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Identifying seasonal variations in store-level visitor grocery demand

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Introduction

An important component of retail location planning involves predicting the revenue of proposed new stores in advance of actual opening. In many areas of the country, those revenues will be driven by domestic consumption – the expenditures generated by residential households. However, in coastal and other tourist areas revenues will also be driven by seasonal demand (especially in the summer months in the UK), from visitors staying in the locality for a temporary period. This paper seeks to understand the contribution of visitor expenditure to the seasonal sales variations experienced at grocery retailers in Cornwall, South West England. These findings contribute to a broader research agenda which aims to develop spatial modelling techniques that can be used within site location research to estimate the impact of seasonal tourist spend on store level sales and revenues.

This paper reports on research that has been completed in collaboration with the location planning team at a major UK retailer, who provide rare access to store trading information and customer level data from a popular loyalty card scheme. These data are rarely available for academic investigations and therefore this paper provides a unique

insight into visitor grocery expenditure in tourist locations. We use spatial analysis to identify revenue originating from outside individual store catchment areas and thus identify the impact of seasonal tourist spend on sales and revenues at individual grocery stores. There has been little exploration of seasonal tourist demand in store location planning, and this study addresses an identified academic and commercial need. We begin with a review of the existing literature before examining visitor expenditure in Cornwall, including a detailed case study in a major tourist resort.

Non-residential demand in store location planning

As outlined by Reynolds and Wood (2010), this journal has made a "sustained contribution" (p830) to the store location planning process, developing links between industry and academia. A range of articles have sought to support the location planner in applying approaches, methodologies and techniques across a range of sectors including previously under-researched areas such as charity shops (Alexander et al., 2008) or the food convenience retail market (Wood and Browne, 2007). As outlined by Reynolds and Wood (2010), this journal has featured a range of non-technical articles which draw on techniques and approaches that enable retailers to estimate market areas associated with individual stores and to predict the revenue of proposed new stores in advance of actual opening, especially within the grocery sector, and it is that debate to which this paper contributes.

As a result of continued investment in location planning capabilities, a 2009/2010 survey of location planning teams (Reynolds and Wood, 2010) identifies that major UK grocery retailers such as Tesco, Sainsbury's and ASDA boast large location planning teams with a well-developed suite of tools and approaches available to them. They note that these teams and associated tools are primarily employed to make the 'financial

business case' for proposed new stores or for store extensions, acquisitions, refurbishments and relocations, principally by predicting revenue following new investment. Retailers therefore ensure that they maximise opportunities to develop their location planning capabilities in order to develop stores in formats and locations that meet their consumers needs and behaviours and thus maximise returns on company investment.

A well-developed suite of tools are available to the location planner, often developed in-house or in partnership with academics or external consultants. Of particular importance has been the use of GIS and complex spatial models to apply more sophisticated analysis and thus enable revenue prediction under a number of different scenarios, monitoring of store (and competitor) performance, monitoring consumer behaviour and identifying suitable sites to launch new products (see Birkin et al.,(2011), and Birkin et al., (2002) for a full discussion).

Reynolds and Wood (2010) note, however, that within most retail location planning teams, model outputs are often adjusted by analysts, suggesting that in a variety of contexts, these models fail to accurately handle the specific characteristics of demand to an acceptable level of accuracy, and as such, the site visit, analogue approaches (drawing comparisons with existing stores) and the skills of the analyst remain important (Harries, 2010; Wood and Browne, 2007). In particular, revenue predictions may have a tendency to severely underestimate revenue in contexts where non-residential demand, in the form of workplace populations, commuters, students or even tourists represent a large proportion of store revenue.

Our commercial partner has increasingly noted that their revenue forecasts for stores in areas with a high degree of seasonal tourist demand are often underestimated. They note

that some stores are able to attract significant additional revenue originating from customers observed to have a residential origin some distance from the store. This is particularly true for some stores located in resorts on the south coast of England, with a noticeable impact on the accuracy of their revenue predictions, and the strategic and operational decisions based on these sales forecasts. It is, however, important that they are able to accurately forecast additional seasonal sales uplift due to visitor demand at a store level, and as such, analysts have to employ an analogue approach to estimate additional seasonal sales uplift at proposed stores, drawing comparisons with the very limited knowledge that they have acquired from existing stores in tourist resorts.

At an operational level, retailers have begun to recognise the importance of seasonal variations in demand, but this has been largely driven by a focus on short term variations in the weather, or the impact of short term events. For example, Tesco recently introduced a six-strong in-house team of weather forecasters and sophisticated software to assist in forecasting short-term sales uplift on certain product lines due to the weather (Sunday Times, 2009), whereas Co-Op's recently introduced 'Store Merchandising and Replenishment Transformation' software' handles replenishment for 2,800 stores and claims to account for seasonal sales variations and local events, in order to maintain on-shelf product availability, minimise waste and boost customer experience (Talking Retail, 2012). Retailers have also begun to notice that larger 'events' such as the Jubilee Weekend (2^{nd} – 5^{th} June 2012) can have an impact on the timing, value and location of customer spend, with a recent survey carried out by Tesco's online consumer panel 'Shopper Thoughts' seeking to identify if consumers used a different store to usual during the Jubilee Weekend, particularly whether that store was "on route to an event/party or holiday destination" and whether the store used faced any issues in maintaining availability of products, or managing queues and other

aspects of the customer experience (Tesco, 2012).

Whilst these examples are valuable evidence that retailers are beginning to incorporate short term seasonal sales variations within their operational planning (e.g. store replenishment and short-term planning of promotions and product lines), they are not currently employed at the more strategic level in store level revenue estimations and investment decisions, carried out by the location planner.

In this paper we use store and loyalty card data from our collaborating retailer to demonstrate the degree of seasonality (in terms of revenue generated from visitors) experienced around selected stores in order to highlight important implications for store location planning. Ultimately, this study fits within a broader body of research, part of the ESRC's Retail Industry Business Engagement Network (RIBEN), in order to understand the drivers behind seasonal sales uplift due to visitor demand, and to incorporate this demand within the location modelling used for revenue estimation. We begin by outlining the characteristics of seasonal visitor demand, before examining the store and loyalty card data provided by our collaborating retailer.

