Assessing the Economic Impact of Culture in Market Towns

TOOLKIT AND GUIDANCE

Loughborough, Leicestershire

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Assessing the Economic Impact of Culture in Market Towns

1 INTRODUCTION

This document and its associated spreadsheet models are intended to assist anyone looking to make an assessment of the economic impact of cultural events and attractions in market towns. The method of assessment that is recommended in this document is based on a survey of attendees at the event or attraction in question. In the case of an event, the survey must be carried out while the event is taking place, and this must be planned some time ahead of the event.

By economic impact, we mean the contribution of the event or attraction to expenditure within the market town. We do not include expenditure elsewhere, nor do we address the many other potential benefits of cultural events and attractions to market towns, their residents and businesses.

A summary of the steps involved in such an assessment is given in Section 2, below. The method of assessment on which this is based derives from an economic idea of the chain of causation leading up to a visit to the event or attraction. The essential elements of this idea are explained in Section 3. In Sections 4 and 5 we offer some advice on how to design a questionnaire and conduct a survey.

Sections 6, 7 and 8 deal with the process of converting the data you have gathered using the survey into a bottom line economic impact figure and other collateral information. In these Sections, the text in this document needs to be read along with a number of spreadsheet models (supplied) which give examples of how to input data and read results.

The principal outcome of an economic assessment project is the estimated financial value of the economic impact of the event or attraction. However, in the course of assessing this there will be additional information produced that can be informative. We offer suggestions about interpreting results in Section 8.

2 SUMMARY OF THE STEPS

In every economic impact assessment, the essential steps are as follows.

1. Decide what it is you want to study: a static attraction or an event.
2. Decide when, where and how you will conduct your survey; this will include the place and time or times, how many interviewers you will use, who they will be, how you will train them and where you will position them to do the survey. As a guide, we recommend you begin planning the assessment at least four weeks before carrying out the survey to allow for unforeseen problems.
3. In order to calculate the economic impact of an open non-ticketed event, you will need to have an estimate of the number of people in the town on the day in question. The source of this estimate depends on the circumstances. You should explore possibilities and decide in advance where and how you are going to get such an estimate.
4. For a gated event or attraction, you will need to know the number of entrants.
5. Design the survey instrument using the examples we have supplied. Do not be tempted to ask questions which are not necessary to deliver the result you need because the shorter the questionnaire the more responses you will be able to get.
6. Test the survey on several people to make sure they understand the questions.
7. Ensure your interviewers are trained to carry out the survey in accordance with your wishes.
8. Carry out the survey at the place/s and time/s you planned.
9. Enter the data into the spreadsheet.
10. Perform the data analysis.
11. Consider your results.
12. If necessary, carry out a supplementary survey.

Please be aware that this method will only provide you with the economic impact in respect of expenditure in the Market Town, so it will only be worth carrying out the impact assessment on an event or attraction which is likely to generate a measurable and substantial amount of expenditure. If an attraction has only a small number of visitors each day (and will therefore need interviewers for several days to obtain a large enough sample) it may not be economical to carry out this method.

You will find material to help you with steps 2 and 5 in section 4, and with steps 9, 10 and 11 in sections 6 and 7.

3 CONCEPTUAL FRAMEWORK

The essence of our proposed method is to measure, by means of surveys of visitors to events and attractions, the strength of the causal connection from the event or attraction to the visit. In the cases with which you may be concerned, the primary purpose is to measure the effect that each event or attraction has on the number of visitors to the market town in which it is being held; in other words, the extent to which the event or attraction causes visits to the market town.

In the following summary of the theory we assume, for brevity, that we are concerned with measuring the effect of a cultural event on visits to a market town. The theory applies equally in respect of the effects of fixed attractions, with certain changes to the approach being made where necessary.

