Re-thinking the economic contribution of tourism: case study from a Mediterranean Island

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Abstract

The article introduces an integrated market-segmentation and tourism yield estimation framework for inbound tourism. Conventional approaches to yield estimation based on country of origin segmentation and total expenditure comparisons do not provide sufficient detail, especially for mature destinations dominated by large single-country source markets. By employing different segmentation approaches along with Tourism Satellite Accounts and various yield estimates, this paper estimates direct economic contribution for sub-segments of the UK market on the Mediterranean island of Cyprus. Overall expenditure across segments varies greatly, as do the spending ratios in different categories. In the case of Cyprus, the most potential for improving economic contribution currently lies in increasing spending on 'food and beverages' and 'culture and recreation'. Mass tourism therefore appears to offer the best return per monetary unit spent. Conducting similar studies in other destinations could identify priority spending sectors and enable different segments to be targeted appropriately.

Key words: *tourism yield; market segmentation; mature destinations; tourism satellite accounts; Mediterranean;*

Introduction

As a key factor driving tourism development, the economic impact of tourism has received considerable attention from tourism academics. One of the most important parameters that forms the basis of analysis of economic impact is visitor spending (Wilton and Nickerson 2006). Visitor spending typically includes expenditure on transportation, lodging, food and beverages, gifts and souvenirs, and entertainment and recreation (Jang et al. 2004). The resulting flow of currency into a destination's economy has a significant influence on economic output indicators such as the value added by tourism, profit, national income, tax income and employment (Klijs et al. 2012).

It is well established that, depending on the kinds of products or services being purchased and the direct and indirect linkages of the respective economic sectors (Cai, Leung, and Mak 2006), the same amount of overall expenditure can have a significantly different economic impact (or yield) (Dwyer and Forsyth 1997; Pratt 2012). Quantifying and understanding the economic impact of different types of tourism activities ultimately informs residents, consumers, businesses, and governments with regards to the most effective marketing techniques and best planning of facilities and amenities (Mok and Iverson 2000; Frechtling 2006; Dwyer and Thomas 2012).

The study of expenditure patterns inevitably leads to comparisons between different tourist types, each of which typically represents a distinct market segment. Expenditure patterns are used to estimate the size of each travel market in economic terms as well as to identify sets of attributes which account for differences in expenditure characteristics between market segments (Jang et al. 2004). An effective yield comparison between market segments relies on appropriate ways to characterize different tourist types in the first instance; otherwise the comparison risks being meaningless. There is, however, no consensus over which yield measures or segmentation criteria are best employed in order to perform comparisons between tourist types. The choice will usually depend on the available data, the specific aims of the comparison and the nature and stage of development of the destination. Segmentation of visitors has traditionally been based upon their geographic origin, since country of origin (COO) has most often served as the basis for collecting and interpreting tourism data (Reid and Reid 1997; Andriotis, Agiomirgianakis, and Mihiotis 2008).

A critical challenge facing mature tourism destinations worldwide is how to maximize the economic impact of tourism spending (Alegre and Cladera 2006; Kozak and Martin 2012). Many mature Mediterranean 'sun and sand' holiday destination like Malta, southern Spain and the Balearic Islands, Greek islands and more recently Turkey, are following the well-documented path towards greater product diversification in an attempt to target the most profitable visitors (Bramwell 2004; Kozak and Martin 2012).

Established destinations tend to already have significant numbers of repeat visitors (Alegre and Cladera 2006), typically from large single-country source markets with a preference for the destination due to factors such as proximity, affordability or other historical links. Most mature destinations in the developed world regularly collect expenditure data through passenger surveys, reflecting the long-term importance of tourism as a dominant economic sector. By combining appropriate segmentation techniques and tourism yield measures tailored to the destination in innovative ways, it is possible to explore the profitability of different subgroups within large source markets.

The aim of the study is to explore possible ways in which currently available tourism data in a Mediterranean mature destination could be used to supplement existing COO segmentation with tourist typologies based on other tourist characteristics and consumption patterns. The island of Cyprus, an established European Union (EU) destination in the eastern Mediterranean, represents an ideal case study as it is a small independent country, with a wealth of data from passenger surveys as well as fully-fledged Tourism Satellite Accounts (TSAs) (Eurostat 2009). Furthermore, tourism is dominated by a large source market, the United Kingdom (UK), which is chosen as the focus of this case study.

In a similar way to Pratt (2012), this paper heeds the call made earlier by Dwyer et al. (2007) for more studies focusing on estimating yield for different destinations and different market segments. By comparing the results from different segmentation techniques and yield indicators to explore important COO markets, this study contributes to the existing body of literature by arguing for an integrated and flexible segmentation/yield approach, with an application to a mature destination with a dominant country source market. It is envisaged that this framework would potentially be generalizable to other mature destinations where, despite a relative abundance of expenditure-related data, a detailed understanding of the economic impact of different COO subgroups is currently lacking. This would provide a better insight on how to make the most out of existing tourism to the destination.

Market segmentation

The tourism sector is highly heterogeneous and offers a plethora of different products which cater for different tastes, budgets and times of the year – reflecting the fact that tourists are not homogeneous in terms of their desires and behaviour (Hsu and Kang 2007). Understanding and explaining the motives and characteristics of different ‘types’ of tourist has become a long-standing research objective, with a considerable number of empirical studies exploring similarities and differences in terms of travel patterns and attitudes between tourist groups (Kozak 2002). Forming and exploring market groups or segments has become a popular managerial practice known as *market segmentation* (Chen 2003). Dolnicar et al. (2012) argue that focusing on smaller and more manageable subgroups increases the chances of marketing success.