Tourism, grocery retail and seasonal visitor expenditure

In 2009, the UK tourism sector contributed £115bn to UK GDP, supported over 2.6 million jobs, and represented the fastest growing economic sector in the UK (Deloitte, 2010). Recent analysis by Mintel predicts a 5.2% increase in spending on domestic holidays in the UK up to 2016, driven in part by high profile events including the 2012 Olympic and Paralympic Games (Mintel, 2009). Active marketing by national and regional tourist organisations, the relatively weak value of Sterling (which boosts inbound tourism) and increases in domestic trips by UK residents are also likely to drive growth in this sector. Whilst much of this expenditure originates from day trips and

short breaks, the number of UK households taking their main holiday in the UK has also increased (Visit Britain, 2010), particularly to coastal resorts and other coastal destinations (Mintel, 2009). Self-catered, rental accommodation, typically in the form of cottages, apartments, static caravans or lodges, and also caravanning and camping appears set to benefit from much of this growth in visitor numbers, with self catering accommodation (including camping and caravanning) accounting for almost 60% of all leisure trips (in terms of 'bed nights'), with 37% of these taken during July and August (Visit England, 2011).

Within coastal resorts, self-catering tourism plays an important role in stimulating expenditure in the local economy, not just within major attractions, but also within supporting services, particularly catering facilities. Most forms of serviced accommodation, such as hotels, guest houses and B&Bs provide some form of catering to guests, whereas, by definition, self-catering accommodation, including camping, gives guests the opportunity to eat out or to purchase and prepare their own food. A recent survey of over 600 self-catering holidaymakers found that those using self-catering accommodation tended to spend more than double on food and drink, including grocery shopping, in the local area than comparable hotel guests (Holidaylettings.co.uk, 2008). The Camping and Caravanning Club identified that the highest single trip related spend (excluding site fees) by campers using their sites was on provisions from supermarkets (CCC, 2007).

Common sources of food and drink for visitors include restaurants, pubs and cafes, although the range of food and drink sources used by tourists is often more complex. Dudding and Ryan (2000, p302) note that "in many holiday locations, during the summer season tourists will complement revenue derived from residents for a range of

retailers such as supermarkets, chemists [and] newsagents". This paper is concerned with the consumption of food and drink purchased from retail outlets and does not focus on cafes, restaurants or other similar establishments.

Stores selling food and drink thus form an important part of the services and facilities required by tourists, particularly where self catering accommodation is dominant (Timothy, 2005). Tourists may bring some supplies from home or shop at large stores en-route. Nonetheless, much of the consumption will take place within the destination. Visitors purchase food, drink and other household items from local supermarkets and convenience stores which are primarily designed to meet the needs of local residential demand. They may also purchase food ready for consumption, such as pre-packed sandwiches and snack foods, from a range of other predominantly non-food retailers such as Boots.

The importance of these forms of visitor demand has been noted by convenience retailers, with SPAR recently announcing the opening of 46 stores on Haven and Butlins holiday park sites in order to provide visitors with some of the services they need within their accommodation site (SPAR, 2010). Furthermore, in recent advertisements promoting online shopping with home delivery, Tesco and Waitrose encourage visitors to pre-order their holiday groceries for delivery to their self-catering accommodation (Tesco, 2010; Waitrose, 2011), recognising the significant expenditure to be gained from visitors.

Food and drink retailers are thus relied upon by visitors and often experience significant sales fluctuations, driven by visitor spend at certain times of year. Many retailers note that some of their stores in tourist resorts experience noticeable sales uplift during the

tourist season, attracting significant additional revenue originating from visitors, as explored in the following section. Visitor demand uplift does however present certain operational challenges for retailers. Stores may struggle to ensure that shelves remain fully stocked and that service levels remain high during prolonged periods of demand uplift, such as during the school holidays.

In spite of the clear sales and operational impacts, there has been surprisingly little focus on tourist consumption within stores selling food and drink, because these stores are commonly considered to be meeting the needs of local populations. Wilton (2004, p6) claim that "Groceries are not classified as a tourism commodity because purchases made by tourists represent a very small proportion of total grocery sales". Based on our findings reported below, we strongly dispute this claim, and suggest that at stores in popular resorts, visitor spend can represent over half the weekly recorded revenue at certain times of year. In the next sections we begin to try and unpick the complexities of tourist spend on groceries through an examination of broad trends in Cornwall, followed by a more detailed case study in a major tourist resort within the region.

Tourism and food spend in Cornwall

The South West represents one of the most popular tourist destinations in the UK. Here, tourism accounts for 1 in 8 jobs (South West Tourism, 2005), around 20% of the total UK domestic tourism expenditure (South West Tourism, 2010a) and is worth up to 10% of the region's GDP (South West Tourism, 2005). Cornwall attracts around 25% of all tourist expenditure in the South West (South West Tourism, 2010b), and visitors to Cornwall accounted for 23 million 'tourist nights' in 2008 with an associated

expenditure of over £1.2bn (Visit Cornwall, 2010). Consequently, "A large part of the commercial landscape in the South West is concerned with, and devoted to, satisfying the needs of the visitors as consumers" (South West Tourism, 2010c, p10). Likewise, Everett and Aitchison (2008, p154) claim that "Cornwall is exposed to the highest level of seasonal tourism activity in Britain". Many of the businesses serving the needs of visitors, including grocery stores, therefore experience operational difficulties due to the degree of seasonality experienced in terms of visitor demand and frequently 'overtrade' in the summer months.

Cornwall is one of the most remote counties in the UK. Its location (Figure 1), landscape and distinctive regional identity attract visitors and thus Cornwall relies heavily on tourism to support the local economy. As a result of tourist expenditure, resorts such as Newquay, Padstow, Bude and St Ives benefit from "[a] level of retail and commercial floorspace [which] is well above the level that would be expected for a town of this size [referring to St Ives], which is mostly due to the contribution to the local economy of tourism expenditure" (GVA Grimley, 2010, p67). With visitor numbers exhibiting a high degree of seasonality, there is a notable impact on businesses in these resorts (Gordon and Goodall, 2000; GVA Grimley, 2010), with the trading characteristics of stores clearly influenced by visitor demand.

