

## 2. LITERATURE REVIEW

A literature review was undertaken to establish what is currently known about the nature and scale of countryside recreation, in particular what type of people visit the countryside and what attracts them to visit. This information will be useful in providing comparative data for this study and setting the findings of this study into context.

In addition to the above, a review of studies highlighting methodological issues specific to countryside research was also undertaken to assist in designing the research tools to gather data for this study.

### 2.1 Demand for countryside recreation

With the absence of detailed survey data, it is hard to quantify the overall volume of leisure visits to the countryside across the UK and trends in volume. The limited data that does exist at national level indicates a decline in the number of visits to the countryside. According to the recent GBDVS Survey, from 1998 to 2002-3, the volume of leisure day visits to the countryside decreased by 12% (from 1.4 billion to 1.2 billion).

	1994	1996	1998	2002/3
All leisure day visits	5.2 bn	5.7 bn	5.9 bn	5.2 bn
Countryside leisure day visits	1.3 bn	1.5 bn	1.4 bn	1.2 bn
% of all trips made to the countryside	25%	26%	24%	24%
Spend – all visits	£ 53.2 bn	£ 63.4 bn	£ 77.7 bn	£71.1 bn
Spend – countryside visits	£ 8.0 bn	£ 8.7 bn	£ 10.1 bn	£10.9 bn
Ave. spend per person – all visits	£ 10.30	£ 11.10	£ 13.10	£ 13.70
Ave. spend per person – countryside visits	£ 6.20	£ 5.90	£ 7.10	£ 8.60

Data gleaned from the UKTS reveals that between 2000 and 2003, the number of trips involving a visit of one night or more in countryside locations in England declined by 20%, from 32.3 million to 25.7 million. However, trips to the countryside as a percentage of all tourism trips has remained relatively unchanged (21% in 2003 compared with 23% in 2000).

	2000	2001	2002	2003
All trips (England)	140.4 mn	131.9 mn	134.9 mn	121.3 mn
All countryside trips	32.3 mn	29.0 mn	28.3 mn	25.7 mn
All nights	439.2 mn	409.2 mn	415.8 mn	371.9 mn
All countryside nights	109.8 mn	102.3 mn	99.8 mn	n/a
All spend	£ 19.9 bn	£ 20.3 bn	£ 20.8 bn	£ 20.6 bn
All countryside spend	£ 4.1 bn	£ 4.0 bn	£ 4.3 bn	£ 4.2 bn
Ave. spend per person per trip	£ 129.35	£ 139.76	£ 154.10	£ 165.79
Ave. spend per person per night	£ 38.04	£ 39.64	£ 43.74	n/a

Other anecdotal data sources, often drawn from discussions with country park managers, suggest that the use of the countryside for sport and recreation is growing (Elson, 2004).

With regard to the New Forest, current estimates on the volume of visits suggest a significant expansion in the number of visits. The All Parks Visitor Survey undertaken in 1994 estimated that around 6.6 million people visited the New Forest annually. Other recent estimates put this figure at 20 million visits per annum (New Forest Fact File, 2004). However, previous estimates have often been based on rather crude measures, reducing the validity of the figures.

The volume and value figures presented in this report are drawn from a recently constructed bespoke economic impact model.

## 2.2 Factors affecting propensity to visit

The review was used to decipher what factors affect people's propensity to visit the countryside. People's socio-economic background, how close they live to the countryside, and whether they own a car are among the important factors which influence whether they are likely or unlikely to visit the countryside. The following section examines these factors in more detail.

### 2.2.1 Demographic and socio-economic factors

According to the Great Britain Leisure Day Visits Survey, little has changed with regard to the socio-economic background of leisure day visitors to the countryside over the last five years.

	1998	2002/3
<b>Age:</b>		
Under 45	52%	49%
45+	48%	51%
<b>Gender:</b>		
Male	52%	49%
Female	48%	51%
<b>Social Grade:</b>		
ABC1	61%	65%
C2DE	39%	34%
<b>Car owning household:</b>		
Yes	90%	93%
No	10%	7%
<b>Personal access to car:</b>		
Yes	86%	89%
No	14%	11%
<b>Children in household:</b>		
Yes	32%	32%
No	68%	68%
<b>Working status:</b>		
Full time job	46%	49%
Retired	22%	21%

The review reveals a number of enduring features among the profile of people who visit the countryside and in the nature of their visits. Those who visit the countryside are more likely to be older adults, in employment, car owners, and from higher occupational grades (ABC1's). Those least likely to visit are young adults, people in C2DE social groups, particularly those in low income jobs and those who do not own a car.

