Irish Business Journal

Volume 13 | Number 1 Article 2

December 2021

An Analysis of the Micro-determinants of Domestic Holiday Expenditure by Households in the Republic of Ireland

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Cover Page Footnote

Thank you to ISSDA for making Household Budget Survey (HBS) data available via the Irish Social Science Data Archive www.ucd.ie/issda. The author would also like to thank the two anonymous referees for their helpful comments.

Introduction

The tourism sector in the Republic of Ireland is estimated to be worth €8.7 billion annually[1]; €2 billion of which goes to the Exchequer in the form of direct tourism related taxes (ITIC, 2018). Domestic tourism is key component of the overall Irish tourism sector. Domestic demand generates revenue in the sector during off-peak tourism periods and sustains a degree of investment in the Irish tourism product (Department of Transport, Tourism and Sport, 2015). Domestic tourism is also less vulnerable to external shocks than inbound tourism (MacFeeley, 2007). It has been claimed that it may be as important as inbound tourism for generating revenue (MacFeely, 2007). As such, an analysis of the domestic tourism market, and, more specifically, the identification of the domestic tourism consumer is warranted.

The purpose of this paper is to examine the micro-determinants of expenditure on domestic holidays by households in the Republic of Ireland (ROI). Using data from the Irish Household Budget Survey 2015-2016, instrumental variable (IV) estimators are used conduct the analysis.

This paper makes two contributions. Firstly, it adds to the academic literature by providing a detailed examination of the micro-determinants of domestic holiday expenditure in the ROI. While various aspects of the Irish tourism market have been studied; for example, food tourism (O'Riordan and Ward, 2014; O'Riordan et al., 2017), coach tourism (Ryan et al., 2014) and destination image (O'Leary and Deegan, 2003), the micro-determinants of domestic holiday expenditure have been overlooked. As such, it is a contribution.

Secondly, this paper is important from a policy and industry perspective. As this study focuses solely on the micro-determinants of domestic holiday expenditure, it gives the tourism industry in Ireland a better insight into who the domestic consumer is. This allows for tailored initiatives to be developed and policies put in place to grow the domestic tourism sector. Growing the domestic tourism sector is particularly important at present given the sharp decline in overseas visitors to Ireland in 2020 due to the Covid-19 pandemic. The extent of this decline is evident from Table 1, where it can be observed that arrivals to Ireland declined by figures in excess of 97% in April, May and June of 2020 relative to the same months in 2019.

[1] This includes the domestic market, carrier receipts and expenditure by overseas tourists in Ireland.

Table 1: Arrivals (thousands) from all countries to Ireland by Air and Sea 2019-2020

	2019	2020	% Change from 2019 to 2020
January	1213.2	1235.1	1.8
February	1187.3	1215.1	2.3
March	1465.9	635	-56.7
April	1712.9	16.1	-99.1
May	1818.9	28.3	-98.4
June	1941.1	57.1	-97.1
July	2225.9	227.3	-89.8
August	2256.5	362.6	-83.9
September	1871.1	254.4	-86.4
October	1727.1	N.A.	N.A.
November	1351.4	N.A.	N.A.
December	1372.6	N.A.	N.A.

Source: CSO (2020)
Note 1: N.A. designates data are not available yet.
Note 2: Growth rate calculations are author's own.

The next two sections provide an overview of recent growth in the number of domestic trips taken and a review of existing literature. This is followed by a discussion on data and methods used in Section 4. Results are presented in Section 5, followed by discussion and conclusions.

2. The Irish Context

The Department of Transport, Tourism and Sport (2015) released a policy outlining proposals aimed at growing the Irish tourism sector to 2025. The policy prioritises overseas tourism for growing the sector (Department of Transport, Tourism and Sport, 2015).

According to the policy:

> "(T)he small size of the domestic market, and the high existing level of domestic tourism consumption by Irish residents, limits the potential for further growth from domestic demand. Therefore, the tourism sector's best prospects for growth are in generating increased levels of overseas revenue."
>
> (Department of Transport, Tourism and Sport, 2015:14)

Recent figures, however, suggest that the domestic tourism market is worthy of greater attention. There has been a notable increase in the number of domestic holidays taken in the ROI from 2012 to 2018; see Table 2. The highest figure for the period was reported in 2018 when Irish residents took approximately 5.3 million domestic trips for holiday purposes. This is an increase of approximately 8.9% from 2017 (CSO, 2019a). Given the growth in the number of domestic holidays taken, the domestic segment of the tourism market should not be overlooked as an avenue for growing the tourism sector.