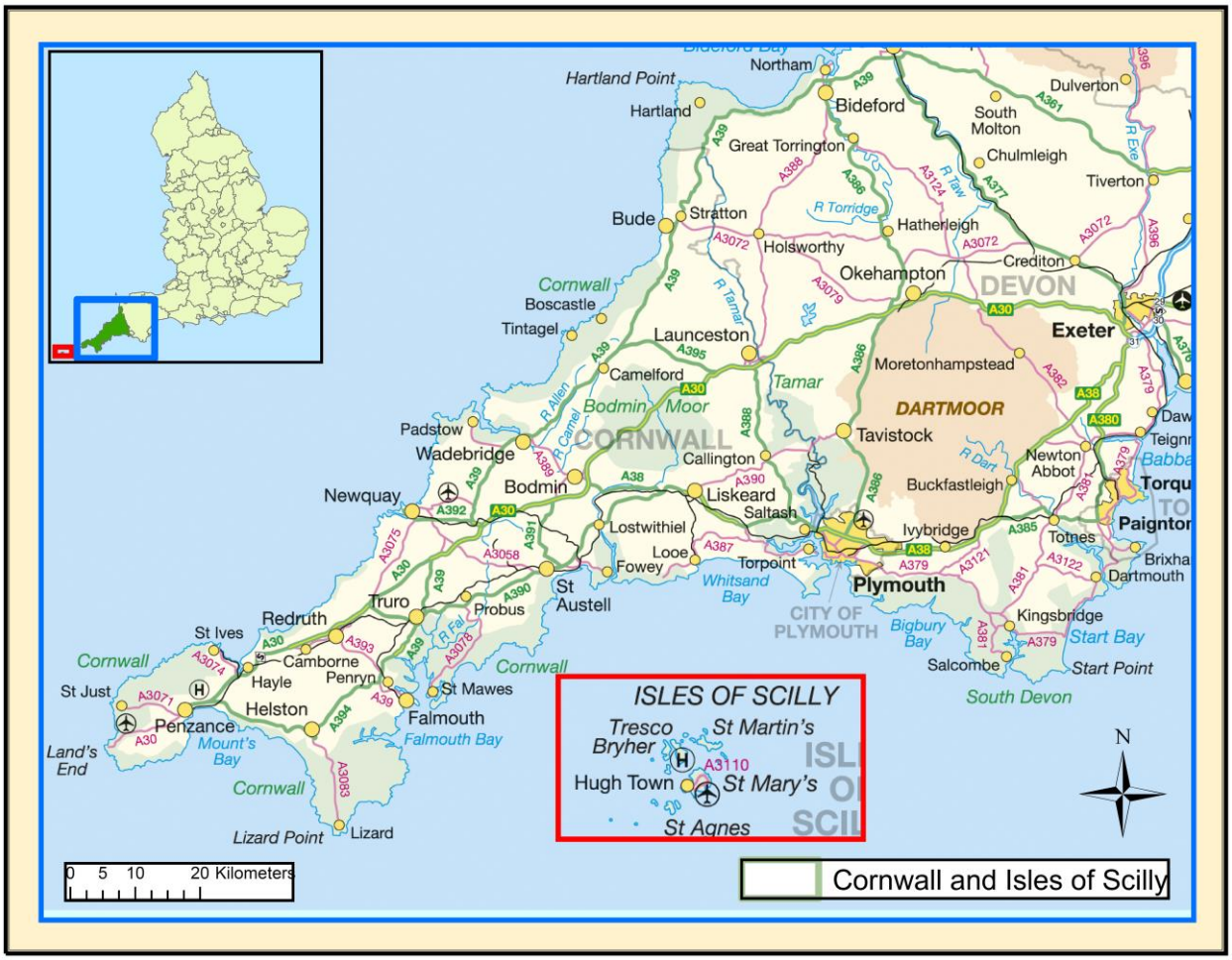


Figure 2 shows a derived index of residential demand versus visitor demand at the output area (OA) level for Cornwall. The figure has been produced by dividing the 2011 resident population (CACI estimates supplied by collaborating retailer) by the total number of available visitor bedspaces within each OA (the lowest level of aggregation for census and administrative data dissemination), containing an average of 124 households (Vickers and Rees, 2006). The bedspace estimations are based on all forms of visitor accommodation recorded in South West Tourism's [1] accommodation database. This database records over 50,000 bedrooms or units within the county, with a maximum capacity for over 200,000 guests. Camping & caravanning and holiday park provision provide over half of this capacity, and are likely to be highly seasonal in nature, meeting the demand for summer family holidays.