The under-representation of young people and disadvantaged groups has been a concern for a number of local authorities. The Countryside Agency's Integrated Access Demonstration Projects has been one recent initiative to look at ways to widen participation. However, it should be noted that low participation does not necessarily equate to disadvantage. A recent survey found that that low levels of participation in countryside recreation by young people in Southeast Hampshire was a function of tastes and preferences rather than barriers to participation (Leisure Industries Research Centre, 2001).

National Park visitor surveys reaffirm the affluent and mature profile of visitors. A recent survey of the proposed South Downs National Park found that 78% of visitors were in the socio-economic categories A, B, and C1 (79% of all staying visitors and 75% of all day visitors) and 20% of visiting parties included children under the age of 16 years.

Visitor surveys undertaken in the New Forest in the early 1990s reported that the vast majority of visitors were ABC1s (Ecotec, 1992) and that 67% of visiting parties were all adult groups (Centre for Leisure Research, 1995). More recent data on visitors to the New Forest is available from surveys of visitors interviewed in key towns in the New Forest (STB, 2000/2001).

**Table 5: Characteristics of groups making leisure visits to New Forest towns/villages (STB, 2000/2001)**

	Lyndhurst	Lymington	Ringwood	Burley	Fordingbridge
<b>Age:</b>					
Under 45	30%	29%	25%	44%	35%
45+	70%	71%	75%	56%	65%
<b>Social Grade:</b>					
ABC1	79%	84%	73%	64%	68%
C2DE	21%	16%	27%	36%	32%
<b>Working status:</b>					
Full time job	67%	70%	57%	70%	61%
Retired	30%	27%	33%	21%	36%
<b>Group type:</b>					
Adults only	81%	86%	82%	64%	61%
Groups including Children	19%	14%	18%	36%	39%

### 2.2.2 Car ownership

As indicated earlier car ownership, related to income, is another key feature of visits to the countryside. Survey data reveals that the vast majority of visitors come from car owning households and travel to national parks by private motor vehicle (see Table 5). The convenience and ease of travel are the most common reasons for travelling by private motor vehicle.

**Table 6: Percentage of visitors travelling by car**

Destination:	% travelling by car	Source:
South Downs	84%	Southern Tourist Board (2003)
Dartmoor National Park	90%	Liston-Heyes & Heyes (1999)
Chilterns AONB	77%	Southern Tourist Board (1999)
Peak District National Park	87%	Heart of England Tourist Board (1998)
New Forest	96%	Centre for Leisure Research (1995)

### 2.2.3 'Core' users

While there are no definitive figures on the number of people who visit the countryside for recreational purposes, there is some evidence that the main users of the countryside are a relatively small group of people who visit time and time again. The National Countryside Recreation Survey of 1990, for example, estimated that as many as 6 out of 10 visits are made by only 1 in 10 of the population. This finding is also confirmed by Glyptis' (1991) analysis of countryside visit surveys in the 1970s and 1980s. She noted that around 68% of all trips during both decades were made by around 17% of the population.

Whilst the above studies are over a decade old, until new research finds evidence of change, it is probable that this feature still persists. Evidence of this can be gleaned from the high level of repeat visitation reported in more recent visitor surveys. 40% of visitors interviewed at the Lymington-Keyhaven coastal path and nature reserve in 2002 had visited five times or more in the previous 12 months (TSE, 2003). The 2002 survey of visitors to the proposed South Downs National Park found that half of all day visitors (excluding local residents) had visited the South Downs five times or more within the last 12 months (TSE, 2003). Similarly, 44% of non-local day visitors to Ashdown Forest in 2004 had visited five times or more within the previous 12 months (TSE, 2005).

Among the most frequent users are local residents. A study assessing the demand for sport and recreation in the New Forest (University of Portsmouth, 1996) found that the 'core' users of the New Forest are local residents, and that the volume of visits by local residents have been underestimated in previous surveys. The study found that although only 22% of all visitors to the New Forest were made up of local residents, they formed the major user group because of the frequency of their visits. Further research into local use of the New Forest found that 72% of local residents took part in outdoor recreational activities in the New Forest (University of Portsmouth, 2001).