Table 2: Total Number of Domestic Trips by Irish Residents for Holiday Purposes 2012-2018

Year	Number (000)	Year-on-Year Growth Rate
2012	4036	
2013	4073	0.9%
2014	4436	8.9%
2015	4658	5.0%
2016	4870	4.6%
2017	4886	0.3%
2018	5323	8.9%

Source: CSO (2019a)
Note: Growth Rate Calculations are Author's Own

Furthermore, the reduction in overseas visitors to Ireland in 2020, due to the Covid-19 pandemic (see Table 1), means that domestic tourism needs to be prioritized to support the tourism sector. This study provides an insight into who the consumer is by analysing the micro-determinants of expenditure on domestic holidays. The micro-determinants are discussed in the next section.

3. Literature Review

The Irish tourism industry has received considerable attention in the literature and various aspects of the market have been studied; for example, food tourism (O'Riordan and Ward, 2014; O'Riordan et al., 2017), coach tourism (Ryan et al., 2014) and destination image (O'Leary and Deegan, 2003). Henry and Deane (1997) estimate the contribution of tourism to the Irish economy while Lyons et al. (2009) investigate the factors affecting the destination choice of Irish tourists across 26 countries.

From a macro-economic perspective, Walsh (1996) analyses the determinants of Irish export tourism demand. Specifically, she examines the factors that affect international visitor arrivals to Ireland from 1968 to 1992 and finds that price

and income are important determinants (Walsh, 1996). However, the micro-determinants of tourism expenditure have been overlooked in the Irish context. This is surprising given that the micro-determinants of tourism expenditure have been studied extensively in the international context; see for example, Agarwal and Yochum (1999); Nicolau and Más (2005); Alegre et al. (2013); Bernini and Cracolici (2015).

Furthermore, while extensive research has been conducted on the demand for international tourism, (focusing on countries other than Ireland), few studies have focussed specifically on domestic tourism demand (Athanasopoulos et al., 2014)[2]. In the Irish context, MacFeely (2007) provides and interesting statistical profile of the domestic tourism market. During the period 2000 to 2005, he finds that the domestic tourism, with a growth rate of 31%, outperformed inbound tourism, with a growth rate of 11%, in terms of the number of trips taken (MacFeely, 2007). MacFeely (2007) argues that domestic tourism may be as important as inbound tourism for generating revenue. As such, the domestic tourism sector in Ireland deserves considerable attention.

This is the first study to examine the micro-determinants of domestic holiday expenditure in Ireland, and as such, is a contribution to the literature. The next sub-section discusses the micro-determinants of tourism expenditure that are prevalent in the literature and develops the hypotheses to be tested.

3.1 Micro-determinants of Tourism Expenditure

Income is one of the most commonly cited determinants of tourism expenditure (Brida and Scuderi, 2013). Tourism is a normal good (Agarwal and Yochum, 1999; Brida and Scuderi, 2013; Aguilar and Díaz, 2019). As such, one would expect higher expenditure on tourism as incomes increase. The positive effects of income are observed in the literature; for example: Agarwal and Yochum (1999); Nicolau and Más, (2005); Alegre et al., (2013). International evidence suggests that tourism demand is income elastic, with international tourism being more elastic than domestic tourism (Eugenio-Martin and Campos-Soria, 2011). Higher incomes also increase the probability of taking or affording a holiday (Fleischer and Pizam, 2002; Alegre et al., 2010).

Hypothesis 1: Household disposable income has a significant positive impact on domestic holiday expenditure in Ireland.

[2] There are of course exceptions. See for example Eugenio-Martin and Campos-Soria (2011) and Athanasopoulos et al. (2014) who find evidence of a substitution effect between domestic and international tourism.

Educational attainment is commonly included as a determinant of tourism expenditure in empirical analyses (Brida and Scuderi, 2013; Marrocu et al. 2015). According to Bernini and Cracolici (2015), individuals with higher levels of education are likely to have higher incomes which can be spent on tourism. Those individuals also have an increased desire to enjoy new experiences and destinations (Bernini and Cracolici, 2015) and are more interested in travel (Eugenio-Martin and Campos-Soria, 2011). Alegre et al. (2010) find that having higher education levels has the greatest positive effect on the ability to afford a holiday.

Hypothesis 2: Educational attainment has a significant positive impact on domestic holiday expenditure in Ireland.