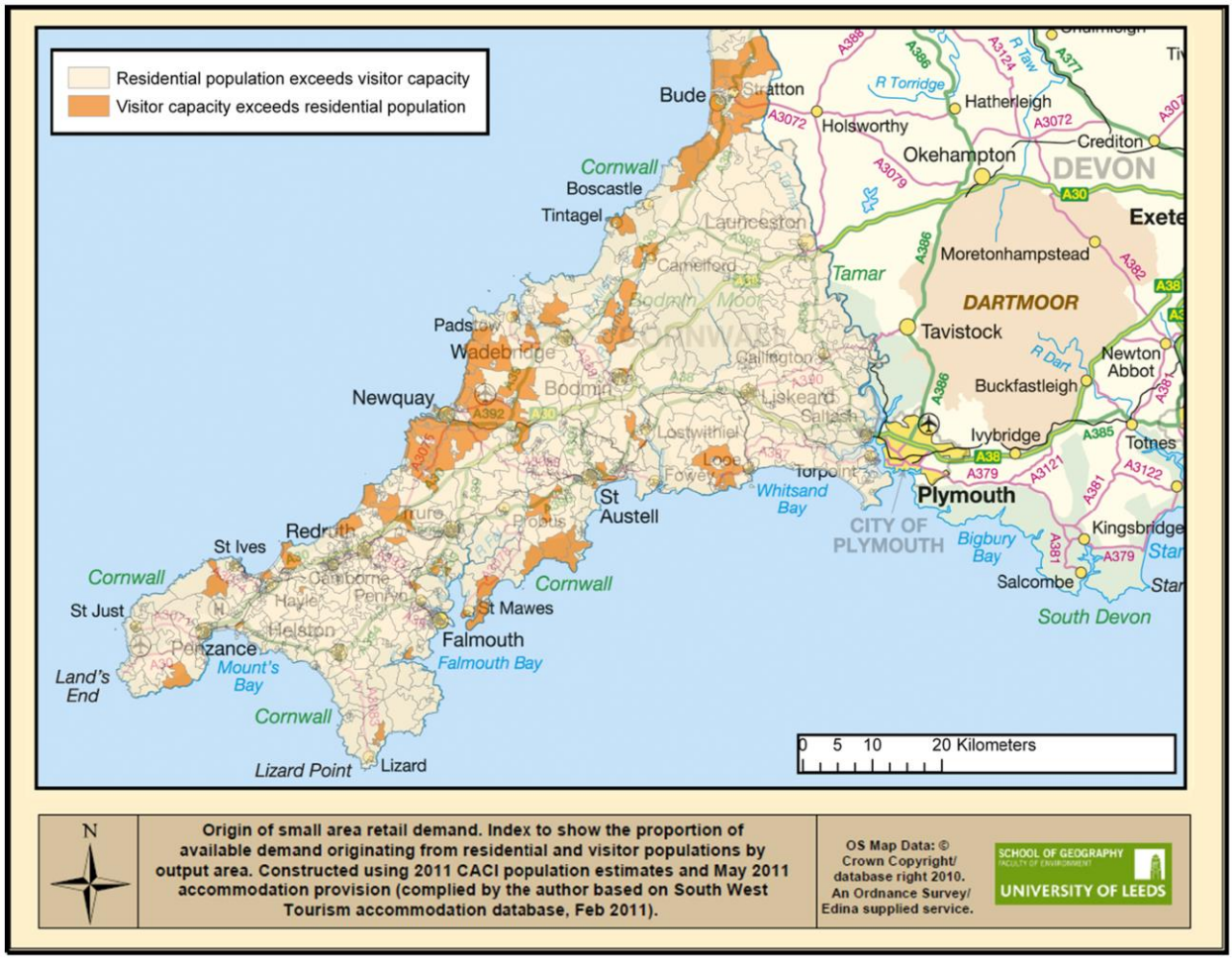


Figure 2 identifies that there is an uneven spatial provision of visitor accommodation, with the number of bedspaces exceeding the local resident population in a number of areas. Most notably, resorts such as Newquay, Padstow and Bude and St Ives benefit from a level of visitor accommodation that far exceeds the resident population. Holidaylettings.co.uk (2008) report that accommodation within these resorts is extremely popular, enjoying levels of booking enquiries (and thus inferred occupancy) far higher than similar properties elsewhere. It is thus essential to understand and incorporate the economic impact of these spatial clusters of additional visitor demand when considering store performance and market share.

Impact of visitor spend on existing grocery stores

In recent planning applications for store extensions at Wadebridge and St Austell, Tesco outlined the scale of seasonal tourist expenditure experienced at specific stores. Referring to the St Austell store, the store manager claims "We are quite a unique store in that we are very seasonal, with holiday makers in the summer visiting [The] Eden [Project] and other facilities and we have a major role in making sure that they stay and shop in the area. However, due to constraints over shelf space we are not able to stock high volumes of seasonal stock" (DPPLLP, 2009, p26). The store manager highlights her belief that the store plays an important role in retaining expenditure associated with tourists visiting local attractions and outlines the difficulties that the store faces in meeting some of the existing demand. Likewise, in Wadebridge the store "provides a key facility for shoppers within the catchment and a number of shoppers (resident and tourists) from beyond the catchment" (API, 2010, p2).

The planning application for the Wadebridge store extension outlines that the store and car park are extremely congested during the summer months, and that the store fails to keep up with demand, struggling operationally to restock shelves and manage queues, ultimately resulting in a poor customer experience (API, 2010). Consequently, the store 'overtrades' from May to September "when trading levels nearly double" (p3) with over a third of the total turnover coming from outside the catchment for much of the year (API, 2010). GVA Grimley (2010) note that it is inevitable that the Wadebridge Tesco will experience this situation given the location of the town in relation to tourist 'hot spots', and due to the town lying on the main A39 tourist route. Furthermore, at its Padstow store, Tesco has taken temporary steps to address the issue of 'overtrading', locating a temporary 'seasonal/summer store' in a 52sq m marquee in the store car park

during the summer months (April to September) since 2008 (Maguire, 2010). This highlights that the store struggles to meet the needs of customers during the summer and needs additional floorspace to stock seasonal items and ease congestion in-store.

The retail assessment for the Wadebridge store extension attempts to take account of visitor spending, stating "It has also been assumed given the character of the area that tourism spend/other expenditure from outside the catchment will be 30%" (API, 2010). The planning application includes a detailed and robust assessment of the potential revenue available from the resident population within the store catchment, and, yet, as a result of the assumption quoted above, 30% demand uplift has been added to the revenue predictions for the store to account for visitor spending. No attempt to determine the origin or nature of the visitor expenditure was involved. The 30% figure was simply a judgement based on observations of the potential catchment and knowledge from other stores.

The approach employed at the Wadebridge store is potentially misleading, since, as outlined in Figure 2, there is a spatial mismatch between residential and visitor demand. Self-catering visitor accommodation, a key driver of visitor grocery expenditure, tends to be clustered around particular large holiday parks or accommodation sites. Simply up-scaling, at an aggregate level, the store revenue predictions lacks insight into the local spatial and temporal pattern of visitor demand. This paper now uses store revenue and loyalty card data from a major UK retailer to identify the volume, value and spatial origin of visitor expenditure around a store in one of the principal Cornish coastal resorts.

