

# MEASURING THE COSTS AND BENEFITS OF BUSES USED FOR LEISURE TRIPS

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## 1. INTRODUCTION

Seasonal buses in tourist areas often come very low in the priorities of local authorities and other potential funders and yet they bring a number of benefits to local people, businesses and environments. Those benefits are rarely evaluated, let alone used to decide whether the benefits warrant the costs. Building on previous research conducted by the Institute of Transport and Tourism (Guiver and Lumsdon, 2006; Tourism on Board, 2007), this project funded by the Economic and Social Research Council, aimed to help those involved in running seasonal bus services evaluate the benefits of those services and present evidence of those benefits.

The main benefits considered were: local spending, social inclusion, health and well-being and reduction in car use. From the eight schemes surveyed, (723 respondents), it was found that on average each passenger spend £25.89 per day in the local economy, including £20.25 on accommodation for the 47% staying in holiday accommodation, that 35% of the passengers otherwise would not have left home that day (and 29% would have visited another destination), that 69% of passengers reported that they had participated in physical activity and that 27% of passengers would have used a car if the bus had not been available.

In addition to the survey, the Institute of Transport and Tourism organised a seminar which attracted over fifty participants including managers of bus services, bus operators, transport consultants, community groups, local authorities and academics. Participants were grouped according to their roles and asked to take part in a group activity which involved deciding spending levels for a fictitious bus service with three different levels of funding and benefits whose marginal benefits varied according to the level of funding. The preliminary results reveal very different priorities, resulting in very different allocations, possibly indicating why there is so little consensus about the benefits of such services.

## 2. Context

The bus services included in this study are variously called seasonal buses (although some run all year round), tourist buses (although some carry a high proportion of local residents) or leisure buses. They predominantly serve tourist and leisure destinations in rural areas and usually need some support from local authorities or other organisations such as National Parks or Areas of Outstanding Natural Beauty. This support is justified as important for:

- social inclusion
- allowing people without private transport access to areas which are conserved and protected for the good of current and future generations through public taxes.
- the environment
- reducing the number of cars and their impacts such as noise, visual intrusion and air pollution in areas, often valued for their tranquillity, landscapes and fresh air (Reeves, 2006)

- the local economy
- bringing more people into the area whose expenditure helps support local industries and services

More recently, the health and well-being benefits have been discussed, partly because this is seen as a potential source of funding for services in the future.

In 2005 and 2006 the Institute of Transport and Tourism co-ordinated surveys of passengers using these buses in 18 and 14 areas respectively. Their reports (Guiver and Lumsdon, 2006; Institute of Transport and Tourism, 2007) were the first attempts to evaluate the benefits of these buses over more than served area. The findings indicated that a significant proportion of passengers would have stayed at home without the bus service, that many would have resorted to car travel to the same or a different destination and that bus passengers contributed to the local economy with their spending on the day of travel but also for accommodation in the area.

**Figure 1: Findings from Tourism on Board 2005 and 2006**

	2005	2006
Total number of respondents	3053	1478
% of passengers who would have stayed at home without the bus services	29	24
% who would have visited another destination	38	37
% who would have used a car	19	23
Average spending per day	£16.18	£18.07
Average spending per passenger on night's accommodation	£26.40	£25.20
% of passengers using holiday accommodation	16	48
Average number of nights stayed per staying visitor	4	5.5

The evidence from the surveys helped secure funding for some of the services (Wise, 2008, Gregory, 2009), but other services have been cut or threatened with withdrawal or reduction of support. Although Tourism on Board was seen as successful in providing evidence of the benefits of these services and sometimes useful for obtaining funding or resisting cuts, the costs (£500 per area) were seen as diverting funds from bus provision and the University could no longer afford to subsidise the costs of the survey.

### 3. The Project

Between 2006 and 2009, it became evident that many areas were struggling to monitor their own services. The monitoring which was conducted was often limited to straightforward descriptive statistics, with no attempt to cross tabulate the results of one question with another and few surveys recorded passenger spending. The Institute of Transport and Tourism applied for a knowledge transfer grant from the Economic and Social Research Council (ESRC) to develop a package which would help organisations to monitor their service. The idea was to provide the Institute of Transport and Tourism's expertise in designing questionnaires and doing analysis in a user-friendly and accessible form, so it could be used by any such bus service without the need for further input from the Institute.