The theoretical model is rooted in a philosophical literature where the notion of a cause is defined to be a necessary, but not sufficient part of a sufficient, but not necessary precondition. In practice this amounts to the following: there are two (and only two) circumstances in which a visit to a market town cannot be ascribed in any part to a cultural event. The first of these is where the visitor was not at all attracted by the event. In the instance of visits to a market town, this may be the case in respect of many visitors, even at the time of a cultural event. The second is where the visitor was attracted by the cultural event but was certain to have been in the town anyway, i.e. even if the cultural event had not been taking place. Where neither of these circumstances applies, the visit in question has been contributed to by the cultural event in some degree.

A cause is rarely an exclusive cause. In our own experience of assessing the economic impact of cultural events in market towns, many attendees were influenced only partially. Relatively few indicated that they were visiting because of, and only because of, the cultural event. One implication of this is that the full economic contribution of a cultural event or attraction is an aggregation of many fractional effects, i.e. it involves visitors who are influenced only in part by the cultural event or attraction.

A complementary perspective on fractional influences is that the path from cause to effect involves two sorts of uncertainty, and in the connection from cultural events or attractions to visits these may both be very substantial. The first type of uncertainty (uncertainty in causality) is that a person who is exposed to material (e.g. advertising) about the event is not certain to visit. When a potential visitor is exposed to material associated with the event, the probability of him/her making a visit remains less than

1. (We shall refer to this as the probability in causality and denote it as k, which will generally be less than 1 or 100%.) The second sort of uncertainty is that a person who is unaware of the event may, nevertheless, make a visit to the town for some other reason. The probability that if it were not for the event a visit would not have been made is the probability in causation, which we denote as c. Thus, c is also generally less than 1. The following figure illustrates.

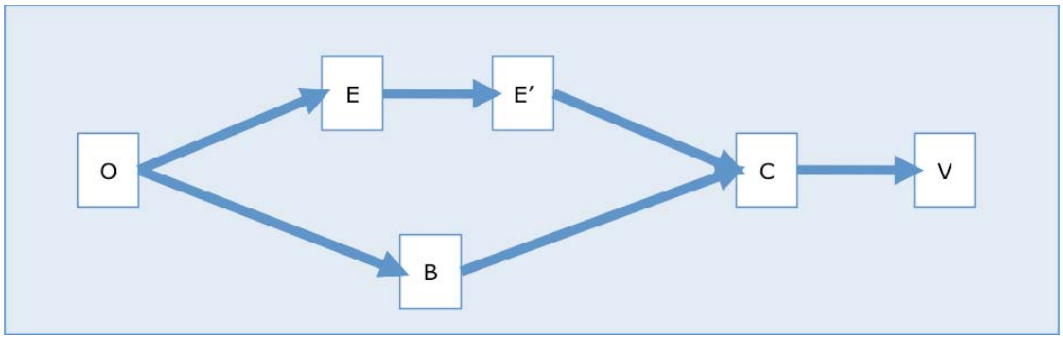

Figure 3.1: A causal chain model

(adapted from Young, Wu and Fernandez Young (2005))

In Figure 3.1, E, E′, B, C and V represent events (i.e. possible occurrences), each of which might or might not happen. O is the origin of the causal chain leading to a visit, i.e. circumstances at the point in time from which we trace events. E is the event that the cultural event is going to happen and this becomes known to a potential visitor by various means, such as advertising. V is the event that this person visits the market town.

The remaining events, E′, B and C are implicit events. What these consist of differs from case to case, but we know that such events must exist, for the following reason. In the causal chain connecting a cultural event to a visit to the market town there are, as mentioned above, two types of uncertainty. In the first place, the occurrence of the cultural event does not guarantee that any particular potential visitor will in fact visit. Therefore, we can infer that there must be some intervening event or events (in Figure 3.1, E′ and C) which also need to happen if a visit is to come about. Secondly, in the absence of the cultural event a visit might be made anyway. In Figure 3.1, a visit happens if there is a completed path from the origin O of the causal chain to the visit V. B is the event of a background stimulus to a visit. In other words, some cause of a visit by this person to the market town other than the cultural event E. In Figure 3.1, there is a path from O to V through B, which does not involve E. By this causal route, the person in question might come to visit the town even in the absence of the cultural event E.