#### **2.2.4 Personal motivation**

For most visitors, nice scenery, peace and quiet, places for walkers, attractive villages, and relative closeness are ranked as important factors influencing people's decision to visit the countryside (Centre for Leisure Research, 1995; University of Portsmouth, 1996; HoETB, 1998; STB, 1999). For those travelling from large towns or cities, the countryside's aesthetic attributes coupled with the traditional pastimes of walking, watching the view/wildlife, relaxing and picnicking articulate a need to escape from the day-to-day pace of urban life into an environment that offers the qualities of open space, fresh air and tranquillity (Liston & Heyes, 1999; Bowles & Green, 2001, TSE, 2003).

More recently, these motivational factors are being joined by the desire to engage in outdoor activities that are characterised as more active and competitive ranging from off-road motor vehicle driving to paragliding (Keeling, 2003). Generally speaking, however, more recent surveys report that the more traditional pursuits continue to dominate (Curry & Ravenscroft, 2000; Bowles & Green, 2001).

Most visitor surveys reveal that trips to the countryside tend to involve what could be described as 'passive pastimes' such as walking and enjoying views (Centre for Leisure Research, 1995; Standeven, et al., 1994; Countryside Commission, 1995; HoE, 1998; STB, 1999; TSE, 2003). This feature has encouraged commentators like William (1995) to distinguish between 'routine' and 'special' outdoor activities. 'Routine' activities include walking the dog, jogging, local walks, while 'special' activities include visiting a place of interest or an attraction, or a major holiday.

The routine activities tend to take place on a daily basis in the local neighbourhood, might involve just one individual, will tend to be of short duration, and may not even be accorded much weight or significance. The special activities take place further afield, require more forward planning, and are of longer duration. The latter type of visit is very much a social activity reflected by the fact that most people travel as a pair or as part of a group.

#### **2.2.5 Weather conditions**

According to Powell et al., data collated from a number of national parks indicate that the weather - whether it is raining or sunny - has a greater influence on visits than personal motivations (HoE, 1998, Countryside Agency, 2000). The seasonality of recreational activity leads to a peak in the popular seasons and a lull in less favourable periods.

The national surveys indicate that whilst the majority of visits are made in the summer and mostly at weekends, seasonal variation is not as great as day of week in terms of when most visits are made, with Sunday being the most popular day (Countryside Commission, 1995).

#### **2.2.6 Travel time and distance**

As indicated earlier, the distance from home to the countryside is a key factor influencing visitation. From her review of countryside recreation surveys over the 1980s, Glyptis (1991) found that half of all trips to the countryside involved a 'round-trip' distance of less than 20 miles and over one third were under 10 miles.

Later surveys continued to highlight this feature. The All Parks Visitor Survey found that excluding local residents, 80% of visitors on a day trip came from areas within easy reach of the New Forest (Centre for Leisure Research, 1995). Eight out of ten day visits to the Chilterns were also found to be by people living in areas immediately adjacent to the AONB (STB, 1999). A recent visitor survey undertaken in the proposed South Downs national park found that 89% of day visitors originated from homes in the counties surrounding the South Downs (TSE, 2003).

#### **2.2.7 Characteristics of individual sites**

It is also widely held that the particular landscape features and visitor facilities available at a site will have an impact on the type of visitors who visit and the volume of visitation. Well known beauty spots with viewpoints might attract one type of visitor

who is driving through the area stopping at several sites, car parks at the head of footpaths might attract a more active type of visitor (e.g. group of hill walkers), while sites offering a café/restaurant, toilets and educational facilities might attract families with young children.

Certain sites may only be visited during a significant holiday period due to their remoteness, other sites might be visited every day of the year due to their accessibility but only for certain limited activities such as jogging and walking the dog.

Specific site level surveys suggest that national and country parks located close to major urban conurbations attract more day visitors than those that are more remote. The survey of visits to the Chilterns found that 82% of visitors were day visitors (STB, 1999). 74% of visitors to the proposed South Downs National Park were also found to be day visitors (TSE, 2003). This stands in sharp contrast to the profile of visits to the Peak District, where around 75% of visitors were found to be staying for one night or more in the area covered by the Park (HoETB, 1998).

## **2.3 Non-visitors**

In terms of the reasons people provide for not visiting the countryside, lack of time, lack of knowledge and lack of interest are main reasons for not visiting. Given that most people get to the countryside by car, not having a car is a major constraint.