The grant award was delayed by problems within the ESRC and was only announced in June 2010 commencing on 1st July. This threw the initial timetable which was to develop a questionnaire with the input of officers responsible for bus provision at meetings in April. By that time the extent of Government cuts was becoming

apparent, and people facing restructuring or possible redundancy were less focused on the intricacies of questionnaire design and bus service quality.

The questionnaire was designed and revised with the help of several interested officers and was customised for seven areas:

- Three Rivers Rail Partnership which runs buses out of Eastleigh Station, Hampshire, to Marwell Wildlife Centre on summer Sundays
- Brecon Beacons National Park Authority which runs several inter-connecting bus routes into the Park on Sundays and Bank Holidays through the summer.
- Durlston Country Park and National Nature Reserve, Swanage, Dorset, which runs a summer service to the park from Swanage and the main car parks.
- Peak District National Park Authority which supports a number of Sunday services to and within the park.
- The Yorkshire Dales Community Interest Company which runs several leisure services, mostly at weekends but also at other times
- Hadrian's Wall bus service, organised by Hadrian's Wall Heritage, which plies between Newcastle and Carlisle between April and the end of October
- Northumberland Coast Area of Outstanding Natural Beauty Partnership, which promotes a commercial service run by Arriva

Several other areas indicated they were interested in using the package, but because officers were ill or lacked the time or resources to conduct the survey, they were unable to complete the surveys before the end of their season. An eighth area, North Norfolk, (the Norfolk CoastHopper service) was surveyed in May 2011, just before the end of the grant.

#### **4. Method**

The questionnaire (a double sided sheet of A4 paper, folded in three) asked a number of questions about how the respondent had heard about the service, how they were using it, their levels of satisfaction, spending in the local area, whether they were residents or visitors, their alternatives if the bus had not been running and socio-demographic information. It was customised to each area with their logo, the name of the survey and the introductory paragraph.

Each area was responsible for printing their questionnaires and conducting the survey, and surveyors were asked to complete standardised logs for each journey. Areas also inputted the data with the help of an inputting form, which replicated the paper question on the screen and populated an Excel spreadsheet behind it (see Figure 2). The programme, designed by the Learning Development Unit and Library and Information Service of the University of Central Lancashire could then generate an automatic report from the inputted data. This was based on the type of analysis on similar data conducted by the Institute of Transport and Tourism in a software package, previously known as Statistical Package for the Social Sciences (SPSS) and now renamed as Predictive Analytics SoftWare (PASW).

Because the questions were standardised, the data collected are compatible and each area has contributed their data to the 'common pot' which allows the Institute of Transport and Tourism to do analysis on the data from 723 respondents.