While health is not commonly considered, Alegre et al. (2010) believe that the inclusion of health-related data can enrich tourism demand studies. They find that health problems reduce the ability to afford a holiday. Similarly, Fleischer and Pizam (2002) find that a healthy individual has a higher probability of taking a holiday than an unhealthy one.

Hypothesis 3: Ill-health has a significant negative impact on domestic holiday expenditure in Ireland.

Gafter and Tchetchik (2017) argue that age can affect a traveller's physical ability to travel as well as their ability to afford to travel. International evidence suggests that age has a positive impact on tourism demand. Eugenio-Martin and Campos-Soria (2011) find that older individuals participate more in international tourism. Older tourists also generally stay longer than younger tourists; possibly linked to older tourists having more available time (Aguilar and Díaz, 2019). Fleischer and Pizam (2002) find that that the duration of holidays increases with age, peaking at the retirement age of 65 before then decreasing.

Hypothesis 4: Age has a significant positive impact on domestic holiday expenditure in Ireland.

Occupation is a 'highly relevant determinant' of tourism participation (Eugenio-Martin and Campos-Soria, 2011: 2526). Those studying, general managers and self-employed professionals are more likely to engage in international travel than fishermen, manual workers and the unemployed (Eugenio-Martin and Campos-Soria, 2011). Those working in offices are more likely to travel than manual workers (Bernini and Cracolici, 2015). In relation to tourist expenditure, students and the unemployed spend less than employed tourists (Marrocu et al., 2015).

Hypothesis 5: Different occupations have significant different impacts on domestic holiday expenditure in Ireland.

Variables capturing marital status are frequently included in analyses. They are, however, often statistically insignificant (Brida and Scuderi, 2013); see for example, Agarwal and Yochum (1999); Fleischer and Pizam (2002). There are, of course, some exceptions; for example, Nicolau and Más, (2005); Wu et al., (2013). Given the frequency of insignificant findings Hypothesis 6 is as follows:

Hypothesis 6: Marital status does not have a significant impact on domestic holiday expenditure in Ireland.

The number of children in the household is a constraint to travel (Eugenio-Martin and Campos-Soria, 2011). Agarwal and Yochum (1999) find that having more children reduces tourism expenditure. Alegre et al. (2010) find that the presence of children under the age of sixteen reduces the probability of affording a holiday. Households with children are also more likely to engage in domestic travel than international travel (Eugenio-Martin and Campos-Soria, 2011). However, once the decision to travel is taken, larger families engage in greater expenditure as they require more services (Nicolau and Más, 2005).

Hypothesis 7: The presence of children in the household has a significant negative impact on domestic holiday expenditure in Ireland.

Regional differentials in tourism consumption are evident in the literature. Eugenio-Martin and Campos-Soria (2011) find that living in coastal areas with good weather increases the chances of engaging in domestic tourism and decreases the chances of engaging in international tourism. Transport infrastructure may also play a role. The presence of an airport in the region increases the probability of travel (Eugenio-Martin and Campos-Soria, 2011; Bernini and Cracolici; 2015). Furthermore, Nicolau and Más (2005) suggest that those living in more densely populated cities have a greater need to holiday for relaxation purpose (Nicolau and Más, 2005).

Hypothesis 8: Location of the household has a significant impact on domestic holiday expenditure in Ireland.

4. Data and Methods

The data used are from the Household Budget Survey (HBS) 2015-2016. The purpose of the study is to examine patterns in household expenditure. Data on household income and household characteristics are also available in the survey. The survey was carried out between February 2015 and February 2016 by the Central Statistics Office (CSO) and focuses purely on private households in the

ROI (CSO, 2019b). The HBS is a multi-stage cluster sample, and the effective sample size was 17,098 households. The number of respondents was 6,839 households. The final response rate was 40%. This is the same response rate as that achieved in the HBS 2009-2010, but slightly lower than the 47% response rate of the HBS 2004-2005 (CSO, 2019b).

1440 households, 21% of respondents, reported expenditure on domestic holidays. Of this, there are 1439 valid observations. The dependent variable is 'household expenditure on domestic holidays'. This variable is constructed by combining household expenditure on package holidays in the ROI and expenditure on holiday accommodation in the ROI. Micro-determinants are included to explain the variation in 'household expenditure on domestic holidays'; see Table 3. Data on the Household Reference Person (HRP)[3] is used as a proxy for household characteristics including education, social group, age and marital status; see Table 3. This is consistent with Carroll et al. (2005); Eakins (2016); Bradfield and Crowley (2019). 'Disposable income' and 'expenditure on medical expenses/services and therapeutic equipment', which is a proxy for health of the household, are at the household level.

