

Appendix 1
Methodology and FAQ

Sources and data

What is UKTS?

The United Kingdom Tourism Survey is undertaken by BMRB for VisitBritain and is based on 1,000 telephone interviews per week. It provides basic headline data on the volume and value of domestic tourism throughout England, and is based on the county or unitary authority.

What is IPS?

The International Passenger Survey is conducted by Office for National Statistics and is based on face-to-face interviews with a sample of passengers travelling via the principal airports, sea routes and the Channel Tunnel, together with visitors crossing the land border into Northern Ireland. Around 0.2% of all travellers are interviewed, with some 55,300 interviews of overseas visitors obtained in 2001. IPS provides headline figures, based on the county or unitary authority, for the volume and value and value of overseas trip to the UK.

What is UKDVS?

The leisure day visits survey was last conducted in 1998 and covered 5,444 leisure day trips in total. Trends observed in 1998 have been carried forward to 2001. The number of tourism day visits is driven by unified regional template, assumes 2.5% growth in coastal trips and 5% growth in town trips since 1998. Incoming Welsh trips are not counted in survey.

What is the Occupancy Survey?

As part of the EU Directive on Tourism Statistics adopted in 1995, the UK must report regularly a specified range of statistics to Eurostat, the official statistical office of the European Community. Included in these statistics are monthly occupancy rates for UK serviced accommodation. The responsibility for providing this data lies with the four National Tourist Boards. A sample of establishments are recruited to the survey and asked to complete a data form each month, giving details of their nightly occupancy. The data returned is processed and analysed to produce monthly occupancy rates for the whole area and for specific categories of type, size, location etc.

What is the New Earnings Survey?

The New Earnings Survey provides information on wage levels by industry sector and occupation. The main strength of the NES is its large sample size. It is based on a 1% sample of employees who are members of PAYE. The coverage of full-time adult employees is virtually complete, and consequently the survey is representative of hours worked for full-time employees on adult rates of pay (although the survey is currently not weighted). The coverage of part-time employees is not comprehensive, as some part-time workers will have earnings below the income tax threshold. The NES is the best source for estimating full time earnings and the 2001 edition has been used.

What is the Labour Force Survey?

The LFS is a household panel survey, continuous since 1992, with results produced each quarter. It has a sample of approximately 60,000 households. The LFS is the government's largest continuous household survey and participation in the survey is voluntary. LFS data are weighted to enable population estimates to be produced. The weighting also attempts to compensate for differential non-response among different subgroups in the population. LFS is designed to provide information on the UK labour market that can be used to develop, manage and evaluate labour market policies.

Terms used

What is a day visitor?

Making a day trip to and from home for leisure purposes. The report excludes trips undertaken for business or study purposes. This report presents data on all day visits as defined by the Leisure Day Visits Survey 1998, together with a subset who took trips of at least 3 hours duration on an irregular basis. The latter are identified as tourism day trips by the Department of Culture, Sport and the Media.

What is a staying visitor?

Staying away from home for at least one night. Often measured in trips to overcome the issue of one visitor making two or more trips to an area in a given period.

What are VFR trips?

Visiting friends or relatives is the main purpose for making a trip. While many trips to visit friends and relatives will be accommodated in the homes of these friends/relatives, some will make use of other forms of accommodation. It should also be noted that other forms of trip, for instance for holiday or business purposes, may stay with friends and relatives rather than in commercial accommodation.

What is a multiplier?

Additional activity arising as a result of an initial direct input. For instance, employment supported by the expenditure of wages earned by employees in businesses supported directly by tourism spending.

What are full time equivalent jobs (FTE)?

For the purposes of the Model, a FTE is defined by the average annual salary plus employment costs in the sector concerned.

What are actual jobs?

Many jobs are seasonal or part-time in nature in the tourism sector, so an adjustment is made to calculate the actual number of jobs from the number of FTEs. The adjustment is based on the findings of surveys of tourism related businesses, and national employment surveys.

What are direct jobs

Jobs have been, for the purposes of this model, divided into direct and indirect jobs. Direct jobs are those in businesses in receipt of visitor spending.

What are indirect jobs?

Indirect employment arises as a result of expenditure by businesses in direct receipt of visitor expenditure on the purchase of goods and services for their businesses, for example suppliers of goods, financial and legal services, and maintenance contractors.

What are induced jobs?

Induced jobs arise from the spending of wages by employees in direct and indirectly supported jobs. Such spending will be spread across a wide range of service sectors.

What are total jobs?