Figure 2 Screen-take of Inputting Spreadsheet

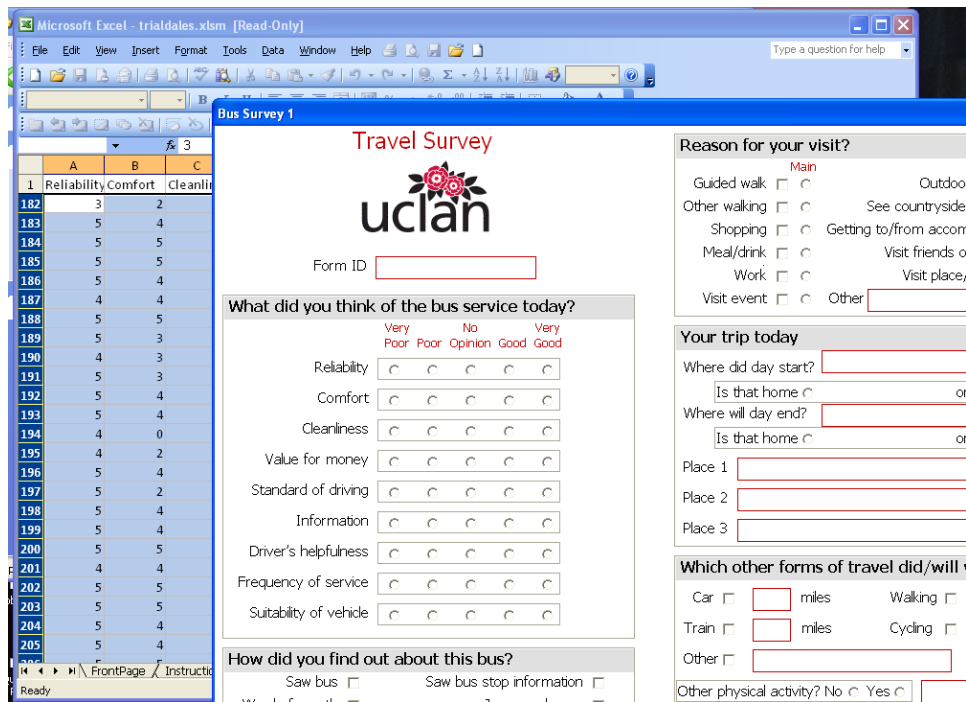


Figure 3: Screen-take of how report generated

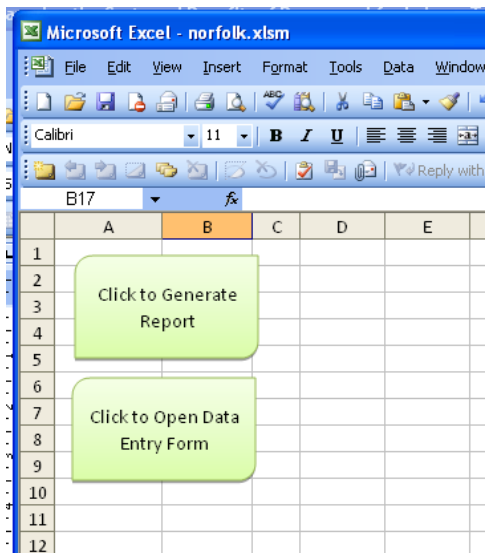
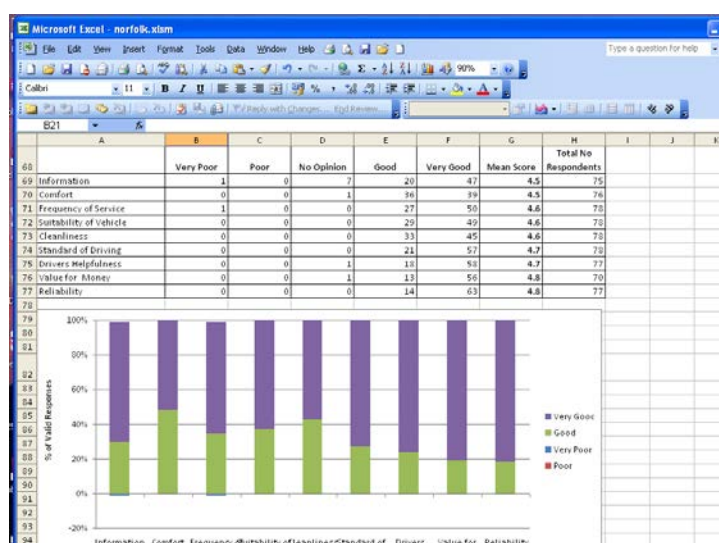


Figure 4: Part of Report automatically generated by package



## 5. Findings

### 5.1. Passengers

55% of the respondents were female, with the majority (74%) over 50 years old; 59% were over 60 and 22% over 70. The passengers' annual incomes were typically quite low with 40% saying they were under £10,000, however, 11% had incomes of over £40,000 pa. 10% of the respondents reported that a disability impeded their mobility. Cars were available to 55% of the passengers and the most common reasons for a car not being available were: not owning a car (26%), being on holiday without car (9%) and not being able to drive (9%).