Regression analysis is used to test the eight hypotheses previously stated. Regression analysis attempts to explain the movements in the dependent variable, in this case domestic holiday expenditure, as a function of movements in the independent variables, the micro-determinants outlined in Table 3, through the quantification of an equation (Studenmund, 2001). It enables the generation of quantitative estimates of theoretical economic relationships (Studenmund, 2001). While a knowledge of economic theory and the tourism industry, in general, may facilitate predictions about which micro-determinants have a positive or negative impact on holiday expenditure, in order to quantify the impact of each micro-determinant sample data and a method of estimation is required (Studenmund, 2001). Regression analysis is the most frequently used method in econometrics to generate quantitative estimates of theoretical economic relationships (Studenmund, 2001). The STATA 14 software package is used to run the regression estimates.

[3] Household reference person is defined as "the person in whose name the accommodation was owned or rented. Where the mortgage/rent is jointly paid, the respondent with the highest income is taken as the reference person. In cases where household members receive an equal salary, the eldest member is taken as the reference person" (CSO, 2019b).

Table 3: Definitions of Variables used in Analysis

Dependent Variable	**Definition**
Household Expenditure on Domestic Holidays	Weekly Household Expenditure on Package holidays in ROI and Holidays in the ROI (accommodation) in €
Independent Variables	**Definition**
Household Disposable Income	Weekly Household Disposable Income in €
Household Expenditure on medical expenses/services and therapeutic equipment	Weekly Household Expenditure on medical expenses/services and therapeutic equipment in €
Highest Level of Education Completed by HRP	
No Formal Education and Primary Education	=1 if HRP has no formal education or primary education, 0 if otherwise
Secondary Education	=1 if HRP has secondary education, 0 if otherwise
Higher Education	=1 if HRP has higher education (including post leaving certificate, higher certificate, diploma, ordinary degree, honours degree, postgraduate degree or other), 0 if otherwise
Still Receiving Education	=1 if HRP is still receiving education, 0 if otherwise
Social Group of HRP	
Employers and Managers	=1 if HRP is an employer of manager, 0 if otherwise
Professional	=1 if HRP is a professional worker, 0 if otherwise
Non-Manual	=1 if HRP is a non-manual worker, 0 if otherwise
Manual Skilled, Semi-Skilled and Unskilled	=1 if HRP is a manual skilled, semi-skilled or unskilled worker, 0 if otherwise
Own Account Workers & All Other Gainfully Occupied & Unknown	=1 if HRP is an own account worker, is otherwise gainfully employed or their social group is unknown, 0 if otherwise
Farmers and Agricultural Workers	=1 if HRP a farmer or agricultural worker, 0 if otherwise

Table 3 continued: Definitions of Variables used in Analysis

Independent Variables	**Definition**
Age of HRP	
15-34 years	=1 if HRP is in the 15-34 years old age category, 0 if otherwise
35-44 years	=1 if HRP is in the 35-44 years old age category, 0 if otherwise
45-54 years	=1 if HRP is in the 45-54 years old age category, 0 if otherwise
55-64 years	=1 if HRP is in the 55-64 years old age category, 0 if otherwise
65-74 years	=1 if HRP is in the 65-74 years old age category, 0 if otherwise
75+ years	=1 if HRP is ≥75 years old, 0 if otherwise
Marital of Status of HRP	
Married	=1 if HRP is married (including a civil partner in a legally recognised civil partnership), 0 if otherwise
Dependent Children in Household	=1 if there are dependent children in the household, 0 if otherwise
Regional Location of Household (see Note 1)	
Border, Midland and West	=1 if household is in Border, Midland and West, 0 if otherwise
South West, South East, Mid-West, Mid-East excluding Dublin	=1 if household is in South West, South East, Mid-West, Mid-East excluding Dublin, 0 if otherwise
Dublin	=1 if household is in Dublin, 0 if otherwise

Source: CSO (2017)

Note 1: The regions appear in this form in the HBS 2015-2016. They are aggregated into the three regions above. While it would be interesting to consider the eight NUTS 3 regions separately, this level of disaggregation is not available in the dataset.

In order to carry out the analysis, Equation 1 is estimated:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \qquad \text{(Equation 1)}$$

Y_i is expenditure on domestic holidays by household i. X_i is a series of micro-determinants for household i as listed in Table 3. All continuous variables are in logs.

