
Dublin	-0.359 (0.103) ***	0.749 (0.107) ***
Aware Wild Atlantic Way	-0.297 (0.158) *	0.897 (0.229) ***
Went on Overnight Trips	0.156 (0.088) *	-
Went on Day Trips	-	-0.579 (0.116) ***
Party Size	-	0.060 (0.036)
Travel Alone	-0.456 (0.549)	-0.736 (0.406) *
Boating	-0.072 (0.127)	0.193 (0.117) *
Walk or Cycle Coast Line	0.155 (0.093) *	0.353 (0.104) ***
Angling	0.385 (0.136) ***	0.075 (0.125)
Water Activities (jet-skiing, diving, surfing, other sea sports excluding swimming)	0.348 (0.128) ***	0.151 (0.129)
Swimming	0.140 (0.099)	0.500 (0.108) ***
Constant	2.429 (0.576) ***	0.600 (0.591)
Observations	697	388
Log-likelihood	-1892	-1133
AIC	3845	2331

*** indicates significant at 1% ** indicates significant at 5% * indicates significant at 10%

In both cases, the travel cost variable is negative and statistically significant indicating that as the cost of the trip rises the total number of days or nights decline. In comparison to the traditionally highest paying social class of A and B, being in social classes C1, C2 or D, or being in social class E or F predict fewer day trips in a marine or coastal area. However, no such correlation was found between these variables and the number of nights spent in a coastal area. Age did not play a significant role in either the number of day trips or nights a respondent took.

Household composition and location played an important role in the marine and coastal day trip model but less so in the overnight model. If a respondent lived with a partner, they tended to take more day trips than individuals who did not live with a partner. No significant relationship was found between living with a partner and the total number of nights spent in a marine and coastal area. The number of dependents aged between zero to four had a negative and significant impact on days spent in a coastal area but did not affect the number of nights. However, the number of dependents aged five to fifteen was associated with more day trips.

The proximity of a respondent's home to the coast had an impact on the number of day trips a respondent took. Following a priori expectation, the further a respondent lived from the coast the fewer day trips they took. No such relationship was found for the number of nights spent in a coastal area. Living in Dublin impacted both day trips and the number of nights. Respondents who lived in Dublin took fewer day trips but spent more nights by the coast.

The variables denoting that someone went on at least one day trip or one overnight trip present opposing results. If a respondent went on at least one coastal overnight trip during the year they tended to take more day

trips but if a respondent went on a day trip, they spent fewer nights by the coast. Likewise, being aware of the Wild Atlantic Way had significant but opposing effects on the number of coastal day trips taken as opposed to the number of nights spent in a coastal and marine area over the previous 12 months. In the coastal day trips model, being aware of the Wild Atlantic Way had a negative effect but for the number of nights, it had a positive effect.

The number of day trips taken was not impacted by whether someone travelled alone but was negatively associated with the number of nights one spent on the coast, suggesting, that overnight trips are more often taken by couples or groups. However, party size (the number of individuals in the travelling party) was not a significant predictor of the number of nights spent in a coastal area. The activities that a respondent undertook in the year of surveying also impacted both the number of day trips and the number of nights an individual took. Individuals participating in angling and water activities were positively and significantly associated with the number of days spent in a marine or coastal area, as was walking or cycling along the coast. Individuals participating in boating, walking or cycling along the coast and swimming were all more likely to have spent a greater number of nights by the coast.

Table 4 presents the consumer surplus welfare estimates for a day trip and an overnight stay. These estimates represent the welfare value an individual receives from a good above what they have actually paid. The per-person per day consumer surplus is presented in the center column and the per-person per night consumer surplus is presented in the right-hand column.

Table 4: Consumer surplus estimates for a day trip and per night for overnight trips

	Day trip	Per night on overnight trips
Consumer Surplus	€226.45	€367.51
95% Confidence Intervals	€143.40 - €309.50	€232.36 - €502.65
Expenditure	€85.80	€179.03

The consumer surplus associated with a day trip to a marine or coastal area was estimated at €226, with a confidence interval of €143 to €309. The per-night consumer surplus estimated for the average person was €368, with a confidence interval of €232 to €503. These results suggest a greater return in consumer surplus from each euro spent on day trips as opposed to overnight stays.

5. Discussion

Addressing this paper's core objective of conceptualizing domestic marine and coastal tourism, policy design and marketing strategies, the results, in concert with the previous literature, highlight several important facets of the market. Firstly, there seems to be an income/social class divide between those who participate in domestic marine and coastal tourism and those who do not. Secondly, marine and coastal tourism is undervalued as a tool for economic growth and may serve as a means to increase economic and environmental sustainability. Finally, the vibrant day trip market is almost entirely forgotten in policy creation.

The impact of social class and income can be seen, to some degree, in the results of every model. Social class, impacts both the decision to take an overnight stay and the number of day trips taken. Income impacts the decision to go on an overnight trip, the total number of nights spent in a coastal area and participation in the day-trip market. Previous studies have similarly found a positive relationship between income and demand for domestic tourism (Bernini and Cracolici 2016; Mayer and Woltering 2018).