Relative distance of countryside sites from the population is also a central factor. Earlier studies show that where people live can be a barrier, with people who do not live in or near the countryside being more likely not to make a visit (Countryside Commission 1995). Accessibility of sites is also tied in here, in terms of ease of access by road and in terms of availability of information. According to Powell et al., (2001) "visiting the countryside often appears to be a product of how easy it is to get there".

The visitor survey of the proposed South Downs National Park found that the main reasons provided by non-visitors and lapsed visitors for not visiting the South Downs were; poor physical mobility/disability/health reasons, lack of time, no access to a car, preference to go elsewhere, and lack of interest in the countryside. Results split by occupational grades suggest that slightly more DE households were prevented from visiting due to not having a car and due to poor physical mobility/health reasons.

## **2.4 Countryside sustainability**

### **2.4.1 Pressures on the environment**

Whilst it is recognised that visits to the countryside encourage greater appreciation and respect of its natural assets, its impact on well-being and the role it can play in reviving declining rural economies through visitor expenditure in local businesses, it is also recognised that visitors in large volumes can also bring irreparable harm to the countryside.

It has already been noted that most trips to the countryside are made by car. According to Liniado's examination of 'car culture' and its impact on the countryside, he concludes that "...since the 1950's and 1960's countryside leisure has become almost totally car-based" (1996:73). High car use brings with it the inevitable problems of traffic congestion reducing the enjoyment of the visit for the visitor, making everyday life more difficult for local people and causing damage to the environment through car pollution.

Drawing on the specific visitor management problems experienced by the Peak District, Swarbrooke (1999) identifies a number of additional problems. These include:

- Footpath erosion caused by people, horses and mountain bikes;
- Damage to delicate ecosystem such as the peat moorlands;
- Fire damage to vegetation as a result of camping and vandalism;
- Damage to rock-faces from the activities of the rock climbers who use artificial cuds;

Other problems include illegal and inappropriate use of Rights of Way by 4-Wheel drivers and trail bikers, litter and uncontrolled dogs. Even some of the more innocuous activities such as walking which arguably can be viewed as more sympathetic to the natural environment can be erosive. Increasing volumes of people walking along popular sections of footpaths cause ground vegetation to die and the soil to be exposed and then eroded. The trampling of vegetation also can damage sensitive plant communities and consequently the dependent wildlife.

Over the years, a number of strategies have been deployed by local authorities and park authorities to address visitor pressures. Most of these have focused on visitor behavioural change (i.e. encourage less use of the private car). The research suggests that any form of persuasive communication needs first and foremost to establish a positive link between visitor enjoyment and visitor learning.

## **2.5 Methodological issues**

To establish the research tools most suitable for gathering the required data, a review was also taken of methods used for visitor monitoring purposes. A description of these methods and their limitations is presented below.

### **2.5.1 *Estimating visitor numbers with mechanical/electronic devices***

Mechanical/electronic counters provide a simple way of recording data such as the number of cars or persons passing the location where the counter is situated.

Counters are useful in providing information on incidences and attendance and play a role in more remote sites, or sites where the physical layout of the site allows for the effective use of counters. A number of different devices are available.

Automatic vehicle counters have been used by several National Parks to estimate visitor numbers. North York Moors National Park uses a network of automatic traffic counters on a cross section of roads (including minor unclassified roads) which gathers hourly data on traffic flows. This information is then calibrated by traffic census data giving more accurate recreational traffic figures. Dartmoor National Park also uses similar methods. Estimates of visitor numbers are based on automatic traffic counters placed on all major routes in to the Park.

Seven Sisters Country Park in East Sussex uses automatic vehicle counters to estimate visitor numbers to the Park. The number of 'clicks' is multiplied by an estimate of the average number of people per vehicle.

Where they are available, pay and display machines can also be used to provide estimates of visitor numbers as well as an indication of length of stay. In 1999, a car parking ticket machine was introduced at Dinton Pastures Country Park's main car park charging people to park at weekends throughout the year and daily during major school holidays between the hours of 10am - 4pm. This gives some indication of car numbers to the Park and can be compared year to year. The figure does not, however, give an accurate view of visitor numbers to the Park as only days when parking charges apply are counted.

Automated Pedestrian counters (e.g. Break Beam deflector) are another method available for counting visitor numbers at specific sites and usage of specific walking routes. Most devices use beams to detect persons crossing the beam. Alternative devices include gate counters which record the number of times a gate is opened, or step counters, which are pressure-operated devices that can be installed on stiles or under paving slabs to record numbers passing over that point.