Market segmentation encompasses the choice of techniques and statistical procedures that allow the division of a heterogeneous market into relatively homogeneous sub-groups (Mok and Iverson 2000). Depending on the available data and desired outcome, one or more segmentation criteria may be used with the main choices in the literature being geographical (such as COO segmentation), socio-economic, demographic, psychographic (activities and opinions) and behavioral (Bigné, Gnoth, and Andreu 2007). Two principal approaches are recognised in the literature: *a priori* and data-driven (Dolnicar 2004). In *a priori* (or ‘commonsense’) segmentation, the researcher chooses a variable or variables of interest and then classifies tourists according to those pre-defined criteria. In data-driven (or *post hoc*) segmentation, a range of variables are used together to derive groups (segments) based on quantitative techniques data analysis such as cluster analysis (Najmi, Sharbatoghlie, and Jafarieh 2010).

The two approaches may also be combined to give rise to hybrid segmentation techniques. This usually occurs where a large commonsense segment (such as a large single-country source market) is further split into data-driven subgroups. According to Dolnicar (2004), combining *a priori* and *post hoc* segmentation in creative ways allows for a more original segmentation of tourists, and thus for the identification of niche markets that have yet to be exploited. One of the aims of the present study is to explore this option.

Many tourism boards around the world, including the Cyprus Tourism Organization (CTO), rely on COO segmentation for targeting and marketing. The advantage of this straightforward

a priori approach is the creation of segments which may be targeted through a common language and national media channels (Dolnicar 2008). However, according to Park and Yoon (2009), the purpose of segmentation is to promote improved efficiency in supplying products which meet the identified needs of target groups, with the ultimate objective usually being to make the most profit from selected target markets (Jang, Morrison, and O'Leary 2002). COO segmentation may capture some cultural differences in preferences and spending patterns between tourists (Kozak 2002; Becken and Gnoth 2004). Nonetheless, the intra-group variation within COO segments is often considerable and may result in other important descriptors being overlooked (Flognfeldt 1999).

This latter point is highly relevant to destinations where inbound tourism is dominated by certain large and extremely diverse COO segments. Some prominent examples are Caribbean and Mexican destinations for United States tourists, New Zealand for Australians, Thailand, Taiwan, Macau and Hong Kong for the Chinese, and Malta, southern Spain and Cyprus for the British. In such cases, enhancing COO with other segmentation techniques is not only beneficial but essential.

Tourism yield estimates using TSAs

Segmentation studies focusing on the characteristics of big spenders have gained popularity in the tourism literature in recent years (Shani et al. 2010). Nevertheless, expenditure-based segmentation studies usually only consider total expenditure, with their main objective being to determine the demographic and behavioral characteristics of high-spending tourists, rather than to examine expenditure patterns and the economic contribution from different segments (Pratt 2012). Two travellers in the same area at the same time may choose to spend their money in entirely different ways (Legohérel 1998). The same amount of expenditure can, in fact, generate a different amount of gross value added (GVA)¹ as well as a different number of jobs depending on which products are being consumed (Salma, Suridge, and Collins 2004).

Although the precise definition of yield depends on the context and degree of resolution required (Becken and Simmons 2008), tourism yield most commonly refers to the financial or economic gain to a destination from attracting particular types of tourists (Dwyer, Forsyth, and Dwyer 2010). The simplest and perhaps still most commonly used measure for yield is total expenditure. However, total expenditure fails to indicate where and how the money is

spent and how the benefits from the yield are spread throughout the economy (Dwyer and Forsyth 2008). Destination Marketing Organizations (DMOs) frequently collect expenditure data through various kinds of tourist expenditure surveys (Frechtling 2006). It is therefore possible to use such data to disaggregate total expenditure for each market segment into distinct spending categories. After matching spending categories to the TSA classification, expenditure data can be used to provide more meaningful estimates of tourism yield.

TSAs are satellite accounts used as an adjustment to a country's national accounts to measure the economic significance of tourism activities, which are otherwise not separately identified in the conventional national accounting framework. TSAs are constructed using a combination of demand data from tourism surveys with data on the supply of goods and services taken from the System of National Accounts (SNA) framework (Smith, Webber, and White 2011). TSAs essentially aggregate the share of overall activity in an economy that is directly linked to tourism demand. Through effectively linking tourism supply and demand in a consistent and balanced framework which uses the same definitions and approaches as those agreed for the measurement other economic activities (Bryan, Jones, and Munday 2006), TSAs provide a consistent tool for measuring the performance of the tourism sector.

From a country or DMO perspective, the wealth of information contained in TSAs can be used to identify the more profitable types of tourism, providing valuable insight that may then be used to inform and improve tourism policy (Jones, Munday, and Roberts 2003). By using the appropriate tables in TSAs, several measures of tourism yield can be estimated – such as tourism GVA (TGVA) ², direct contribution to GDP and contribution to employment in tourism industries.

Different measures of yield (such as GVA or employment generated) are unlikely to provide consistent rankings for different market segments (Dwyer et al. 2007; Becken and Simmons 2008), particularly since these measures can be estimated on a total market segment, contribution per visit, or contribution per night basis (Salma et al. 2004). An analysis using a combination of different yield measures therefore provides a more complete understanding of economic impact. Total market segment contribution is not generally the preferred definition as it tends to merely highlight the importance of large markets. Recent yield studies (Lundie, Dwyer, and Forsyth 2007; Dwyer and Forsyth 2008) combine yield per day and yield per trip in order to identify high yield markets dominated by long-staying high spenders.

The main limitation of yield estimates derived directly from TSA statistics is that they do not include indirect or induced effects (inter-industry and economy-wide impacts) on income and employment (Ahlert 2008), which can only be estimated through economic modelling approaches. Despite this restriction – which does not allow TSAs to capture additional value added from industries producing intermediate inputs used to make goods and services consumed by tourists – they are considered to be an appropriate method where the study objective is to determine direct economic contribution from tourism (Frechtling 2010).