Previous research highlights how domestic marine and coastal tourism has been undervalued as a means of dealing with issues within the industry. For example, the problem of a concentrated tourism season of a few months in the summer has been previously highlighted (ECORYS 2013). The authors also suggest that, across Europe, people have moved away from domestic tourism towards international tourism (ECORYS 2013). As a consequence, tourism activity has become highly concentrated around the summer months. The authors have noted this as a problem most heavily impacting the marine and coastal tourism market. The proposed solution of targeting nations with holiday months outside of the traditional European summer holiday season undervalues the potential of the domestic tourism market. If, for example, marine activities such as surfing, scuba diving, kayaking, cold water swimming, etc. were marketed to domestic tourists this could lead to an extension of the tourism period into the shoulder months.

Additionally, previous research (Hynes et al., 2020) indicates that marine active tourists spend more per trip than the average domestic tourist. This suggests that a revenue maximizing policy, particularly during a period like Covid-19 when only limited numbers are allowed on a business premises due to social distancing constraints, would be to encourage more marine and coastal tourism. Research by Ahearn and Hynes (2020), also indicates that marine and coastal tourism could be an "engine for recovery in the broader tourism sector" due to forced savings and a continued reluctance to travel abroad. Moreover, a recent report on the recovery from COVID-19 in the marine tourism sector (The Economist Group's World Ocean Initiative 2021) refers to air travel as an "albatross", suggesting that the emissions related to air travel may impede the sustainable development of this segment of the tourism industry. A heavier focus on domestic tourism may break the reliance on air travel, reducing carbon emissions. Further reductions in carbon emission could be made through better provisioning of public transport to coastal areas.

This study also demonstrates a vibrant day-trip market. This market, to an extent, has been ignored within tourism policy, in Ireland and internationally, partly because of definitional problems (Suriñach et al., 2019), a traditional lack of overlap between sports policy and tourism policy (Weed and Bull 2009) and more value placed on monies coming from other countries as domestic tourism is seen as a redistribution of wealth within a nation (Caust and Vecco, 2017). The aggregate value of domestic tourism being reported arguably undervalues domestic tourism as it often only counts overnight expenditure. Policy goals, concerning domestic tourism growth, are also frequently based on the growth of the overnight sector. By focusing on overnight stays as done in Ireland and by the EU, an opportunity to expand the lucrative day trip market may be missed.

6. Conclusion

The analysis presented within this paper illustrates the vitality of the domestic marine and coastal tourism market in Ireland. A large proportion of the sampled respondents can be considered marine and coastal tourists and many participate in both the day trip and overnight stay markets. However, in Ireland, like many other nations with coastal tourism, the domestic market has been overlooked. Further to this, the day trip market is often not included in national statistics related to tourism figures as only overseas and domestic overnight trips are considered tourist activity. Given the effects of COVID_19 on international travel, it may be fair to say that a greater emphasis should be placed on the benefits that a more concerted effort towards development of domestic tourism could bring.

However, in the present study, the analysis also suggests that Irish marine and coastal holidays have become a luxury for those better off. The results suggest this is particularly true of overnight stays. Consideration, therefore, needs to be given to policy that would ensure a reduction in the social class and income divide affecting participation in marine and coastal tourism. Reductions in the costs associated with marine and coastal tourism to those on lower incomes, tax rebates schemes and greater access to coastal amenities, including better provisioning of public transport to coastal areas, may help to reduce this inequality.

References

Ahearne, A. & Hynes, S. (2020) Challenges and Opportunities for Ireland's Major Ocean Economy Industries. Whitaker Institute Report, Galway. http://whitakerinstitute.ie/wp-content/uploads/2021/01/Challenges-facing-major-ocean-economy-industries.pdf

Arbulú I, Razumova M, Rey-Maquieira J, et al. (2021) Can domestic tourism relieve the COVID-19 tourist industry crisis? The case of Spain. *Journal of Destination Marketing & Management* 20. Elsevier: 100568. DOI: 10.1016/J.JDMM.2021.100568.

Athanasopoulos G and Hyndman RJ (2008) Modelling and forecasting Australian domestic tourism. *Tourism Management* 29(1). Pergamon: 19–31. DOI: 10.1016/J.TOURMAN.2007.04.009.

Athanasopoulos G, Deng M, Li G, et al. (2014) Modelling substitution between domestic and outbound tourism in Australia: A system-of-equations approach. *Tourism Management* 45. Pergamon: 159–170. DOI: 10.1016/J.TOURMAN.2014.03.018.

Bernini C and Cracolici MF (2016) Is participation in the tourism market an opportunity for everyone? Some evidence from Italy. *Tourism Economics* 22(1): 57–79. DOI: 10.5367/te.2014.0409.