Case study of visitor expenditure in a Cornish Coastal Resort

The analysis which follows is based on data supplied by the collaborating retailer, a major UK multiple chain. All their stores in Cornwall stock a variety of food and non-food products and are located in popular tourist destinations. All stores experience seasonal sales uplift, with total sales sometimes more than tripling during the summer. Figure 3 illustrates the retailers' weekly sales figures (food and drink revenue) for four stores, two located in coastal resorts, and two non-coastal stores, all within Cornwall. All sales values shown are relative to a base level of zero (lowest average sales) to preserve confidentiality and to account for the impact of store size on overall sales.

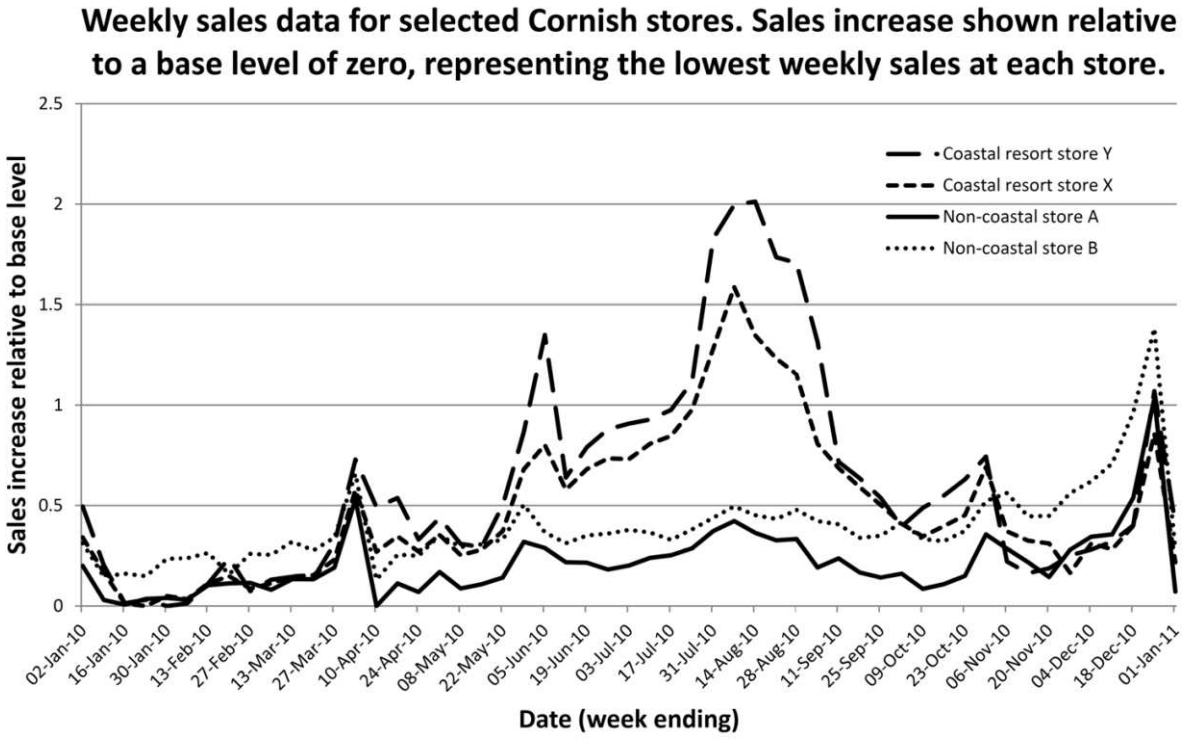


Figure 3 clearly highlights that there are a series of seasonal sales fluctuations at all stores, with notable sales increases around Christmas, Easter, the late May bank holiday, during the summer (most notably the school summer holiday in August) and during the October school half-term. Whilst all stores experience sales uplift during

these periods, it is clear that the extent varies by store, with coastal resort stores X and Y demonstrating a far more pronounced sales uplift during the summer and at the late may bank holiday, two popular periods for visiting coastal resorts within the tourist season. Sales at coastal resort store Y are seen to triple at times during the summer, whilst sales at coastal resort store X more than double from their January value between mid July and late August.

Although sales do increase during the peak tourist season at stores A and B, these non-coastal stores experience far less pronounced seasonal uplift, with sales only increasing significantly at Christmas, largely driven by increases in household food and drink expenditure at this time of year. Figure 3 therefore clearly demonstrates the seasonal component to sales at stores located within popular coastal resorts, with an exceptionally clear peak during the summer. Although not shown on Figure 3, these seasonal sales variations hold true across food, non-food and, where appropriate, clothing lines.

It is difficult to correlate store sales with key indicators of the visitor economy, such as overall visitor numbers, since, at a destination level these are difficult to obtain. Nonetheless, surveyed occupancy rates for visitor accommodation serve as a useful proxy to indicate variations in the number of overnight visitors. Overall serviced and self-catering occupancy rates for the county of Cornwall were obtained (South West Tourism, 2010d; South West Tourism, 2010e; South West Tourism, 2010f; South West Tourism, 2010g), for the corresponding period.

Coastal resort store's X and Y demonstrate a clear link between seasonal sales uplift and accommodation occupancy, particularly for self-catering accommodation. Most notably, the period with highest recorded sales at both stores also represents the month with the highest self-catering accommodation occupancy (August), whilst the lowest sales coincide with the period in which lowest occupancy rates are recorded (January). This relationship was tested using linear regression with self-catering occupancy rates as the independent variable, thus suggesting that accommodation occupancy, as a proxy for visitor numbers, drives recorded store sales. The coefficient of determination (R^2) is

76.6% for Store X, and 73.1% for store Y (at the 95% confidence level) suggesting that around three quarters of the total variation in sales could be accounted for by the differences in self catering occupancy rates.

The store sales data suggests that there is a clear link between visitor expenditure and recorded store sales within this store. Nonetheless, the existence of such a correlation does not necessarily indicate that the observed sales uplift is entirely attributable to visitors. This paper now makes use of customer level transaction data to explore the nature of the sales uplift, and identify the extent to which visitor demand around store X accounts for the observed sales pattern.