TSAs provide invaluable information with respect to where tourists spend their money, as well as the extent to which different sectors directly benefit and depend on their spending (Hara 2008) – making them an appropriate tool for describing the size and overall significance of the tourism sector. As the present study is an initial attempt to estimate yield without the use of economic modelling, TSA-derived yield estimates of direct economic impact are deemed satisfactory as a first step, and already represent a substantial improvement over simple expenditure measures.

Methodology

Context - Tourism in Cyprus

Cyprus is the easternmost island nation in the Mediterranean Sea. Similarly to other islands in the region, a favourable climate, natural beauty and rich history have made the island a popular tourism destination. As in the case of many other Small Island Tourism Economies (SITEs) ³, the development of tourism has been a remarkable success story, with the establishment of tourism as the dominant economic sector since the early 1980s (Sharpley 2001). However, the growth in tourism revenue experienced in previous years appears to have come to a halt after the turn of the millennium (Adamou and Clerides 2009). Some degree of recovery occurred in 2011 and 2012 (CYSTAT 2013), largely because of a ‘boom’ in business-driven arrivals from Russia. However, there is currently no evidence that this trend will persist, especially in light of the recent financial crisis faced by Cyprus’ major banks.

As in other mature tourism destinations, key factors that have contributed to the fall in tourism revenue have been: rising costs as Cyprus has become wealthier (Ayres 2000; Clerides and Pashourtidou 2007), failure to attract higher-spending tourists (Adamou and Clerides 2009), emergence of cheaper mass tourism destinations in the area (Saveriades

2000), over-reliance on foreign operators resulting in revenue leakage (Ayres 2000), ageing infrastructure (Sharpley 2003), and, in more recent years, the global financial crisis (Boukas and Ziakas 2013).

At present, Cyprus appears to be following the example of other mature Mediterranean destinations (Clerides and Pashourtidou 2007; Adamou and Clerides 2009), by moving towards a better quality tourism product in a bid to attract a ‘higher spending’ clientele. While the drive towards diversification may be justified and somewhat overdue (Andronikou 1986), others have reasoned that it may be more prudent to focus on maintaining and improving the existing tourism product as part of a more flexible adjustment strategy (Ayres 2000; Sharpley 2003).

The present study makes a timely contribution to the debate by estimating tourism contribution from established segments, and providing management suggestions to allow the maximisation of yield through potentially keeping and enhancing spending from the large pool of repeat visitors. In the absence of any sound segmentation and yield estimates, targeting and marketing to all UK tourists, who accounted for 37 to 58% of annual inbound tourism to Cyprus over the last two decades (CYSTAT 2012), ignores the considerable heterogeneity within this large and important source market. Similarly, in the absence of any rigorous quantification, the *a priori* assumption that all mass or package tourism has a low yield remains an oversimplification. Exploring segmentation possibilities within the UK market should allow more useful management implications to be drawn.

General Overview

The methodological approach is comprised of three main steps. Step 1 involved pre-processing the passenger survey dataset in order to render it suitable for segmentation analysis. Step 2 involved COO segmentation followed by expenditure-based segmentation as well as cluster analysis of the UK market. The final step was to estimate tourism yield for each of the market segments established in step 2.

Datasets and pre-processing (step 1)

The proposed framework requires TSAs along with passenger survey data (which includes expenditure in different categories). According to the UNWTO (2010), 60 countries had already produced or were in the process of developing TSAs as of early 2010, with more countries likely to have been added to this list since then. Eurostat reports that, despite

methodological discrepancies between different national TSAs, most countries in the EU have fully-fledged TSAs (Eurostat 2010). This includes key Mediterranean mature destinations such as Portugal, Spain, Italy, Greece, and Cyprus, all of which have the immediate potential to adopt the framework outlined in the present study.

Passenger survey data that includes expenditure is typically collected through exit surveys: tourists are asked to provide an estimate of total and detailed expenditure during their entire visit, or, alternatively, an estimate of what they spent on the last day of their trip (Wilton and Nickerson 2006). According to Frechtling (2006), such expenditure data are widely available for many destinations. Ideally, expenditure categories in the survey data must match those of the TSAs, but even when this is not the case, sector aggregation and matching may be used to address the issue (as shown in this paper – see Figure 2). Exit surveys also record a wealth of socio-demographic and behavioral characteristics that allow for examining the relationship between tourist choices and expenditure patterns.

The present study uses the latest edition of the Cyprus TSA from 2007 along with the corresponding passenger survey data for the same year. Both were supplied by the Cyprus Statistical Service (CYSTAT); the exit surveys were administered through questionnaires at the island's two major airports (CYSTAT 2011). The survey data was obtained in a raw form to allow alternative methods of segmentation other than COO to be used. In the pre-processing stage, all desired variables were merged into one dataset for the entire year using the software package R. All expenses were converted from reported foreign currencies to Cypriot pounds (used in the TSA) based on monthly currency exchange rates provided by the CTO. The total sample size is 30,849 cases (which corresponds to 60,456 individuals). This represents a very large dataset compared to previous segmentation studies.

Segmentation (step 2)

The study used two types of *a priori* segmentation (COO and expenditure-based segmentation) as well as a data-driven technique (see Figure 1). The present study is the only study in the literature, to our knowledge, that compares two different segmentation methods in order to divide up a large source market. The objectives of the segmentation stage were to explore the diversity within the UK market segment, and to create sub-segments of a size that would allow yield comparisons between them and with other COO segments. Journey costs⁴ were removed as these are more likely to benefit international companies and firms within the tourist's COO as opposed to the local economy (Legohérel and Wong 2006). For package

tourists, local expenditure consists of the cost of the package (minus 15% to reflect foreign agency profits), plus any additional expenses minus estimated journey costs. For non-package tourists, local expenditure consists of all costs minus journey costs. Data analysis was carried out using SPSS version 19.0.