Equation 1 is estimated using instrumental variable (IV) estimators in order to control for possible endogeneity. Endogeneity may arise from simultaneity. For example, it is predicted that those with higher disposable incomes have higher expenditure on holidays. However, the variable may be endogenous if those spending more money on holidays prioritize holidays over working overtime,

leading to lower disposable income. An instrument is included for 'household disposable income'. The instrument is constructed using the three-group method which involves separating the endogenous variable into three groups of equal size, and then creating an instrumental variable which takes values of -1 if the observation is in the lowest third of the variable, 0 if the observation is in middle third and +1 if the observation is in the highest third (Kennedy, 2008: 160). Two IV estimators are used to check the robustness of the results: a Generalised Method of Moments (GMM) estimator and a Limited Information Maximum Likelihood (LIML) estimator. The results of both estimators should be similar. The difference-in-Sargan test (*C* statistic) is calculated post GMM estimation[4] to test for endogeneity. The null hypothesis of the *C* statistic is that the variables are exogenous. If the null hypothesis of exogeneity is rejected, the model should be treated as including endogenous variables and the GMM estimator would be more appropriate than an Ordinary Least Squares (OLS) estimator. The results of the analysis are presented in the next section.

5. Results

Descriptive statistics are presented in Table 4. The mean household weekly expenditure on domestic holidays is €29.86 with a standard deviation of €49.30. The mean weekly household disposable income is €1136.41 with a standard deviation of €713.81. The standard deviation also appears large relative to the mean for household expenditure on medical expenses/services and therapeutic equipment. This is due to some households having large medical bills while others do not incur medical expenditure on a weekly basis.

Over half of the HRP's have higher education (57.5%). In terms of the social groups, the largest proportion of HRP's is professionals (34.1%) while just 4.86% of the sample is farmers or agricultural workers. The distribution of the sample appears more evenly spread across the age categories relative to other variables. Just over 67% of HRP's are married with 37.1% of respondents having dependent children in the household. The largest proportion of households is in the South West, South East, Mid-West and Mid-East. This is unsurprising given that this regional classification covers a large geographic area.

[4] It is not possible to conduct a Difference-in-Sargan test after the LIML estimator.

Table 4: Descriptive Statistics for Variables used in Analysis

	Mean	**Standard Dev.**
Household Expenditure on Domestic Holidays (€)	29.86	49.30
Household Disposable Income (€)	1136.41	713.81
Household Expenditure on medical expenses/services and therapeutic equipment (€)	25.78	43.31
	No. of obs.	**%**
No Formal Education and Primary Education	119	8.27%
Secondary Education	405	28.14%
Higher Education	831	57.75%
Still Receiving Education	84	5.84%
Employers and Managers	211	14.66%
Professional	491	34.12%
Non-Manual	291	20.22%
Manual Skilled, Semi-Skilled and Unskilled	299	20.78%
Own Account Workers & All Other Gainfully Occupied & Unknown	77	5.35%
Farmers and Agricultural Workers	70	4.86%
15-34 years	182	12.65%
35-44 years	325	22.59%
45-54 years	305	21.20%
55-64 years	282	19.60%
65-74 years	225	15.64%
75+ years	120	8.34%
Married	971	67.48%
Dependent Children in Household	534	37.11%
Dublin	471	32.73%
Border, Midland and West (BMW)	350	24.32%
South West, South East, Mid-West and Mid-East	618	42.95%

Source: Calculations authors own based on data from CSO (2017)

The results are presented in Table 5. Both estimations provide very similar results. As such, the results appear robust. Given the results of the Difference-in-Sargan test (*C* Statistic), the null hypothesis of exogeneity is rejected and it can be concluded that Household Disposable Income is endogenous[5]. Therefore, IV estimators are appropriate[6].

In the case of categorical variables, the number or dummy variables included in the regression should be one less than the number of categories for which data are available. This is to avoid perfect collinearity. One category is left as the reference category and comparisons are made in relation to that reference category (Gujarati and Porter, 2009). The choice of reference category is arbitrary and there is no statistical justification for the choice of reference category[7] (Berk, 2020; Gujarati and Porter, 2009). The choice of reference categories varies substantially in the literature; see for example, Alegre et al. (2013); Marrocu et al. (2015); Rodríguez et al. (2018); Aguilar and Díaz (2019). It is important to note is that choice of one reference category over the other will not change the overall conclusion drawn from the analysis (Gujarati and Porter, 2009).