Total jobs include those in tourism related businesses supported by tourist spending and those indirectly arising or induced by spending across the service sector in suppliers of goods and services.

What is 'other tourism spend'?

Apart from expenditure associated with the individual trips, some forms of activity also involve ongoing expenditure on accommodation, for instance second home or boat maintenance, or result in additional spending by non-visitors, for example friends and relatives with whom the tourist is staying.

Figures and statistics

Why is there a '0' in the trips column but there are nights spent in the accommodation?

This oddity is due to rounding. Where the figure is less than 500 and the output is rounded to nearest 1,000, it will record 0 as the figure.

Why is there a '£0' for static vans in the 'other tourism related spend' section?

The additional spend associated with static caravans which is not included in trip spending has not been included for any District. Data was not extracted on non-hire holiday static caravans from the TRIPS database as it is unclear the extent of regional coverage. Most of the additional spending consists of rent for the site, and possibly a share of the purchase cost of the caravan. In due course, it is envisaged that data will become available to provide a basis for adding data for this element. Given the uncertainties, however, it was decided to omit the statistics from the South West exercise. **What is the definition used to identify 'urban' and 'countryside' for day trips?**

The Leisure Day Visits survey collects data on urban, countryside and coastal trips, but the definition depends on the respondent rather than a specific definition. The distribution of leisure day trips in the model uses, firstly, visits to attractions in urban, coastal and countryside locations and then the remaining bulk of trips by specific drivers. In the case of town trips, the driver is the number of employees in the retail and entertainment sectors as defined in the Annual Business Inquiry. The main attraction for town trips tend to be shopping, visiting friends and relatives and trips to theatre, cinema etc, and the retail and entertainment sectors are regarded as a proxy measure of the attractiveness of the District for such trips. The Template also weights the employment to take account of the additional spending and hence jobs supported by staying tourists in the individual districts.

The Mathematical model

How does the model work?

The Cambridge Model is a computer-based model developed to calculate estimates of the volume, value and economic impact of tourism on a County or District basis. It draws on the combined experience of PA Cambridge Economic Consultants Ltd, Geoff Broom Associates and the Regional Tourist Boards and utilises a standard methodology capable of application throughout the UK. It therefore offers the potential for direct comparisons with similar destinations throughout the country. The approach was the subject of independent validation (R.Vaughan, Bournemouth University) in December 1994. The Model was judged robust and the margins of error acceptable and in line with other modelling techniques.

The first stage of the Model utilises information from national tourism surveys and regionally based data held by the tourist board (outlined above). It distributes regional activity as measured in those surveys to local areas using 'drivers', such as the accommodation available, that influence the distribution of tourism activity at local level. The first stage generates indicative estimates of the volume and value of tourism activity including day visitors within a local area. Note that these estimates are constrained to the published county headline figures.

In order to distribute county/unitary totals to local level, the following information sources available at a local district level are utilised.

- Records of known local accommodation stock held by Regional Tourist Boards.
- Surveys of Visits to Attractions, collecting data on the number of visitors to individual tourist attractions within their area.
- Estimates of resident population as rebased on the 2001 Census of Population.
- Selected data from the 2001 Census of Employment.

UKTS provides information on the total number of trips to the region and the relative proportions using different types of accommodation. By matching these figures to the supply of accommodation the average number of trips per bed space or unit of accommodation can be derived. UKTS also indicates the proportion of trips to the region that are spent with friends and relatives so that the average number of such trips per resident can also be calculated.

IPS provides information on the total number of overseas trips by purpose to the region on an annual basis, and a breakdown by type of accommodation used every fourth year. Using this data, an average number of overseas trips by type of accommodation and per resident in the case of trips staying with friends and relatives can be calculated.

The average trip figures generated by different types of accommodation (e.g. hotels, B&B, holiday cottages, touring caravans and tents, static caravans, holiday villages, group accommodation and other forms of accommodation) and for trips staying with friends and relatives, can be used to generate an estimate of the number of trips to the local area. Assuming that the use of different types of accommodation is similar across the region, applying the average trip figures to the estimated stock of accommodation in a particular local area and to the resident population provides an estimate of trips by type of accommodation in that area. Where robust occupancy data is available, the capacity of serviced accommodation can be varied to take account of differences within the county and region. Similar adjustments are made in respect of the level of overseas occupancy in serviced accommodation and of business use.

The UKTS and IPS also provide data on the expenditure by trip purpose at a county level from which an average spend per trip by type can be calculated. By applying this average spend figure per trip to the number of such trips estimated to take place locally, an estimate of total tourism spending in the local area can be made. The national surveys also provide information on the number of nights by purpose at regional level allowing a similar calculation to be made in respect of the local number of nights.