The first *a priori* segmentation performed was the traditionally used COO segmentation which created tourist groups based on their COO (see Figure 1, left). Cross-tabulation of variables allowed profiling of the main COO segments to determine their mean expenditure in each of the spending categories.

The UK market segment was then further segmented into three groups using expenditure-based segmentation (shown in Figure 1, top right). This commonly used *a priori* technique divides visitors into three equal-sized segments based on the frequency distribution of the total expenditure variable (Mok and Iverson 2000; Shani et al. 2010). Following the recommendation by Legohérel & Wong (2006), daily expenditure was chosen as the preferred segmentation criterion. ANOVA and chi-square (χ^2) were used to confirm that there are significant differences in the means between the spending groups for all spending categories as well as for all the other categorical and continuous variables.

Finally, a data-driven segmentation of the UK market was performed using the SPSS TwoStep® cluster analysis (see Figure 1, bottom right). This technique was chosen because it can simultaneously handle both categorical and continuous variables, and was also specifically designed to handle large datasets (SPSS 2001). It consists of pre-clustering cases into many small sub-clusters, followed by clustering the sub-clusters into the desired number of clusters (Hsu, Kang, and Lam 2006). In the pre-clustering stage, observations are read and processed to decide whether they should be combined with an existing pre-cluster, or whether a new pre-cluster should be created, based on a Log-likelihood distance measure. In the clustering stage, pre-clusters are then grouped through an agglomerative clustering algorithm (Huang and Han 2008). The goal of the clustering procedure was to use variables other than the expenditure categories in order to produce three homogeneous segments. A number of variable combinations were tested in order to arrive at a consistent solution with a good degree (>0.5) of intra-group cohesion and inter-group separation⁵. ANOVA and chi-square (χ^2) were used to confirm that there are significant differences between the groups across all expenditure categories.

[Figure 1]

Tourism yield estimates (step 3)

To estimate yield from different segments, the paper employed the methodological approach introduced by Tourism Research Australia (Salma and Heaney 2004). A similar approach is also found in Becken et al. (2007) and Becken and Simmons (2008), who estimate yield for previously established tourist segments in New Zealand. The Cyprus TSAs contain data on both tourism value added (TVA) and employment contribution for nine different spending categories. TVA is the financial contribution (value added) that ‘tourism dollars’ support within domestic industries, and employment contribution refers to the number of jobs directly dependent on ‘tourism dollars’ (Jones, Munday, and Roberts 2009). Combining the value added and employment contribution per sector to give total values per segment provides two valuable measures of yield. These are presented in a matrix form (as in Figures 3 and 4) to compare daily yield with total trip yield for different market segments (Dwyer, Forsyth, and Dwyer 2010), providing an intuitive visual tool where trade-offs and synergies between indicators become apparent.

Value added and employment contribution are also compared to tourism consumption⁶ in order to provide two composite indicators of yield, namely contribution to GVA and employment per unit of currency of tourism consumption at the market segment level (Salma and Heaney 2004; Dwyer, Forsyth, and Dwyer 2010). Yield is therefore estimated as tourism GVA per Cyprus Pound⁷ (CYP) of tourism consumption (TGVA per CYP) and as the number of full-time equivalent (FTE) jobs generated per million CYP tourism consumption (FTE jobs per million CYP). The steps involved in performing these calculations were as follows:

- a) The expenditure categories for each segment established in step 2 were aggregated and merged according to Figure 2. The final five spending categories used are accommodation and accommodation-related spending (1), food/beverage/tobacco (2), transport (3), culture and recreation (4) and all other products including shopping (5).
- b) For each segment, the proportion of expenditure compared to the average tourist expenditure in each category was calculated.
- c) The proportions were applied to TSA estimates of aggregate tourism consumption, GVA and employment contribution in each sector/industry.
- d) The individual sector estimates were added up in order to provide estimates of mean total consumption, mean total GVA and mean employment contribution from each segment.

- e) Finally each market segment GVA and employment contribution was divided by tourism consumption to provide per visitor per day averages corresponding to each market segment.

[Figure 2]

Results and analysis

Segmentation results

Tables 1 and 2 show the average characteristics for each segment. The mean value is used for the expenditure categories and continuous variables whereas the mode (and its percentage within the segment) is used for categorical variables⁸. The analysis concentrates on selected findings.

The COO segmentation (Table 1) reveals that the average UK tourist is fairly similar to the average inbound tourist. However, the UK tourist is more likely than the average to be a repeat visitor, over 40 years old, travel with family or friends, visit the island for a holiday, stay slightly longer and spend less. Other COO tourist characteristics appear to be consistent with those seen in CYSTAT national reports and are therefore not discussed further here.

In the expenditure-based segmentation of the UK market (Table 2), 'low spenders' are defined as those who spent less than 18.78 CYP (approximately 32 EUR) per day, 'medium spenders' as those who spent between 18.78 and 36.98 CYP (approximately 63 EUR) per day, and 'heavy spenders' as those who spent more than 36.98 CYP per day. All ANOVA and chi-square results for differences between segments in all variables were significant at the 0.01 level. 'Low spenders' mostly visit Cyprus on a package holiday during the high season and stay in mass tourism resorts. 'Medium spenders' and 'high spenders' share similar characteristics; these tourists predominantly visit family holiday resorts and tend to be over 40 years old. Most 'high spenders' travel non-package, and spend more in all categories compared to the other two segments – with the most significant difference in spending occurring in the accommodation category.