[5] The model was also estimated to include instruments for 'household disposable income' and 'household expenditure on medical expenses/services and therapeutic equipment'. The results of the difference-in-Sargan test (*C* Statistic) indicate that 'household disposable income' is endogenous (*C* Statistic: 4.288**) while 'household expenditure on medical expenses/services and therapeutic equipment' is exogenous (1.213). This estimation is not presented as 'household expenditure on medical expenses/services and therapeutic equipment' should be treated as exogenous and an instrument is not required.

[6] An OLS estimation was also estimated but is not presented as the IV estimators are more efficient. A Variance Inflation Factor (VIF) test was estimated post-OLS regression to test for possible multicollinearity. The mean VIF was 2.08, indicating that multicollinearity is not a problem.

[7] "There is no statistical justification for choosing one reference category or another. The choice is usually made on subject matter grounds to make the interpretations easier and the choice can easily vary from data analyst to data analyst" (Berk, 2020: 261).

Table 5: Results of IV Estimations of Equation 1

	GMM	LIML
Intercept	-0.251	-0.251
	(0.529)	(0.531)
Household Disposable Income	0.421***	0.421***
	(0.078)	(0.077)
Household Expenditure on medical expenses/services and therapeutic equipment	0.022	0.022
	(0.020)	(0.019)
Highest Level of Education Completed by HRP		
Reference Category: No Formal Education and Primary Education		
Secondary Education	-0.100	-0.100
	(0.116)	(0.124)
Higher Education	0.035	0.035
	(0.122)	(0.129)
Still Receiving Education	-0.036	-0.036
	(0.183)	(0.177)
Social Group of HRP		
Reference Category: Employers and Managers		
Professional	-0.123	-0.122
	(0.096)	(0.093)
Non-Manual	-0.266**	-0.265**
	(0.105)	(0.105)
Manual Skilled, Semi-Skilled and Unskilled	-0.199*	-0.199*
	(0.109)	(0.108)
Own Account Workers & All Other Gainfully Occupied & Unknown	-0.093	-0.093
	(0.147)	(0.155)
Farmers and Agricultural Workers	-0.365**	-0.365**
	(0.153)	(0.159)
Age of HRP		
Reference Category: 15-34 years		
35-44 years	-0.029	-0.029
	(0.111)	(0.108)
45-54 years	-0.025	-0.025
	(0.111)	(0.108)
55-64 years	0.217*	0.217*
	(0.119)	(0.116)
65-74 years	0.160	0.160
	(0.123)	(0.126)
75+ years	0.093	0.092
	(0.134)	(0.147)
HRP is married	0.031	0.031
	(0.076)	(0.078)
Dependent Children in Household	0.059	0.059
	(0.085)	(0.080)
Regional Location of Household		
Reference Category: Dublin		
Border, Midland and West	0.191**	0.191**
	(0.081)	(0.082)
South West, South East, Mid West and Mid East	0.059	0.059
	(0.071)	(0.071)
Obs	1439	1439
R^2	0.07	0.07
Wald Chi^2	103.83	108.35
P>Chi^2	0.000	0.000
C Statistic	4.34**	

Source: Calculations authors own based on data from CSO (2017). Notes: *** denotes significant at 99% level, ** denotes significant at 95% level, * denotes significant at 90% level.

For the education variable, the reference category is *No Formal Education and Primary Education.* This is the lowest level of education possible from the categories listed and is, therefore, left as the reference category. Using the lowest level of education is consistent with existing literature; see for example, Alegre et al. (2013); Marrocu et al. (2015); Rodríguez et al. (2018). For social group, the reference category is employers and managers. The choice of reference category is arbitrary. Large variations in the choice of reference category exist in the literature for variables capturing employment status or occupational group. See, for example, Alegre et al. (2010); Rodríguez et al. (2018); Aguilar and Díaz (2019) for variations in reference categories. Berk (2020) describes how choice of refence category can vary among analysts. Following Rodríguez et al. (2018); the youngest age category was chosen as the reference category for the age variable.

In terms of the dummy variable capturing marital status, the variable captures the presence of the condition rather than the absence of the condition. This is consistent with Nicolau and Más (2005); Wu et al. (2013). This is also the case with the variable capturing the presence of dependent children in the household and is consistent with Alegre et al. (2010) and Alegre et al. (2013). Dublin is used as the reference category for the regional location measure as it incorporates Ireland's capital and largest urban centre. However, the choice of reference category is arbitrary. As previously stated, the choice of reference category will not change the conclusions drawn (Gujarati and Porter, 2009).