Customer loyalty card data recording to individual in-store transactions were collected for a total of 26 weeks during 2010. The weeks were chosen with reference to the store sales data, and the spread of weeks aims to give an insight into consumption at various points during the high and low season, along with specific points such as school holidays and bank holiday weekends. For the selected weeks, every transaction attached to a customer's loyalty card was extracted from the retailers' database. Transactions

were organised by customer and thus for each customer the total number of transactions and total spend within a given week was available.

Each customer's transaction details can be linked to the postcode registered on their loyalty card, which is usually their home postcode. Using spatial analysis it is possible to identify all those customers with home postcodes that fall outside the store trade area; these are termed out-of-catchment consumers. This group can be further subdivided in order to identify out-of-catchment staying/overnight visitors originiating at least 61 miles from the store, with the remainder, from within 61 miles of the store (but outside the store trade area) representing likely day trip visitors. This threshold was chosen since the England Leisure Visits Survey (ELVS) identifies that for coastal resorts, day trip visitors had, on average, travelled 61 miles from home (Natural England, 2005, p21).

Based on this analysis 32.4% of all loyalty card transactions and 34.4% of loyalty card spend is found to originate from outside this store trade area (Table1). Additionally, 85.5% of out-of-catchment spend is found to originate from a home address at least 61 miles from the store (Table 1). Therefore, over 85% of total visitor spend is thought to originate from overnight staying visitors, with less than 15% being attributable to day visitors. This would be expected, since day trip visitors are less likely to purchase large quantities of food and drink from grocery stores due to the nature and duration of their visit.

	Proportion of total loyalty card transactions	**Proportion of total loyalty card spend**
Transactions from within	65.6%	67.6%

the store trade area		
All external trade originating outside the store trade area	34.4%	32.4%
Proportion of external trade originating at least 61 miles from the store	83.4%	85.5%

Table 1. Coastal resort store X loyalty card transactions by origin.

Table 2 provides a comparison with additional Cornish stores following similar analysis using loyalty card data. It is clear that the proportion of loyalty card trade originating from outside the store trade area is far higher at coastal resort stores X and Y than at similar stores in non-coastal resorts, with only 16.2% of loyalty card sales at non-coastal store B, being to out-of-catchment customers. In common with store X, however, coastal resort store Y, exhibits an even more pronounced pattern, with almost 50% of loyalty card sales originating from out-of-catchment customers, which will include a large proportion of visitors. Table 2 suggests that the nature of this visitor trade may vary between stores, even within a small area such as Cornwall. This may be driven by differences in the stores themselves, in the type of customer or in the nature of tourism within each resort and will be the focus of subsequent research.

	Transactions from within the store trade area			**External trade originating outside the store trade area**		
Store	**Coasta**	**Non-**	**Non-**	**Coasta**	**Non-**	**Non-**

	l resort Store Y	coastal Store A	coastal Store B	l resort Store Y	coastal Store A	coastal Store B
Proportion of total loyalty card transactions	60.6%	72.5%	83.8%	39.4%	27.5%	16.2%
Proportion of total loyalty card spend	52.7%	73.6%	83.4%	47.3%	26.4%	16.6%

Table 2. External trade for selected Cornish stores; calculated using loyalty card data analysis.

Figure 4 aggregates the individual transactions from store X at a district level and demonstrates some form of clustering in terms of the spatial origin of the store's external trade. Most notably, these transactions tend to cluster around major urban areas, and show an element of distance decay, with heavily populated areas from which the South West is more accessible exhibiting a greater number of transactions recorded in the store. Figure 4 accounts for the underlying population distribution (using 2010 mid year population estimates) and thus considers the total number of loyalty card transactions per 100,000 people.