[Table 1]

Table 2 also shows the results of the cluster analysis. The best combination of clustering variables was achieved using the variables with an asterisk. This produced a 0.65 value of intra-group cohesion and inter-group separation. The largest segment (cluster 3), which represents 49% of the UK market (and 26% of total inbound tourism to Cyprus), is composed only of package tourists and can, therefore, be considered representative of UK package tourists. The characteristics and spending patterns of cluster 3 appear to be a mix of those of the ‘low spenders’ and ‘high spenders’ segments established previously. Cluster 3 is given the name ‘budget mass tourism’ to reflect its characteristics and spending patterns.

Cluster 1 (18% of the UK market and around 10% of the total) is mostly composed of non-package tourists travelling alone. The spending patterns of this segment appear to be similar to those of ‘high spenders’. Cluster 1 exhibits less seasonality, and a higher percentage of repeat visitors (80%).. Cluster 1 is representative of more upmarket tourism and is thus dubbed ‘luxury tourism’.

Cluster 2 (33% of the UK market and over 17% of the total), has characteristics which are more similar to those of the average tourist or the average UK tourist shown in Table 1. Cluster 2 tourists are mostly repeat visitors (81%), come in season with family or friends, and are not on package deals. This cluster is labelled ‘average non-package UK’ to reflect the highly average nature of this cluster.

In terms of the expenditure categories, luxury tourists (cluster 1) spent double on ‘accommodation’ compared to average non-package UK tourists (cluster 2) and more than four times as much as budget tourists (cluster 3). They also spent considerably more in the ‘transport’ category (112% more than cluster 2 tourists and 180% more than cluster 3 tourists) and in the ‘other’ category (84% more than cluster 3 tourists and 107% more than cluster 3 tourists), which includes various kinds of shopping. By contrast, spending in the ‘food and beverage’ category is only 33% higher than in cluster 2 and only 29% higher than in cluster 3.

[Table 2]

Tourism yield

Yield estimates for all market segments are presented in Table 3. In terms of total GVA (column 2) and employment contribution per day (column 3) the results show that, in general, market segments with high tourism consumption (column 1), such as Greece, UK (high) and

UK (luxury), perform the best in these indicators. However, in terms of TGVA per CYP, it is Sweden (0.51), UK low spenders (0.51) and the UK ‘budget’ (0.50) segments that rank in the top three positions. UK ‘budget’ and UK low spenders are also the top performers in FTE jobs per million CYP, with 44.65 and 43.92 respectively. The segments with the highest total tourism consumption – Greece, UK (high) and UK (luxury) –rank lowest in terms of both composite yield indicators (columns 4 and 5).

[Table 3]

Selected data from Table 3 have been used to create Figures 3 and 4. Figures 3a and 3b show that market segments placed in the top-right quadrant, UK luxury (cluster 1), Greece, UK (high) and Russia, have above average TGVA and above average employment contribution per night and per trip. Market segments such as UK (low), UK (medium), Sweden, Germany, and UK budget (cluster 3) in the bottom-left quadrant are those with below average daily and per trip contribution. UK non-package (cluster 2) is placed in the top-left quadrant because contribution per trip is above average but contribution per night is below average.

[Figure 3]

In Figure 4, the top right quadrant shows the segments whose GVA and employment contribution exceed that of the average tourist. Market segments in the bottom left quadrant such as Greece and UK luxury (cluster 1) are those with below average GVA and employment contribution. The market segments in the top left (none) and bottom right quadrants (Russia and Germany) contain the segments which perform above average in one indicator and below average in the other indicator.

[Figure 4]

Germany performs above average in terms of employment contribution but has below average contribution to GVA. This occurs because of the high relative spending of this segment in ‘culture/recreation’ (the sector employing the highest number of people, as shown in Table 4) and a low relative spending in the ‘food/beverage’ and ‘accommodation’ categories (both of which have a high relative GVA contribution per CYP of tourism consumption, as shown in Table 4). The top right quadrant in Figure 4 shows the market

segments which perform above average in both indicators. This includes most segments, with the UK low, UK budget (cluster 3), Sweden and UK non-package (medium) as the top-performers.

[Table 4]

Table 4 summarizes GVA and FTE jobs per CYP consumption in each industry. The high yield contribution from sectors such as ‘food and beverages’ as well as the relatively low contribution of ‘accommodation’ expenditure explain most of the differences between segments shown in Figure 4. The implications of this are discussed in the following section, focusing on the UK market.

Discussion

UK segment yield comparisons and management implications

The findings highlight the established fact that different yield indicators often result in different rankings of market segments (Dwyer et al. 2007; Lundie, Dwyer, and Forsyth 2007; Dwyer and Thomas 2012; Pratt 2012). As expected, GVA and employment contribution per night generally appear to be proportional to total expenditure and tourism consumption. However, the two composite indicators (TGVA per CYP and FTE jobs per million CYP) reveal that low spending tourist groups spend a high percentage of their total holiday budget in high TGVA and employment contribution categories.

Expenditure-based segmentation of the UK market is a straightforward way to determine average characteristics of tourists depending on their total spending. Most characteristics of the expenditure-based groups are fairly close to those of the average UK tourist. However, this study shows that when expenditure-based segmentation is combined with other yield measures, some useful conclusions may be drawn – especially if related and compared to the cluster analysis results. Higher-spending UK tourists tend to devote most of their additional expenditure to accommodation. This is far from ideal, as accommodation has a below-average contribution to both TGVA and employment. As a result, high-spending segments (luxury UK segment, ‘high spenders’, Greece and Russia) make a low contribution to total consumption despite their high overall spending.

It appears that in the case of Cyprus, encouraging more spending in both the ‘food and beverage’ and ‘culture and recreation’ categories is a strategy to maximise yield from higher spending segments. It could also be argued that tourists who already have a high daily spend would be easier to target, and that providing higher quality dining, cultural and recreation options to existing visitors should be a priority over investing in offering more upmarket accommodation. These findings are consistent with previous research emphasizing the potential to enhance the benefits of tourism to the local community through creating more linkages between tourism and agriculture (Telfer and Wall 1996; Torres 2003). Food in tourism is often considered to be an important part of the cultural experience of visiting countries (Lin, Pearson, and Cai 2011), and presents a way to further increase yield from high-spending tourists currently spending more in less profitable sectors.