### 5.2. Motivations and Activities on the day

The main reasons for using the bus were Walking (48%) Visit Place/Attraction (34%) and See Countryside from the bus (24%). The most common way of knowing about the bus was Used before (33%) followed by Leaflet, Word of Mouth, Bus Stop Information and Tourist Information Centre (all at 11%). The degree of familiarity with the area and bus service varied considerably from 20 and 29% respectively who had never visited the area or used the bus service before to over half (55%) who reported using the bus service in the last month. Most passengers (69%) reported they had walked during their day out, 3% that they had cycled and 18% that they had participated in other physical activity.

### 5.3. Alternatives if Bus not running

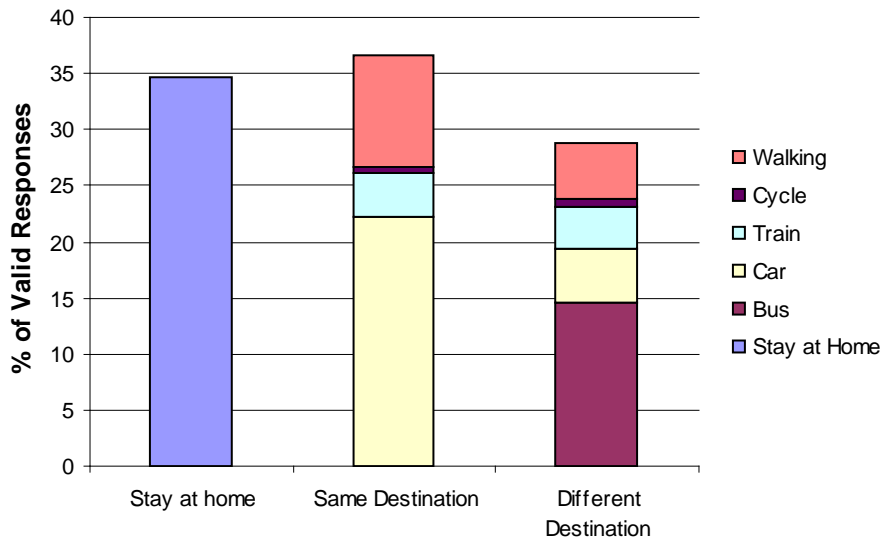
When passengers were asked about their alternatives if the bus had not been running, 35% would have stayed at home, 35% would have visited the same destination using another mode and 29% would have visited another destination. This implies that the destination would have lost 64% of these visitors if the bus service had not been provided. 27% would use a car to get to their destination (see Figure 5). Nearly half (47%) said they would have changed their day of travel if the bus had not run the day they wanted.

### 5.4. Satisfaction with Service

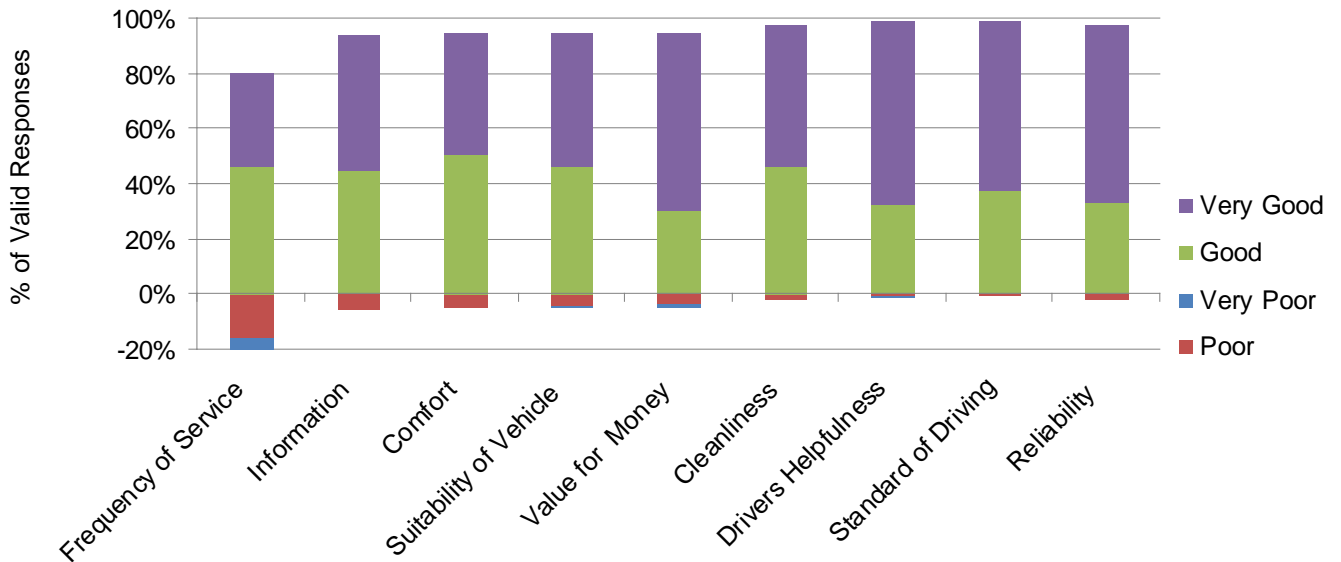
Levels of satisfaction were high for all attributes of the buses, the one most likely to draw adverse comments was Frequency (see Figure 6). In addition passengers