Canavan B (2013) The Extent and Role of Domestic Tourism in a Small Island: The Case of the Isle of Man. *Journal of Travel Research* 52(3). SAGE Publications Ltd: 340–352. DOI: 10.1177/0047287512467700.

Canavan B (2016) Identification, motivation and facilitation of domestic tourism in a small island, Scandinavian Journal of Hospitality and Tourism, 16:4, 512-527, DOI: 10.1080/15022250.2015.1115370

Caust, J., & Vecco, M. (2017). Is UNESCO World Heritage recognition a blessing or burden? Evidence from developing Asian countries. *Journal of Cultural Heritage*, *27*, 1-9. DOI: 10.1016/j.culher.2017.02.004

Curtis JA (2003) Demand for Water-based Leisure Activity. *Journal of Environmental Planning and Management* 46(1): 65–77. DOI: 10.1080/713676706.

Downward P, Rasciute S and Muniz C (2020) Exploring the contribution of activity sports tourism to same-day visit expenditure and duration. *Journal of Sport & Tourism*, *24*(2): 111-126. DOI: 10.1080/14775085.2020.1784255.

Elliott LR, White MP, Grellier J, et al. (2018) Recreational visits to marine and coastal environments in England: Where, what, who, why, and when? *Marine Policy* 97. Pergamon: 305–314. DOI: 10.1016/J.MARPOL.2018.03.013.

Foo L-P, Chin M-Y, Tan K-L, et al. (2020) The impact of COVID-19 on tourism industry in Malaysia. *Current Issues in Tourism*, 1-5. DOI: 10.1080/13683500.2020.1777951.

Gössling S, Scott D and Hall CM (2020) Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, *29*(1): 1-20. DOI: 10.1080/09669582.2020.1758708.

Grogger JT and Carson RT (1991) Models for truncated counts. *Journal of Applied Econometrics* 6(3): 225–238. DOI: 10.1002/jae.3950060302.

Hall CM (2001) Trends in ocean and coastal tourism: the end of the last frontier? *Ocean & Coastal Management* 44(9–10). Elsevier: 601–618. DOI: 10.1016/S0964-5691(01)00071-0.

Hellerstein DM (1991) Using Count Data Models in Travel Cost Analysis with Aggregate Data. *American Journal of Agricultural Economics* 73(3). John Wiley & Sons, Ltd: 860–866. DOI: 10.2307/1242838.

Hendrik J, Jeuring G and Haartsen T (2017) The challenge of proximity: the (un)attractiveness of near-home tourism destinations. *Tourism Geographies* 19(1): 118–141. DOI: 10.1080/14616688.2016.1175024.

Hynes S, Aymelek M, Norton D, et al. (2020) A Survey of Domestic Coastal and Marine Tourism and Leisure Activity in Ireland Semru (No. 1154-2021-684)

Jeon CY and Yang HW (2021) The structural changes of a local tourism network: comparison of before and after COVID-19. *Current Issues in Tourism*. DOI: 10.1080/13683500.2021.1874890.

Mayer M and Woltering M (2018) Assessing and valuing the recreational ecosystem services of Germany's national parks using travel cost models. *Ecosystem Services* 31. Elsevier: 371–386. DOI: 10.1016/J.ECOSER.2017.12.009.

Moreno-Luna L, Robina-Ramírez R, Sánchez MS-O, et al. (2021) Tourism and Sustainability in Times of COVID-19: The Case of Spain. *International Journal of Environmental Research and Public Health* 18(4). Multidisciplinary Digital Publishing Institute (MDPI): 1–22. DOI: 10.3390/IJERPH18041859.

Parsons GR (2011) The Travel Cost Model., In *A primer on nonmarket valuation* (pp. 269-329). Springer, Dordrech DOI: 10.1007/978-94-007-0826-6_9.

Prayaga, P. (2017). Estimating the value of beach recreation for locals in the Great Barrier Reef Marine Park, Australia. *Economic Analysis and Policy*, *53*, 9-18. DOI: 10.1016/j.eap.2016.10.001

Suriñach J, Casanovas JA, André M, et al. (2019) An operational definition of day trips: Methodological proposal and application to the case of the province of Barcelona. Tourism Economics, 25(6): 964-986.

White MP, Elliott LR, Gascon M, et al. (2020) Blue space, health and well-being: A narrative overview and synthesis of potential benefits. *Environmental Research* 191. Academic Press: 110169. DOI: 10.1016/J.ENVRES.2020.110169.

Yang Y and Zhang HL (2015) Modeling tourists' length of stay: Does one model fit all? *Tourism Analysis* 20(1). Cognizant Communication Corporation: 13–23. DOI: 10.3727/108354215X14205687167464.

Xin Jin, Yang Xiang, Karin Weber & Yang Liu (2019) Motivation and involvement in adventure tourism activities: a Chinese tourists' perspective. Asia Pacific Journal of Tourism Research, 24:11, 1066-1078, DOI: 10.1080/10941665.2019.1666152