Market segments with mass tourism characteristics may be less profitable in terms of their overall contribution to the tourism industry of Cyprus, but offer the best return per monetary unit spent. Promoting more spending from mass tourism segments (or attracting more tourists at least in the short-term) could, therefore, form part of a more flexible adjustment strategy as suggested by Ayers (2000) and Sharpley (2003), instead of concentrating exclusively on investment to attract and maximise revenue from higher-spending market segments.

In the case of UK tourists, the spending structures of ‘low spenders’ and ‘budget tourists’ are ‘efficient’ in the sense that they spend a high percentage of their overall budget on food. This reflects the fact that most of the package tourists are on ‘half-board’ or ‘bed and breakfast’ deals, which means that they still need to purchase some meals. The tendency of many agents and hotels in the past five years towards ‘all-inclusive’ deals, as a way to address the fall in revenue and arrival numbers, appears to be an ineffective strategy as far as yield is concerned. This is similar to the Balearic Islands, where research has shown that as a result of a recent tendency towards all-inclusive deals, not only does total expenditure tend to be lower, but also that spending on services outside the hotel and tourist complex tends to be significantly less (Alegre and Pou 2008).

Offering cheap accommodation-only deals to budget tourists is therefore a way to attract more tourists and at the same time ensure that they spend a greater share of their budget outside hotels. Mature destinations which find themselves in a stage of stagnation or decline often have an abundance of unoccupied apartments and hostels which could be recycled in this way. In the case of the UK market, two of the segments derived from cluster analysis,

‘budget tourists’ and ‘average non-package’ tourists, represent more than 80% of the UK market, which corresponds to 45% of all inbound tourism to Cyprus. These segments have large party sizes which indicate the presence of families. Increasing spending on ‘food and beverage’ as well as ‘culture and recreation’ should be prioritised by providing the relevant options for each of these market segments. There is certainly potential to perform further segmentation, such as focusing on different destinations on the island. This could be followed by studying the implications of shifting spending from local ‘transport’ to ‘food and beverage’ and ‘culture and recreation’.

Limitations in the present framework

Despite highlighting a promising approach that integrates segmentation techniques and yield estimates, significant assumptions and data limitations do exist. As noted by Salma and Heaney (2004), this approach does not take into account differential rates of profit by type of product within each TSA sector/industry. For example, different kinds of food or other purchases can be more or less capital- or labor-intensive than others. This is an aggregation issue, due to the TSA and survey expenditure categories being relatively broad. Furthermore, imported goods and services are associated with higher leakage in tourist expenditure (Dwyer and Forsyth 1997), something which is not accounted for in this study.

In addition, TSAs can only be used to estimate the immediate effects of expenditure made by tourists on the economy (direct contribution) (Frechtling 2010). As a result, any attempt to measure tourism contribution solely on TSAs would underestimate the importance of the tourism sector to the overall economy (Smeral 2006). The indirect effects of tourism consumption can be estimated through the use of economic models such as computable general equilibrium models (CGEs), which can trace the ripple effects of tourism consumption across entire supply chains.

Only yield indicators related to GVA and employment contribution are considered in the present study. Many more indicators exist, with their appropriateness depending on the priorities and desired outcomes of the given study. Furthermore, the 2007 passenger survey dataset is now fairly dated, but was chosen as this corresponds to the latest edition of publicly available Cyprus TSAs. The data and results for 2007 are therefore best seen as a snapshot of the situation at the time. Lastly, the simple 5-sector aggregation of the present study highlights the need for improved data collection, which would allow for more comprehensive estimates of direct and indirect economic and environmental impacts.

Future research avenues and required additional data

Additional primary data for tourist expenditure at a more detailed product level are certainly required. This would involve asking tourists more about their consumption habits and where their money is spent. Ideally, the questions should be detailed enough to match the national accounts or input-output (I-O) table (where these are available) sector classification, in order to avoid the need for aggregation and consequent loss of detail. In their study, Becken and Simmons (2008) use a 20-category expenditure classification which distinguishes different kinds of accommodation and diverse cultural sites and recreational activities. This is certainly more detailed than the present study, but ‘food and beverage’ is still not disaggregated into different venues or kinds of food — which as shown in the present study holds a lot of potential for maximising revenue from all kinds of tourists, especially those in the high end of the market.

Expenditure categories with high GVA and employment contribution are likely to differ across destinations. An approach such as the one outlined here to highlight priority sectors with most potential to improve contribution for different segments, can subsequently encourage the collection of more detailed expenditure data within those categories, allowing the consumption of more profitable products to be promoted at the destination. The surveys could also ask tourists where they would be spending their money assuming that their transport or accommodation was cheaper. This is important, because maximising yield ultimately depends on how tourists would be likely to spend any remaining budget or savings.

Yield from tourism expenditure also depends on the amount of products and services that are locally produced. If more goods and services within a certain expenditure category need to be imported, there will be a higher leakage of tourist expenditure (Dwyer and Forsyth 1997). Mature island destinations in the Mediterranean and elsewhere tend to import many products, including food. Targeting products that are locally produced is likely to increase the potential benefits of tourism spending; this is another reason why more detailed tourism expenditure data need to be collected. Mature destinations are often found in developed countries, where the resources and infrastructure to pursue such additional data collection (as described in the previous paragraph) are more likely to be available. It is also important that any additional data on expenditure from tourists are collected locally, at the destination. Using country-level

data for segmentation and yield analysis works well for Cyprus because it is a SITE, but larger countries require destination-specific expenditure data.