were asked whether they came because the public transport was good, whether they would recommend the service to a friend and whether they had enjoyed their day. The replies re-enforce the satisfaction expressed with the attributes. 62% of respondents agreed that they came because the public transport was good, 90% agreed that they would recommend the service to their friends, 65% agreed with / had a great time and a further 23% said they had *mostly* enjoyed their day.

**Figure 5: Alternatives if bus not running**



**Figure 6: Levels of Satisfaction**



## 5.5. Spending

The average spend per passenger on the survey day was £16.47 (the total expenditure reported divided by the total number of respondents). This is certainly an underestimate as it assumes that those who did not report any expenditure spent nothing, while many may have skipped the question or forgotten what they spent. The main item (£6.14 on average) was spent on food and drink, followed by shopping (£4.86) and bus fares (£2.07). In addition 47% of the passengers surveyed were staying in holiday accommodation at an average cost of £20.25 per person per night. When this is averaged out over all the passengers (whether in holiday accommodation or staying in their own homes) it brings the total average expenditure to £25.89 per passenger per day, much of which would have been lost to the destination if the bus service had not existed.

## 6. Value for Money?

The findings indicate that these services are collectively 'ticking most of the boxes' for bringing benefits to the destination areas. The age, income, disability and car-availability profile of the respondents suggests that the services are helping sections of society who might be excluded to access these rural areas. The large proportion (35%) of passengers who reported that they would have stayed at home if the bus had not been running also suggests that the services are important for including people with few opportunities for reaching the countryside.

Those with more car-availability were likely to use their cars if the bus had not been running. 27% of the respondents said they would have used their cars to reach the same or a different destination, indicating that the buses are helping to reduce car use.

The level of spending per person may seem relatively low compared with other tourism spending. (For example: Visit Britain (2011) estimates that inbound tourists spend on average £563 per visit and an average visit lasts 7.6 days making an average of £74.08 per day, while Domestic Tourists spent an average of £43 per night in the UK in 2009 (Visit Britain, 2009). Visitors to Windsor in 2010 were estimated to spend £75.83 per person per day including accommodation costs (The Borough of Windsor and Maidenhead, 2010). However, many of the passengers (54%) were day visitors, visiting rural areas often with limited opportunity for spending. The benefits though may be greater through the local multiplier effect (New Economics Foundation and Countryside Agency, 2002) because they are often injecting money into small businesses who also spend in the locality.

In terms of health and well-being these services appear to be performing well. Not only do a high proportion of the passengers undertake physical activity, they are over-whelmingly happy with their day out as well as the bus services.

How can these benefits be valued? One of the problems of deciding whether these services provide value for money is not having monetary values for most of the benefits. This means it is hard to weigh one benefit against another or against the costs of providing those benefits. If choices have to be made, is helping three people who otherwise would not have been able to enjoy the countryside, they have paid taxes to help protect worth more or less than removing one car off the road in a tranquil area?