### **2.5.2 *Limitations of Mechanical and Electronic Devices***

One of the main problems encountered in the use of mechanical and electronic devices is the difficulty of securing a satisfactory sample of data. In most instances counts can only be provided for vehicles or people passing the location of the device. Vehicle counters often cannot distinguish between a car with two people and a coach containing 74 people.

Vehicle counters, as the name implies only provide a record of number of vehicles travelling to the site. It cannot record visitors travelling by foot, cycle or horse, and automatic pedestrian counters cannot distinguish non-persons such as dogs and horses. The other problem is that non-recreational traffic cannot be distinguished. Vehicles in transit through the area that do not stop along with delivery vehicles and members of staff entering and leaving the site would also be counted. Therefore automatic counters are better at producing accurate estimates at positions where there is no through traffic. Adjustment and calibration is therefore important to gain greater accuracy of estimates.

Counters are also subject to breakdown, damage and vandalism, which affect the quality of the data collected.

With both vehicle and pedestrian counters we also have the problem of counting visitors more than once if there are a number of entry and exit points and thereby have a tendency to over-count. Data from Pay and Display can on the other hand underestimate visitor numbers due to dishonesty, i.e. visitors parking without paying.

Data from automated traffic counters on main recreational routes need to be calibrated with roadside surveys on key routes to assess the proportions of recreational and non-recreational traffic and average number of visitors per car.

### **2.5.3 Observational techniques**

Electronic and mechanical devices are ideal when only counts of visits are required. They cannot provide information on the characteristics of users. Direct, unobtrusive (i.e. where individuals do not know they are being surveyed) observational techniques have also been used to gather data on visitor behaviour through recording observed behaviour and the characteristics of visitors.

Observation is a useful method when the prime objective is to record spatial data since they allow data to be gathered in relation to the exact location of people at a given time. This technique is particularly useful for investigating the ways in which sites are used by different types of visitors.

A major advantage of discrete area observation is that it takes an objective approach to survey site usage. For example it avoids some of the problems associated with face-to-face interviewing such as bias through exaggeration, status consciousness and difficulties in recalling actions such as the number of previous visits made. That said, the accuracy of surveys depends on the professionalism of observers and the robustness of the methodology.

Observation was tested as a method of assessing countryside recreation in North Ceredigion, Mid Wales (Keirle & Walsh, 1999). The survey area was divided into 1km grid squares and observers recorded all activities within the parameters of each square. From the observed squares an estimate of the average number of people engaging in recreation in any one 5 minute period between 11am and 6pm was calculated.

Observation has also been used to record purely quantitative data such as total footfall. Manual pedestrian counters are often used in visitor centres by staff using hand held counters.

### **2.5.4 Limitations of observation methods**

Areas of observation need to be clearly defined, as it would be difficult to observe behaviour over a large area or long distance. Such a method does not remove the need for questionnaire surveys at intensively used countryside sites. Data from observation can only produce information on levels of use in specific areas, as the natural limitations of human observation prohibits a large area being observed by one person.

If observation is used to record the number of visitors at a site, difficulties may occur if there are multiple entry and exit points. In fact the use of this method could be problematic in densely used areas where recording individuals more than once may distort results. A possible solution to this could be the registration plate method (Van der Zande et al., 1985) whereby details

of clothing are recorded to enable individuals and groups to be recognised again. However, during times when visitor flows are large, and when visitors come in large organised groups, observers simply cannot count everybody.

Observational techniques cannot differentiate between utilitarian and recreational use, i.e. between people who may simply be cycling or walking on a footpath to get to work, and those who are using it as part of a leisure day trip or holiday trip. Nor can day visits and overnight visits, domestic and overseas visitors be distinguished.

Another problem is that when observation is used to record recreational activities, it suffers from having to convert behaviour patterns into simplified data sets that can then be interpreted.

The manual counting of cars poses the problem that there is no easy way to distinguish between cars which are associated with recreational and non-recreational visits, or to eliminate double-counting if visitors tour between sites and park in several car parks in one day.

### **2.5.5 Questionnaire surveys**

Questionnaire surveys are most commonly used for visitor profiling in order to obtain information about a range of topics such as: socio-economic profile of the users of site, distance travelled, home address, types of recreational activity undertaken, levels of satisfaction, perception of the site, expenditure and frequency of visit. There are three main methods of data collection: face to face interviewing, telephone interviewing and the use of self-completion questionnaires.