It is envisaged that the current study will be expanded through further data collection and the use of I-O tables. Matching tourism consumption to the I-O classification and environmental data such as carbon emissions and water use (recently highlighted in Hadjikakou et al. 2013 as a critical resource in many Mediterranean island destinations) could allow for estimates of the environmental impacts associated with different kinds of tourism spending, following the example of other researchers (Jones and Munday 2007; Lundie, Dwyer, and Forsyth 2007; Munday, Turner, and Jones 2013). This should eventually form part of an integrated segmentation-yield approach that can estimate ‘sustainable yield’, which includes not only economic but also social and environmental costs and benefits to a destination (Tyrrell, Paris, and Biaett 2013). Such a comprehensive framework could inform tourism policy with regards to the social-economic-environmental trade-offs associated with different market segments.

Conclusion

The integrated segmentation-yield approach established in this study is readily applicable to other destinations where the necessary data (TSAs and expenditure information) are available. As illustrated here, a highly suitable potential application is in mature destinations, where large source markets dominate. An advantage of this theoretical framework is its potential to be used iteratively, with the purpose of not only determining the most profitable segments but, even more importantly, providing insight with respect to where the most potential for maximising revenue lies in existing segments.

The findings of the Cyprus case study give rise to valuable management implications in terms of maximising value added and employment contribution from UK tourists. The findings appear to challenge the orthodox view that moving ‘upmarket’ is the only way to rejuvenate the tourism product. Spending on ‘food and beverage’ as well as ‘culture and recreation’ appears to produce maximum economic benefits, and it is the lower-spending segments that currently spend most of their money in these categories. The potential to increase spending in these categories exists for all segments and the study has made some relevant suggestions. The findings also illustrate that, if commercial providers continue to favor all-inclusive deals, this is unlikely to be in the best economic interests of the country/destination.

The study has finally discussed the importance of collecting more detailed expenditure, and has considered how such additional knowledge would allow more informed procurement of goods by tourism establishments. More disaggregated expenditure data could also be used to extend the framework in order to capture indirect economic impacts as well as environmental and social impacts. This is a future aspiration, but is likely to become more important as resources become scarcer.

Notes

1. Gross value added (GVA) is defined as the value of output less the value of intermediate consumption (OECD 2001).
2. Tourism GVA (TGVA) measures the GVA of industries that supply tourism products (Dwyer et al. 2012). It is equal to the value of wages/salaries and profits from the direct supply of goods and services to visitors.
3. A Small Island Tourism Economy refers to a country characterized by its small size, its nature as an island and its economic dependence on tourism (Shareef, Hoti, and McAleer 2008).
4. Journey stands for travel to and from the destination, excluding local travel.
5. The silhouette measure of cohesion and separation is a measure of the overall goodness-of-fit and is based on the average distances between the objects and can vary between -1 and +1. Values of more than 0.50 indicate a good solution (Mooi and Sarstedt 2011).
6. Inbound tourism consumption is the total value of goods and services consumed by non-resident visitors. It usually exceeds tourist expenditure as it includes services for which the tourist does not pay for directly: social transfers in kind that benefit visitors, imputed rents on owner-occupied holiday homes, and costs to hosts on behalf of visitors staying with family or friends (Dwyer, Forsyth, and Dwyer 2010).

7. The 2007 TSAs and expenditure surveys use Cyprus pounds (CYP), the national currency of Cyprus before the euro. The exchange rate between CYP and euro was still in fluctuation throughout 2007, so the study uses CYP to ensure consistency. The fixed exchange rate, valid from January 1st 2008 is Euro 1 = CYP 0.585274.
8. Mean total expenditure is the full sample average for each segment and is less than the sum of the individual expenditures. This occurs because the number of tourists who reported spending in individual categories is considerably smaller than the total sample.
9. Total contribution to GVA of sales to an average tourist is calculated by dividing total tourism GVA (column 1) by total tourism consumption (column 2). The total number of FTE jobs per CYP million of total consumption (column 5) is calculated by multiplying the share of tourism consumption in each category by the number of FTE jobs per CYP million shown here for each expenditure category (column 4).

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Table 1. Results of the COO segmentation for the five main country market segments.

	Average	COO SEGMENTS				
		UK	Germany	Greece	Sweden	Russia
Sample (N)	30 849	10 841	2 254	1 982	1 413	1 635
Sample share (%)	100	35.1	7.3	6.4	4.6	5.3
Actual 2007 (%)	-	53.1	5.7	5.8	5.0	6.0
Mean expenditure (Cyprus pounds)						
Accommodation	20.32	14.08	15.63	35.12	7.72	22.89
Food/drink/tobacco	20.20	20.22	11.63	24.13	17.19	18.70
Transport	7.75	5.79	6.34	17.95	3.09	6.84
Recreation/culture	2.97	2.07	3.55	4.90	1.81	5.18
Other	11.08	7.40	6.86	20.92	7.84	13.83
Mean total exp.	56.21	42.14	51.57	78.60	27.80	64.18
<u>Continuous variables</u>						
Mean party size (per.)	1.96	2.15	1.97	1.35	2.48	1.80
Mean LOS (days)	10.25	11.36	9.40	7.85	9.28	10.46
<u>Categorical variables (mode)</u>						
Month	May-Oct (62%)	May-Oct (61.6%)	Oct-Nov (22.5%)	Dec-Mar (44.5%)	May-Oct (70%)	Jun-Oct (64.2%)
Sex	Female (54.3%)	Female (56.4%)	Female (50.3%)	Male (51.3%)	Female (58.5%)	Female (62.8%)
Age	20-49 (64.9%)	40+ (68%)	30-49 (53.4%)	20-49 (67%)	20-39 (72%)	20-39 (74.3%)
First time (Yes/No)	No (53.5%)	No (67.8%)	Yes (72.9%)	No (76.1%)	Yes (54.4%)	Yes (58.8%)
Purpose	Leisure (77.3%)	Leisure (86.7%)	Leisure (86%)	Business (36.7%)	Leisure (94.1%)	Leisure (81.8%)
Area	A. Napa (19.6%)	Pafos (25.4%)	A. Napa (27.5%)	Lefkosia (41.8%)	A. Napa (53.3%)	Lemesos (41.4%)
Alone (Yes/No)	No (66.2%)	No (80%)	No (75.6%)	Yes (73.8%)	No (84.1%)	No (57.7%)
Package (Yes/No)	Yes (50.9%)	Yes (51.4%)	Yes (72.6%)	No (90.7%)	Yes (88%)	Yes (65%)
Accommodation	4-star (21.8%)	4-star (20%)	4-star (44.4%)	Friends (46.8%)	App. A (32.6%)	3-star (26.5%)