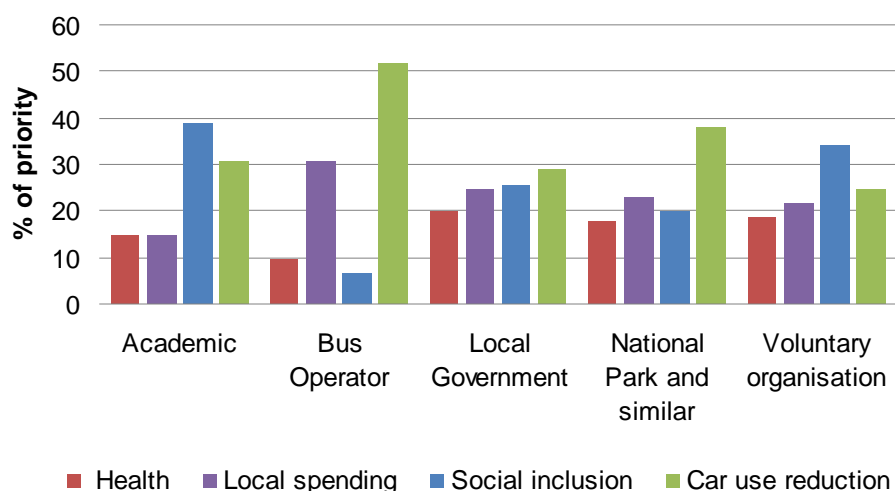
## 7. The Group Activity

To help explore whether there were common values, the Institute of Transport and Tourism devised a game to be played at the seminar reporting the survey results in Preston April 2011. Participants sat at tables with colleagues from similar jobs and/or backgrounds with six tables in total:

- Consultants
- Bus company managers
- National Park, Area of Outstanding Natural Beauty and similar officers
- Community group members
- Local Authority Officers
- Academics

They were first asked to write down their personal allocations of priority in the form of percentages allocated to health and well-being, local spending, car use reduction and social inclusion. Figure xxx shows the averages of each table's allocation (the consultants failed to record theirs). It shows how Academics prioritised Social Inclusion and Car Use Reduction, Bus operators: Local spending and Car Use Reduction, local government officers were more even-handed with a slight priority for Social Inclusion and Car Use Reduction. National Park and similar prioritised Car Use Reduction followed by Local Spending and Voluntary Organisations favoured Social Inclusion followed by Car Use Reduction. Health and Well-being was near the bottom of the priorities for each group.