**Face to face interviewing** is usually undertaken by trained personnel at the point of exit from a site. This method works best when dealing with large volumes of people in a concentrated area, for example at a festival or a busy high street. With regard to countryside surveys, personal interviews are most effectively deployed at sites popular with visitors.

Face-to-face interviewing methods generate higher response rates than postal or telephone surveys. Interviewers can also ask more complex questions since the interviewer can explain them further and this method has the benefit that skilful interviewers can pick up information that might be missed through mail or self administered surveys.

**Telephone interviewing** offers several advantages over traditional face-to-face interviewing, such as more efficient data collection and the ability to interview respondents dispersed over a large geographical area more easily.

**Self-completion questionnaires** are completed by respondents themselves without an interviewer. The main advantage of postal self-completion surveys is that it enables data to be collected from geographically scattered samples more cheaply and quickly than by either face-to-face doorstep interviews or telephone interviewing.

Self-completion questionnaires can also work well when trying to target hard to reach visitors. For example, it is not always appropriate to interrupt a visitor in the middle of an activity such as horse riding or cycling. To reach these visitors it may be more appropriate to leave questionnaires in a well displayed box at the start or end of a forest bridleway/cycle route or in a car park.

Most issues regarding visitor surveys relate to sampling, sample size and survey periods. Bias is minimised and representativeness enhanced by the process of random sampling. In most visitor surveys selection is made from the population at regular intervals, e.g. every 'nth' person to pass the interviewer.

Recommendations as to the sample size required are based on establishing an acceptable level of accuracy, the extent of sub-group analysis required, and the available budget.

Sample size is always a compromise between statistical accuracy and cost. Generally speaking, a larger sample is more accurate and thus more desirable at all levels of analysis. That said, the accuracy of a sample does not increase in direct proportion to its size: a sample of 8000 is not twice as accurate as one of 4000. In general for sample accuracy to be double,

the sample size must be quadrupled. A small gain in accuracy comes at a very high cost. A recent study in the development of a common methodology for collecting visitor information, recommended a minimum sample size of 2000 completed interviews in each of the national park areas. A sample of 2000 provides results accurate to  $\pm 2\%$  at the 95% confidence level (NFO, 2002).

As a number of national parks are used as all year round destinations, the survey period needs to cover a full year. However, the overall sample of interviews does not need to be spread out evenly throughout the year. The focus can remain on the peak months provided that a minimum number of interviews are undertaken in the off-peak months to allow some comment on their profile and characteristics. It is also necessary to have a good spread of interview times and days (a.m./p.m. and weekdays and weekend).

### 2.5.6 *Limitations of questionnaires*

Due to the cost of **interview-based surveys**, most interview locations will be at busy sites rather than in the wider countryside, which may be used in lower densities by significant numbers of visitors such as those who wish to avoid busy sites. It is important to acknowledge that achievement of the overall target sample will depend on a number of contingent factors such as weather conditions.

Roadside surveys in particular can be prohibitively expensive. In addition to the costs of employing and paying the police to control the traffic, the large number of roads that cross a Park boundary (e.g. the Peak District national park has some 232 roads which cross the Park boundary) means that a full cordon survey is rarely possible.

To minimise costs, volunteers rather than trained market research interviewers are often used to carry out face-to-face interviews. In the case of the APVS, staffing the survey with volunteers encountered a number of problems. These included high turnover of staff resulting in staff shortages, staff not attending training days, and discrepancies in the way in which different volunteers collected data.

One of the main limitations of **telephone surveys** is that households without telephones are excluded from the research. While this group now accounts for fewer than five in a hundred households, non-ownership of a telephone is not distributed evenly, but is concentrated among certain sections of the population. The other main problem relates to equalisation of probabilities of inclusion in the survey. Due to the high level of ex-directory numbers, now accounting for more than one in every three households, the use of traditional sampling frames, such as the BT Phone Book, means that a significant section of the population is automatically excluded from the research.

A limitation of **postal questionnaires** is that questions must be unambiguous with precise definitions and it is more difficult to collect information about attitudes and perceptions using this approach. People do not always give accurate responses. The reliability of responses depends on the interviewee recalling with accuracy, answering with honesty and having a complete understanding of the question.

Statistical confidence in questionnaire surveys depends partly on achieving a high response rate as non-respondents may have very different characteristics from respondents. The response rate for postal questionnaires are typically low, sometimes below 10%.