6. Discussion of Results

As tourism is a normal good (Agarwal and Yochum, 1999; Brida and Scuderi, 2013; Aguilar and Díaz, 2019) one would expect higher expenditure on tourism as incomes increase. The results of this analysis support this. Household disposable income has a positive and significant impact on domestic holiday expenditure. A 1% increase in household disposable income leads to a 0.42% increase in domestic holiday expenditure. This conforms with Hypothesis 1 and is consistent with findings in previous studies which also find income to be a determinant of tourism expenditure; for example, Agarwal and Yochum (1999); Alegre et al. (2013); Nicolau and Más (2005).

There is evidence to suggest that the social group of the HRP is important. Relative to employers and managers, many categories of workers spend significantly less on domestic holidays. These include non-manual workers, manual skilled, semi-skilled and unskilled workers and farmers and agricultural. This may be linked to both the budget and time constraint; employers and managers may have more disposable income and a more flexible work schedule

that allows them to take more holidays, ultimately leading to higher expenditure. The occupational differences are consistent with previous findings; for example, Eugenio-Martin and Campos-Soria (2011) and Bernini and Cracolici, (2015). They also support Hypothesis 5.

Age influences domestic holiday expenditure. Those HRP's in the 55-64 age category spend significantly more on holidays relative to the 15-34 age category. The finding provides some evidence to support Hypothesis 4. Fleischer and Pizam (2002) contend that after the age of 55 individuals' constraints change. They argue that income rises until retirement age and peaks before decreasing to the level of pension payments which are received at the age of 65 in most countries. Furthermore, after 55, individuals have more leisure time as dependent children leave the household and their paid vacation days increase with seniority (Fleischer and Pizam, 2002). This viewpoint on income and leisure time may explain why the 55-64 age category spend more on domestic holidays. The lower income associated with pension payments may also explain the finding of statistical insignificance for the older cohorts.

The regional location of the household is also important. Relative to households in Dublin, those located in the BMW region spend significantly more on domestic holidays. Regional differentials in tourism consumption behaviour are also evident in international literature; for example, Bernini and Cracolici (2015). There could be several explanations for this finding. Bernini and Cracolici (2015) contend that it is not just socio-economic status of regions, such as employment and income, that contributes to the decision to take a holiday but also the territorial differences in natural and cultural amenities (Bernini and Cracolici, 2015). Furthermore, the literature suggests that the presence of an airport in the region increases the probability of travel (Eugenio-Martin and Campos-Soria, 2011; Bernini and Cracolici; 2015). While there are international airports in both regions; Dublin airport is substantially larger and offers more connections than Knock airport which is the BMW's largest airport. In 2018, for example, Knock airport handled 3,125 flight arrivals and 3,110 flight departures relative to Dublin airport's 111,492 arrivals and 111,200 flight departures (CSO, 2019c). As domestic tourism and international tourism are substitutes (Eugenio-Martin and Campos-Soria, 2011), those in the Dublin region may be spending on international tourism rather than domestic tourism which may be facilitated by greater levels of international connectivity from the Dublin region.

Alternatively, the different regional expenditure levels could be linked to the choice of holiday destination. High costs are one of the primary concerns for holidaymakers in Dublin (Dunne et al., 2007). Therefore, if those in the BMW region are holidaying in Dublin, it may be more costly for them than it is for a

Dubliner to holiday in parts of the BMW region. However, as data on the holiday destination of households in Ireland is not available in the dataset, we cannot be certain that this is the case.

Education is not statistically significant. This leads to the rejection of Hypothesis 2. While the finding is unexpected, it is not entirely inconsistent with previous literature. In the context of tourist expenditure, education variables are frequently found to be statistically insignificant (Brida and Scuderi, 2013; Marrocu et al., 2015).

Marital status is not statistically significant. This supports Hypothesis 6. The finding also supports Brida and Scuderi (2013) who argue that although variables capturing marital status are frequently included in analyses, they are often not statistically significant. Agarwal and Yochum (1999) also find that marital status does not significantly impact on tourist expenditure while Fleischer and Pizam (2002) find marital status does not significantly impact the decision to take a holiday.

Likewise, health status does not significantly impact on expenditure on domestic holidays. This is unexpected and does not conform with the expectations of Hypothesis 3, as ill-health is seen to be a constraint to tourism in the literature; see Fleischer and Pizam (2002); Alegre et al. (2010). However, it should be noted that the age profile of this study differs from that of Fleischer and Pizam (2002) who focus solely on Israeli individuals over the age of 55. They acknowledge that health deteriorates with age (Fleischer and Pizam, 2002) and it may be the case that the older cohort in their study are more constrained by ill-health than the households in this study which covers a broader age range. Furthermore, Alegre et al. (2010) use a different dependent variable than is used in this study. They use a binary variable to capture the ability to afford a holiday rather than actual expenditure on holidays. This may explain the difference in findings.