**Figure 7: Original Allocations of Priorities**

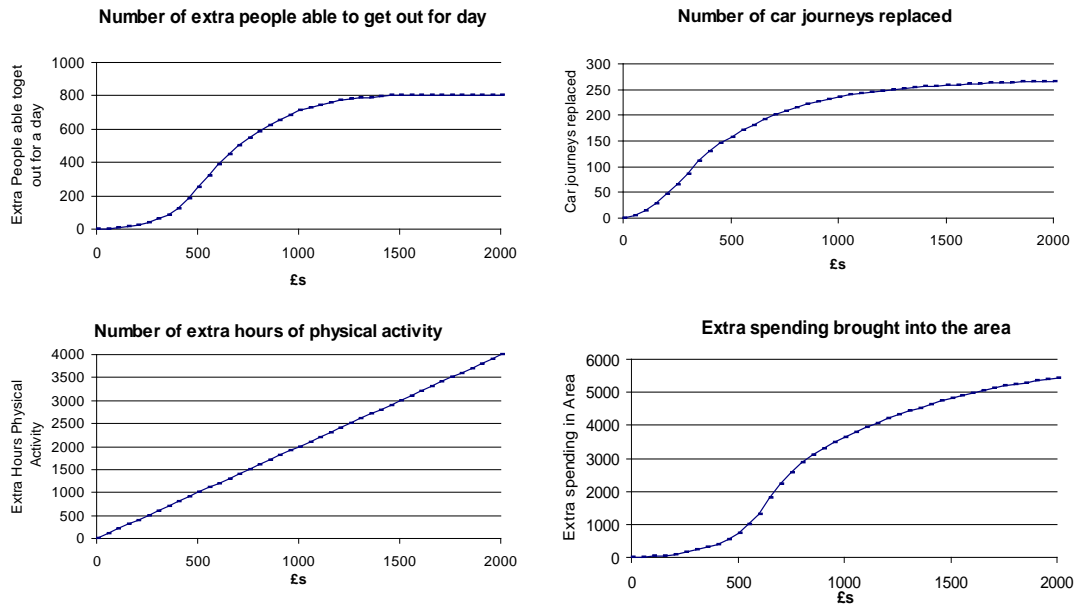


The next stage involved two steps: each participant was asked to individually allocate a budget of £1,000 between the four benefits using a table of returns (see Figure 8). The returns on this table were entirely fictitious and designed to give a variety of trade-offs of different benefits at different levels of expenditure. Figure 8 shows how the benefits were presumed to have different curves, so that while the initial expenditure on social inclusion helped few people, between £500 and £1,500 each pound spent helped an increasing number of people. Additional early expenditure on reducing car use yielded excellent returns but these 'plateau-ed' out after £1,000. Health benefits grew in direct proportion to the budget, but local spending did not exceed the money spent on it until over £500 was spent, after which there was an increasing return for each pound spent.

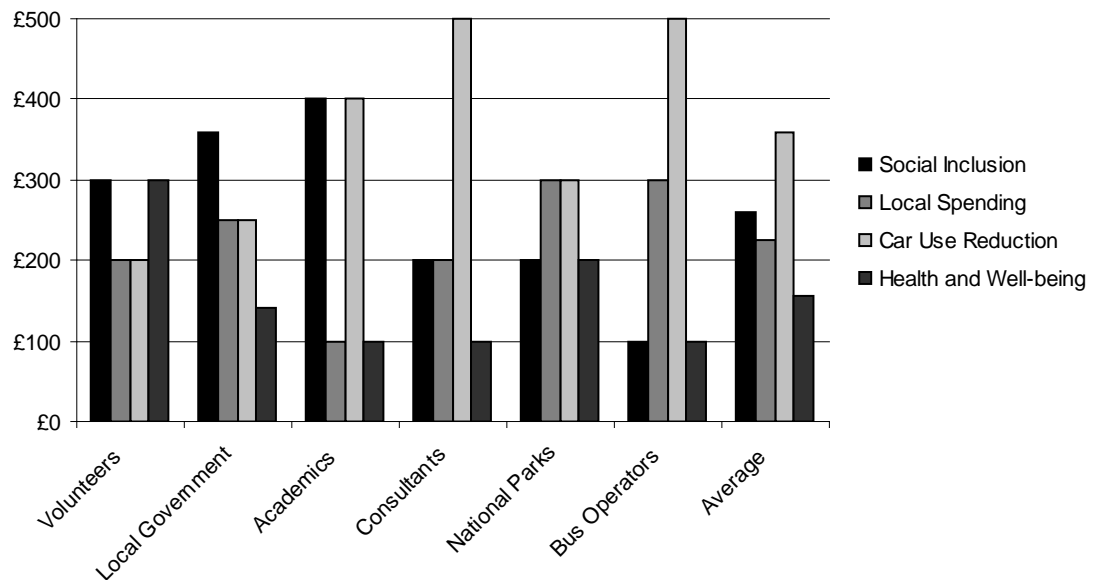


Each group was then asked to agree on the allocation of a joint budget of a £1,000 through negotiation. Counters were provided to help participants explore the marginal value of each £100. The negotiated budgets are shown in Figure 9

**Figure 8: Supply curves for different benefits**



**Figure 9: The Negotiated Budgets for each Group**



The negotiations on each table were recorded to give insights into the decision-making processes, while these have not been fully analysed yet, a few themes have already emerged:

- Participants found it difficult to allocate resources according to their effectiveness if this meant the final budget did not appear to reflect their priorities. So, although investment in local spending was not effective below

£500, many participants wanted to register its importance by allocating it some of their budget.