The Day Visits Survey distinguishes between day visits to a town or city; to the seaside and coast; and to the countryside. Different drivers are used to distribute these trips within the region. However, a proportion of the trips will be to attractions within the region. The latter are therefore distributed on the basis of the attractions survey information collected by the BTA/ETB. Only tourism trips taken on an irregular basis and lasting for three hours or more are included.

Information is available for second homes from the 1991 Census of Population. Information on marinas and moorings has been gathered from the RYA Marina Directory and other locally contacted sources. However it is likely to underestimate the number of actual moorings available along coastal inlets, rivers and canals. Group accommodation includes university accommodation in halls of residence. The latter is only available out of term time. Therefore in calculating capacity, the university accommodation capacity has been weighted downwards by 50% to reflect its lower availability.

The economic impact is based on the estimates of spending by staying and day visitors. The second stage of the Model uses these estimates of expenditure by different visitor groups within the local area as the basis for estimating the level of employment supported by that spending. This includes an internal business database that uses data on the structure of business expenditure, local linkages and multiplier ratios drawn from a wide range of business and economic studies carried out by Geoff Broom Associates, PA Cambridge Economic Consultants and others.

Information on the breakdown of visitor spending is available from the three main tourism and day visitor surveys by type of visitor. The Model divides the expenditure between five sectors:

- Accommodation
- Shopping for gifts, clothes and other goods
- Eating and drinking in restaurants, cafes and inns
- Entry to attractions, entertainment and hire of goods and services
- Transport and travel costs including public transport, purchase of fuel and parking

By applying the expenditure breakdown to the estimates of visitor spending, the Model generates estimates of total spending by the five business sectors. Visitor expenditure in each sector represents additional turnover for businesses in those sectors. However, evidence from national studies suggests that some minor adjustments are required to match visitor spend to business turnover. In particular, some expenditure on food and drink actually takes place in inns and hotels that fall into the accommodation sector, and at attractions. The turnover for each business sector has therefore been adjusted to take account of these marginal changes. More significantly, expenditure on travel costs associated with individual trips is equally likely to take place in the origin of the trip as the destination. It is therefore assumed that only 60% of total travel expenditure accrues to the destination area.

Having identified the value of turnover generated by visitor spending in each business sector, it is possible to estimate the employment associated with that spending. A portion of that turnover will be absorbed by wages for staff and drawings for the proprietors. The proportion will vary by business sector, thus wages are likely to be a smaller proportion of costs in retailing compared to accommodation or catering. The Model uses data from the Business Information base to ascribe an average proportion of turnover taken by wage and drawing costs for each business sector. By applying these proportions to the overall additional turnover in each sector, the amount of money absorbed by employment costs can be calculated.

The NES provides data from which the average wage costs by business sector, adjusted to take account of regional differences, can be calculated. It also provides information on variations in earnings by occupation at District level, allowing the relative differences between District and regional wage levels to be estimated. After allowing for additional costs such as National Insurance and pension costs, an

average employment cost per full time equivalent job in each sector can be estimated. The number of such jobs in the local area can then be estimated by dividing the amount of business expenditure on wages and drawings by the average employment cost per job in each sector in the local area.

The use of visitor expenditure to generate job numbers underestimates the number of jobs arising in the attractions/entertainment sector. The underestimate arises because local authorities and voluntary bodies do not always seek to recoup the full operating costs of individual attractions or facilities from entrance charges. Therefore an additional percentage of direct employment is added to the attractions sector estimates to take account of this factor.

Additional indirect employment arises as a result of expenditure by businesses in direct receipt of visitor expenditure on the purchase of goods and services. However part of this expenditure will go to sources elsewhere in the region or even further afield. The level of local spending will vary by the degree of economic development in the local area. Thus cities and major urban areas are likely to have a much higher proportion of suppliers than rural areas, so that the leakage of supply spending out of the local area is higher in the latter. The pattern also varies by sector, with accommodation and catering businesses often purchasing fresh food supplies locally, whereas many retail and transport businesses buy in the bulk of stock from major depots and suppliers elsewhere.