Table 2. Results of the expenditure-based segmentation and the cluster analysis of the UK market segment. Variables with an asterisk were used as clustering. Alone (yes/no) and package (yes/no) are both used as dummy variables.

	EXPENDITURE-BASED UK			CLUSTER ANALYSIS UK		
	Low	Medium	High	1	2	3
Sample (N)	3594	3594	3594	1967	3549	5325
Sample share (%)	33.3	33.3	33.3	18.1	32.7	49.1
<u>Mean expenditure (Cyprus pounds)</u>						
Accommodation	4.43	6.55	27.34	34.08	17.44	7.20
Food/drink/tobacco	15.94	17.07	27.62	25.08	18.86	19.44
Transport	3.25	4.51	9.13	11.93	5.63	4.27
Recreation/culture	1.65	1.86	2.74	3.10	1.46	2.28
Other	4.31	6.66	11.31	12.60	6.83	6.09
Mean total exp.	12.06	26.64	87.05	73.09	49.46	26.01
<u>Continuous variables</u>						
Mean party size*	2.21	2.25	1.99	1.05	2.55	2.29
Mean LOS (days)	14.00	11.48	8.62	11.76	13.43	9.83
<u>Categorical variables (mode)</u>						
Month	May-Oct (74.8%)	May-Oct (74.5%)	May-Oct (72.9%)	May (10.7%)	May-Oct (71.6%)	May-Oct (83.2%)
Sex	Female (60.2%)	Female (56.5%)	Female (52.6%)	Female (52.3%)	Female (57.8%)	Female (57.0%)
Age	40+ (65%)	40+ (72.1%)	50+ (45%)	40-49 (22.3%)	50-59 (26.7%)	40-49 (24.4%)
First time (Yes/No)	No (65.2%)	No (67.7%)	No (70.3%)	No (79.9%)	No (80.7%)	No (54.8%)
Purpose*	Leisure (88.5%)	Leisure (91.3%)	Leisure (80.6%)	Leisure (47.4%)	Leisure (89.9%)	Leisure (99.0%)
Area*	Paralimni (29.1%)	Pafos (30.7%)	Pafos (24.3%)	Larnaka (26.2%)	Pafos (25.7%)	Paralimni (32.9%)
Alone (Yes/No)*	No (83.4%)	No (85.1%)	No (71.7%)	Yes (95.2%)	No (100%)	No (94.3%)
Package (Yes/No)*	Yes (64.3%)	Yes (59.1%)	No (68.4%)	No (99.4%)	No (93.4%)	Yes (100%)
Accommodation*	Friends (23.5%)	4-star (25%)	4/5-star (47.3%)	Friends (49.9%)	Friends (30.7%)	4-star (31.3%)

Table 3. Summary of all daily yield indicator results for all market segments.

Column #	1	2	3	4	5
Market segment	Tourism consumption per visitor	TGVA per visitor	Employment contribution per 1000 visitors	TGVA per CYP of consumption	FTE jobs per CYP mn of consumption
Average tourist	60.25	27.11	2.42	0.45	40.13
UK (average)	47.27	22.34	1.97	0.47	41.75
Germany	43.62	18.68	1.81	0.43	41.50
Greece	107.75	44.36	4.09	0.41	37.97
Sweden	33.38	16.98	1.39	0.51	41.72
Russia	62.14	28.08	2.53	0.45	40.69
UK (low)	27.36	14.02	1.22	0.51	44.65
UK (medium)	34.78	16.99	1.47	0.49	42.18
UK (high)	75.22	34.37	3.06	0.46	40.73
UK (luxury)	86.73	37.51	3.44	0.43	39.70
UK (non-package)	48.07	22.28	1.97	0.46	40.97
UK (budget)	36.35	18.25	1.60	0.50	43.92

Table 4. Detailed yield breakdown for an average inbound tourist⁹.

Column #	1	2	3	4	5
	Tourism consumption per visitor per day (CYP)	Tourism GVA per visitor per day (CYP)	Tourism GVA per CYP of consumption per industry	FTE jobs per CYP million in each category	FTE jobs per CYP million of total consumption
Accommodation	17.49	6.83	0.39	38.53	11.18
Food & beverage	15.36	10.96	0.71	55.61	14.18
Transport	18.13	4.76	0.26	35.63	10.72
Culture/recreation	1.30	0.70	0.54	160.39	3.47
Other	7.97	3.85	0.48	4.38	0.58
Total	60.25	27.11	0.45*	294.54	40.13**

Figure 1. Segmentation procedure carried out in the study. Cross-tabulation of variables was used to create COO segments. The UK segment was subsequently segmented in two different ways.

Figure 2. Sector aggregation and matching to reconcile TSA and expenditure categories.

Figure 3. Tourism GVA per night and per trip (a) and number of full-time equivalent jobs generated per night and per trip (b) for all market segments. The figure shows a linear correlation between per night and per trip contribution.

Figure 4. Market segments plotted to show trade-offs between two different measures of yield.

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