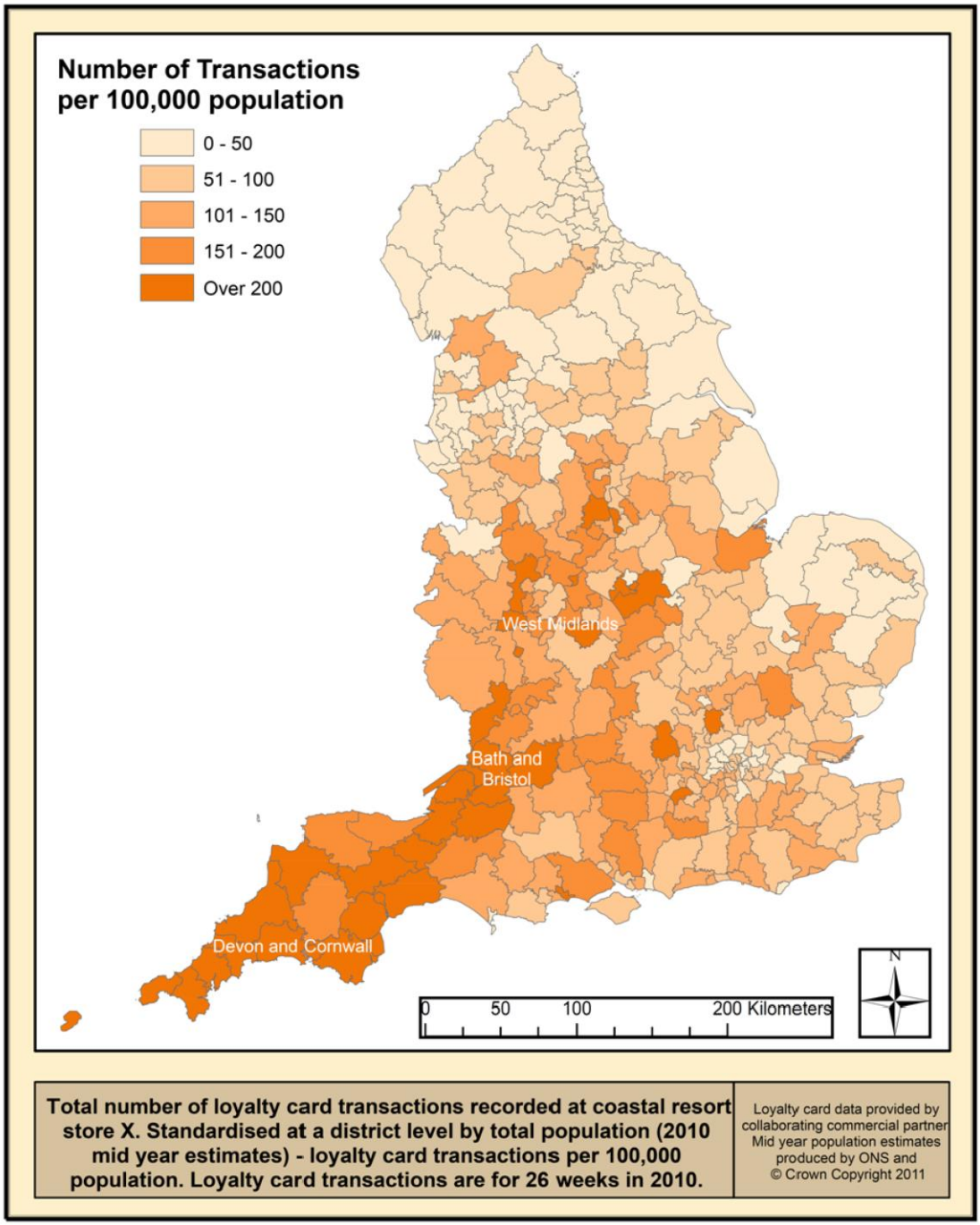


Figure 4 clearly highlights that the number of recorded transactions, after standardising for the size of district populations, is highest in the districts that make up Cornwall itself[2]. Furthermore, there is a noticeable cluster of districts that have recorded a high number of transactions within the store, particularly across a band stretching north east through Devon and Cornwall to Bath and Bristol and also within the West Midlands. These represent some of the urban areas from which Cornwall is most accessible,

especially via the motorway network, and suggests that visitor expenditure is more likely to originate from these areas.

Having considered the consumer loyalty card data at an aggregate level (considering all 26 weeks together), the final piece of analysis presented in this paper will consider how this pattern varies between the individual weeks that make up different parts of the high and low season.

Figure 5 identifies the proportion of loyalty card sales that make up external trade (attributed to customers with postcodes outside the trade area defined by the retailer), and also the proportion of external trade that is to overnight staying visitors (using the 61 mile distance threshold). From figure 5, it is clear that during the peak tourist season, just under 50% of loyalty card expenditure can originate from outside the store trade area, falling to as little as 12.5% during January. In particular, out of catchment trade appears to peak during the school holidays and at key national holidays such as the late May bank holiday and Easter, falling most notably during January and early December, which coincide with the period of lowest visitor numbers as inferred from occupancy rates.

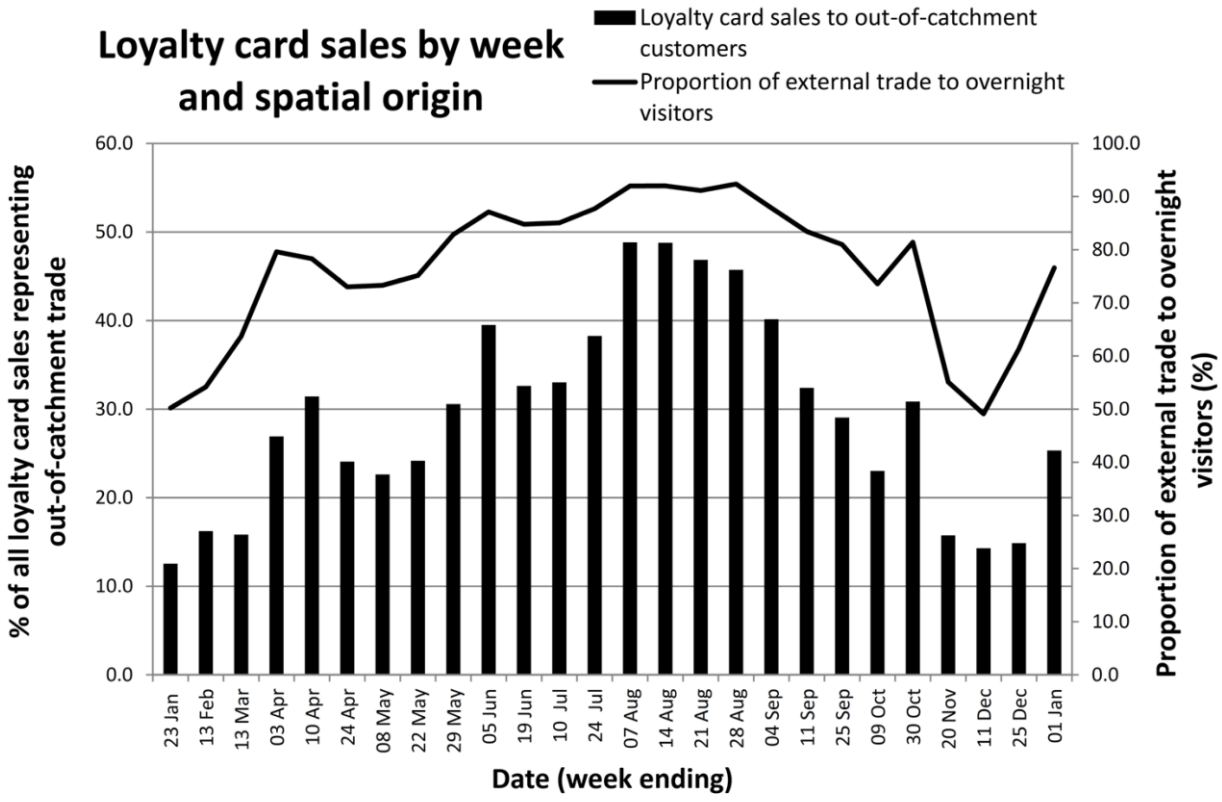
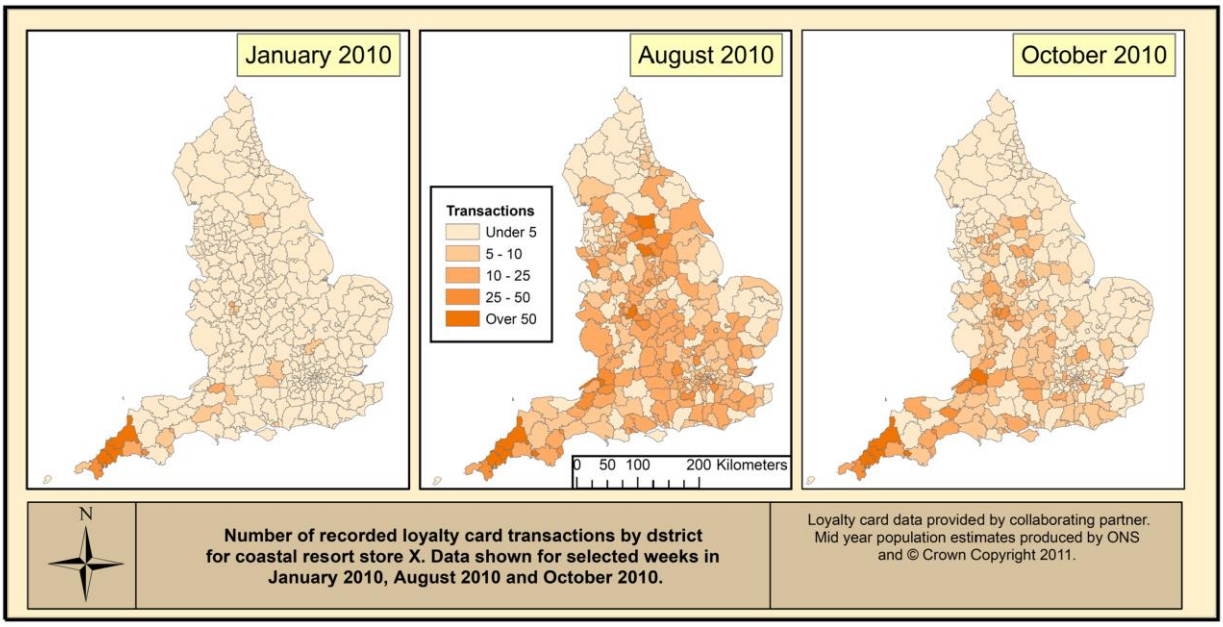