Using data from the Business Information base, the average proportion of business turnover spent on local purchases by sector by type of area has been estimated. By applying that proportion to the additional business turnover arising from visitor spending, an estimate of the local spending on goods and services can be made. Such linkage spending will benefit a wide range of sectors ranging from producers including farmers and manufacturers, distributors, and service providers such as lawyers, bankers and window cleaners. The average turnover required to support a full time job vary widely by sector. The Model therefore assumes a figure of £55,000 turnover to support an additional linkage job. By applying this figure to the turnover re-spent on local goods and services, an estimate of the number of indirect jobs arising in the local area can be estimated. Business purchases outside the local area will generate additional jobs elsewhere in the region and beyond, but these additional jobs are not captured in the model beyond the county level.

In addition to the direct jobs and indirect linkage jobs supported in the local area by visitor spending, additional employment will be generated by multiplier effects, i.e. additional employment supported by the expenditure of wages earned in the direct and linkage jobs in the local area. Such multiplier jobs will again be spread across a wide range of sectors including retailing, catering and transport as well as public service jobs such as education, health and local government. The degree of multiplier effect will depend on the nature of the local economy, since the number of higher-level services tends to be concentrated in larger urban centres. The Model therefore uses average local multiplier ratios based on national studies ranging from 1:1.05 in rural locations to 1:1.15 or more in city locations. The multiplier ratio is applied to the total of direct and linkage jobs estimated in the local area. It should be noted that additional multiplier effects would arise outside the local area in the wider region.

The Model generates estimates of full time equivalent jobs based on visitor spending. However the total number of **actual jobs** will be higher when part time and seasonal working is taken into account. The full time equivalent jobs arising directly from visitor spending are converted into actual jobs using information from business surveys in the sectors receiving visitor spending. In general, the conversion factor varies around 1.5 in those sectors. The indirect and induced jobs arise across a much wider range of employment sectors. Therefore the average of 1.16 for all service sectors based on Census of Employment data has been used to convert full time equivalent jobs in this sector to actual jobs. The employment estimates generated by the Model include both self employed and employed people supported by visitor expenditure. However they do not include other tourism related employment such as jobs in local authorities arising from their tourism functions, e.g. tourist information staff, additional public health, parks and gardens, public conveniences and maintenance sections, and jobs arising from capital investment in tourism facilities.

The sum of the district figures in each county should match the trips, nights and spend figures at county level, but the jobs figures will vary slightly. There are two reasons for this. First, the average wage figures vary for each district and county and there are likely to be marginal differences as a result in the number of direct jobs generated. Second, more indirect and hence induced jobs will arise at county level as a result of supply spending outside the district but within the county. The latter will not be captured in the district figures. The differences will be least in Avon and highest in the rural counties. No allowance is included for the impact of new capital spending or for public sector employment related to tourism management and promotion

What are the model's limitations?

The Model in its basic form relies on using information from a range of sources, outlined above. The methodology and accuracy of these sources varies, and therefore the estimates can only be regarded as indicative of the scale and importance of visitor activity in the local area. Thus the Model cannot take account of any leakage of expenditure in and out of the local area from tourists taking day trips in or out of the area in which they are staying. While it is assumed that these may broadly balance each other in many areas, there will be an underestimate in relation to overseas day visits from holiday accommodation in London to locations receiving significant numbers from that source. Similarly, there is no information in the 1998 Leisure Day Visits survey with regard to business day trips. As with all models, the outputs need to be viewed in the context of local information and knowledge. Because of the data sources and modelling process, there will be a potentially large margin of error associated with individual figures, with small numbers being particularly prone to such errors. Therefore the outputs should be taken as indicative rather than definitive.

Are the outputs from this model comparable with outputs from previous years?

The outputs detailed throughout this report are not directly comparable with outputs from other models or other years. There are three main reasons for this. First, the model has been set and devised specifically for this research and is based on a regional template that includes Gloucestershire and the whole of Dorset. Previous regional templates only included East Dorset. Second, estimates of trips, nights and spend have been constrained to the published county IPS and UKTS figures. Other model outputs have not been constrained. Third, a range of local survey data has been used in generating model outputs in previous years. This model was run specifically without using such local data unless it is available on a region wide basis, so that the inputs were consistent across the region.

Common Abbreviations

AONB	Area of Outstanding Natural Beauty
DCMS:	Department for Culture, Media and Sport
FTE:	Full Time Equivalent job
GDP:	Gross Domestic Product
GVA:	Gross Value Added
IPS:	International Passenger Survey
RCDF:	Regional Cultural Data Framework
SWCP	South West Coast Path
SWRDA	South West of England Regional Development Agency
UKDVS:	United Kingdom Day Visits Survey
UKTS:	United Kingdom Tourist Survey
UNESCO	United Nations Educational Scientific and Cultural Organisation
VFR	Visiting Friends and Relatives

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