The presence of children in the household is not statistically significant. As such, it does not significantly impact on the levels of expenditure on domestic holidays. While this is not as hypothesized (see Hypothesis 7), it is not entirely inconsistent with the mixed findings in literature. For example, while Agarwal and Yochum (1999) find that having more children reduces tourism expenditure, once the decision to travel is taken, it is suggested that larger families engage in greater expenditure as they require more services (Nicolau and Más, 2005). As such, both forces may contribute to the insignificant finding.

Conclusions

The recent growth in the number of domestic trips taken for holiday purposes suggests that increasing domestic tourism is an avenue for growing the Irish tourism sector. Furthermore, the dramatic decrease in overseas visitors to Ireland in 2020 due to the Covid-19 pandemic has demonstrated the risks, for the sector, associated with being over-reliant on international tourism. Growing the domestic tourism market is now critical for sustaining jobs and businesses within the sector. Using data from the HBS 2015-2016, this study examines the micro-determinants of domestic holiday expenditure in the ROI.

Based on the findings, a clearer picture has emerged as to what categories of consumers are spending the most on domestic holidays. The results reveal that disposable income and having a HRP in the 55-64 age categories positively impact on domestic holiday expenditure. Occupation differentials are also evident. Non-manual workers, manual skilled, semi-skilled and unskilled workers and farmers and agricultural workers spend significantly less on domestic holidays relative to employers and managers.

While the literature suggests that regional differentials in tourism expenditure can exist (Bernini and Cracolici, 2015; Eugenio-Martin and Campos-Soria; 2011), the regional differentials in domestic holiday expenditure found are particularly interesting. Those in the BMW region spend significantly more on domestic holidays than those in the Dublin region. This may be related to the greater availability of international linkages available from Dublin, and as such, those in the Dublin region opting to spend more on international holidays than on domestic holidays. However, as international tourism expenditure is beyond the scope of this paper, further research is needed to determine if this is the case. Alternatively, the expenditure differentials could be related to destination choice in Ireland. As data on destination choice are not available in the HBS, it is not possible to explain exactly why this finding holds. Future primary research would be useful to investigate these regional differentials further.

Given that the results offer a greater knowledge of the domestic holidaymaker, initiatives could be put in place by the tourism industry to attract more consumers. This may involve, for example, accommodation services advertising more in local media in the BMW region or offering more “over 55” packages. While these consumers are among the highest spenders in terms of domestic holiday, it is also important not to overlook other segments of the market when developing initiatives.

Those with higher disposable incomes spend more on domestic holidays. While marketing and promotional campaigns may be put in place to attract those consumers, direct incentives could be used to encourage domestic holiday expenditure amongst those with lower disposable incomes. The Hungarian

Szechenyi Recreation Card is a prime example. The Hungarian government introduced the programme to stimulate domestic tourism which encouraged employers to provide non-wage benefits to workers including holidays and recreational activities (World Travel and Tourism Council, 2018). Tax reductions are granted to employers that issue the cards to their employees (OECD, 2019). Initially, when introduced in 2010, the maximum value of the card was €1000 per year and was redeemable on paid accommodation (OECD, 2014). The maximum value was later increased to €1500, and from 2012, it was redeemable against accommodation and domestic travel packages, catering services and leisure services (OECD, 2014). The introduction of a similar benefit-in-kind for Irish workers would encourage them to holiday domestically, leading to an increase in expenditure in the domestic tourism sector through the employer's contribution and any outstanding costs associated with the holiday that the workers would incur themselves.

It is important to note that this is a first attempt at understanding the micro-determinants of domestic holiday expenditure in ROI. The results provide a detailed insight into who is spending most on domestic holidays, but it does not tell us why they are spending. Rodríguez et al. (2018) classify three sets of characteristics that affect tourism behaviour; personal characteristics, travel characteristics and destination attributes. While this study provides a detailed insight into personal characteristics, lack of available data means it is not possible to consider travel characteristics, such as travel purpose, or destination attributes, such as quality of services at the destination or loyalty to a specific destination. This is a limitation of this study. The "why" question is particularly interesting and is worthy of research. Primary research would enable a detailed understanding of the motivations of the domestic consumers. Understanding why the consumers identified in this study are spending more is pivotal to developing a coherent long-term plan for growing the domestic tourism sector.

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