Figure 5 also suggests that the proportion of out-of-catchment sales attributable to staying visitors is highest in the summer, peaking at over 90% in July and falling to around 50% in early December and during January. This suggests that day trip visitors make up a greater prortion of visitors during the low season, and may boost sales at a time when the number of staying visitors are lower. Figure 5 strongly supports the assertion that there is a clear link between the visitor economy and store trading patterns.

Although not shown on Figure 5, the analysis also suggests that loyalty card utilisation may be slightly lower during the peak visitor season, with loyalty card transactions making up as little as 37% of all store revenue during August 2010, rising to over 60% during christmas 2010. This suggests that visitors may be less likely to make use of

loyalty cards when shopping away from home, perhaps shopping with a retailer that they would not usually visit.

Figure 6 aggregates individual customer transactions at a district level and allows comparison of the spatial pattern of all loyalty card transactions by week. It is apparent that the spatial pattern of customer origin for the store varies considerably by season. During the peak school holiday period in August customers are seen to originate from districts across most of the UK, including notable clusters in the West Midlands and Yorkshire. During the October half term holiday it can be observed that the overall number of transactions is lower, and that customers are more likely to originate from areas that are more accessible. For example, clusters around Avon and the West Midlands, both linked to the M5 motorway, are apparent with less customers originating from East Anglia, Kent and Sussex or the North East.



The spatial disparity is most noticeable when comparing August with the low season in January, during which almost all transactions are found to originate within Cornwall itself, with very few districts recording any noticeable cluster of transactions outside

Cornwall. It is thus essential that retailers consider this spatial pattern within their location planning, identifying not just the volume/value of external trade and the type of products purchased, but also the spatial origin of external trade. This insight will allow retailers to account for spending that will be displaced from other stores that lose significant numbers of local customers holidaying in resorts such as this at certain times of year.

Conclusions

The aim of the analysis discussed in this paper is to understand the contribution of visitor demand to the seasonal sales variations experienced at retailers in major tourist destinations. The analysis of store and loyalty card data demonstrates that stores in major Cornish coastal resorts experience a pronounced seasonal trade pattern with a clear indication that these sales fluctuations are driven by visitor demand. This paper has demonstrated that the investigation of seasonal sales driven by tourist spend is more complex than the analysis of other forms of demand.

Visitor expenditure tends to be concentrated in specific locations far more than residential demand, with large clusters of visitors existing around key accommodation sites or principal attractions. In particular, the volume and value of visitor expenditure has been seen to demonstrate significant fluctuation over time, not just between the high and low season, but also at different points within the season. This is likely to represent the different types of visitors and type of accommodation used at different times of year and forms the focus of subsequent research. Likewise, the spatial pattern of the origin of visitor demand has been identified to vary at different times of the year, with the peak summer season attracting expenditure away from consumer's 'home' stores across a greater range of districts within England.

This paper therefore argues that it is essential for retailers to ensure that their location planning makes full use of all available consumer data to understand the local nature and impact of visitor expenditure. With rare access to loyalty card data, we have demonstrated that it is possible to build up a detailed spatial and temporal understanding of small area visitor demand. We aim to use this insight to develop spatial modelling techniques that can address the impact of visitor expenditure within store location planning. This is particularly important at a time when retailers are increasingly seeking to diversify their store formats and range of store locations in order to meet consumer demand in a variety of contexts.

Notes

1. South West Tourism was funded by the South West Regional Development Agency and was responsible for delivering the tourism strategy for the South West. Following the withdrawal of funding to RDAs, South West Tourism ceased operations in March 2011. The final version of their accommodation database was supplied in February 2011 and updated by the author to include missing and incomplete entries and is considered to accurately represent the accommodation provision as of May 2011.
2. In 2009 Cornwall became a Unitary Authority; however, for the basis of this analysis, the former districts that made up the County of Cornwall have been used.

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