- In the desire to reach a consensus, stronger voices and arguments tended to have their way, with other, more ambivalent participants more likely to concede.
- Tables developed different strategies to conduct the negotiations including just averaging the individual allocations to avoid discussions
- The allocation was not just to abstract ideas as these also represented different groups of beneficiaries. This made it harder to justify spending money to reduce car use, when this pulled money away from social inclusion and a possibly more deserving client group.

Several participants commented that they found it difficult to comply with the instruction to see each benefit separately, when in practice measures to improve the performance in terms of one benefit would also help realise other benefits (for example reducing fares might attract more car-users while helping to alleviate social exclusion).

In subsequent stages of the activity participants were asked to allocate budgets of £500 and £2,000, but these stages remain to be analysed.

## **8. Discussion**

The group activity gave some insights into joint decision-making. It showed how, not surprisingly, different interest groups have different priorities for judging the performance of these services. It demonstrated some of the difficulties of reconciling priorities with different levels of returns, which could result in money being wasted on aspects showing poor returns in order to express priorities through budget allocation. In this case, supporting local spending cost more than the spending generated until over £500 was allocated, but all the groups spent some money on it yet none spent over £500. This may have been because they had not fully understood the table, which may again reflect how such decisions are made.

The activity demonstrated that joint decision-making is not just a process of weighing up facts, it involves people with different priorities, personalities and processes and can result in apparently 'irrational' decisions being made. The project has devised a method for evaluating the benefits of buses in tourist areas, but any attempt to combine those benefits in a common measure would involve value-judgements, likewise any formula for evaluating the benefits against the costs. Local politicians have to reconcile a number of factors, not just value for money but the political consequences of cutting different services. It seems likely that a bus service mainly carrying people from other areas for discretionary journeys will be easier to cut, however much value for money it provides, than one used only by local people for utility trips.

## **9. Conclusions**

The project has shown how the benefits of bus services might be measured. The next step is to explore how the survey findings could be extrapolated to assess the benefits of such bus services over their whole season and how these could be weighed up against the costs of providing the services.

The surveys give evidence of the benefits of buses in tourist areas in increasing social inclusion, local spending reducing car use and contributing to health through physical activity and well-being through people's enjoyment and satisfaction with the service. It is hoped to develop further tools to extrapolate the survey findings to a

service's whole season using information from passenger loadings. If these could be combined with details of the costs of running and marketing a service the package could be used as a diagnostic tool to identify where money is most efficiently spent. The ability to collect compatible data over a number of areas allows us the present the wider picture and in time will give a longitudinal comparison.

### References

The Borough of Windsor and Maidenhead (2010) *Windsor Visitor Survey*  
<http://www.windsor.gov.uk/site/statistics-and-data/windsor-visitor-survey-2010>  
Accessed 10/06/11

Gregory, C. (2009) Personal communication

Guiver, J. & Lumsdon, L. (2006) *Tourism on Board: Report of Survey of Buses in Tourist Areas*. University of Central Lancashire.

Institute of Transport and Tourism (2007) *Tourism on Board: Report for All Areas*, University of Central Lancashire

New Economics Foundation (2002) *The Money Trail: Measuring your impact on the local economy using LM3*, NEF, London

Reeves, R. (2006) *Tackling Traffic*. Council for National Parks  
Countryside Agency

Visit Britain (2011) Inbound Tourism Facts  
<http://www.visitbritain.org/insightsandstatistics/inboundtourismfacts/index.aspx>  
x accessed 10/06/11

Visit Britain (2009) The UK Tourist: Statistics 2009,  
[http://www.visitbritain.org/Images/UK%20Tourist%202009\\_tcm29-14574.pdf](http://www.visitbritain.org/Images/UK%20Tourist%202009_tcm29-14574.pdf)  
domestic visitors UK Tourist 2009 Accessed 10/06/11

Wise, D. (2008) Personal communication