V is the pivotal event, without which there is no economic impact. We can now find out the probability of the visitor making the visit knowing the event is taking place, and what the probability would have been if the event had not been on. The difference between these two is the increase in probability of the visitor making the visit which we can say has been caused by the event taking place.

In terms of Figure 3.1, the cultural event increases the probability of a visit because it adds a second way of a visit coming about. We will call this the uplift in probability of visit, i.e. the uplift in probability is the probability of a visit given the cultural event minus what the probability of a visit would have been if the cultural event had not been taking place.

A cultural event is neither necessary for there to be visits to the town, nor is it in itself sufficient to induce visits. As a means of generating visits, the role of a cultural event is neither that of a guarantee nor of an essential component. Rather its role is in fact to increase the probability of visit, i.e. to make some potential visitors more likely to visit. Similarly, an attraction increases the probability of visits to the town: features of an event may increase the probability of attendance at the event; features of an attraction may increase the probability of visits to the attraction.

We can estimate the fraction of the visit that we can definitely attribute to the effect of the event or attraction by surveying visitors as to the influence of the event or attraction and how likely they would have been to visit in its absence.

At one extreme of the range of responses will be visitors who comment to the effect that they were not influenced at all by what they saw or read about the cultural event or attraction, and that they were definitely going to visit the town anyway for other reasons. Such a visitor has a c value and a k value both equal to 0. Correspondingly, the cultural event or attraction did nothing at all to make this visit more likely.

At the other extreme, there will be visitors who disclose that when they saw material promoting the cultural event or attraction they resolved definitely to visit the market town and that if they had not seen this promotional material they would certainly not have visited. For this visitor, c and k are both equal to 1 and the event or attraction lifted the probability of this visit from 0 to 1. The economic impact of this visit can be ascribed in its entirety to the cultural event or attraction.

The importance of measuring the effect of the cultural event in this way is as follows. We are measuring the contribution of the cultural event in respect of each individual visitor rather than making a binary classification of visitors into ‘event’ or ‘non-event’. Consider the combined contribution of three hypothetical visitors, X, Y and Z.

Suppose that for each of these visitors the increase in probability has been 0.4. Now, if the increase in probability is 1 we have a 'perfect' event visitor, motivated entirely and only by the cultural event. If it is 0 we have a 'perfect' non-event visitor who has not been influenced at all by the cultural event. Making a binary classification would require us to classify a visitor as 'event' only if her increase in probability is closer to 1 than to 0. In the cases of X, Y and Z the increase in probability is much closer to 0 than to 1. If we were making a binary classification, we would therefore have to classify each of X, Y and Z as 'non-event' rather than 'event'.

However, as we are measuring the event effect we can count each of X, Y and Z as 40% of a visitor. Their combined effect is therefore 1.2 visits. By measuring and accumulating the fractional contributions of the cultural event we can see that its effect on these three visitors has been to contribute the equivalent of more than one visit. If we were not looking for these fractional contributions, the effect of the cultural event on these three visitors would be missed.

On a larger scale, consider a group of 100 visitors. If each of these were to have been influenced by the cultural event in the same degree, so that the increase in probability is 0.4, there would be no single visitor in the group who could properly be classified as an 'event' visitor. However, the effect of the cultural event on this group would have been equivalent to wholly motivating 40 of them. In other words, the accumulated fractional effects within this group would be equivalent to the cultural event inspiring visits from 40 visitors who would not otherwise have made the visit.

In the illustrative empirical results which follow, the accumulated value of fractional effects is our summary measure of the effect of the cultural event on visitor numbers.

Arising out of the foregoing analysis of a cultural event causing visits to market towns there is a basic agenda for data collection. In all of the questionnaires that were used, there was a pair of questions to do with the issue of the event causing the visit. The questionnaire we use in our basis case study below, for example, contains the following questions:

On a scale of 0 to 10, how true is it to say that because of today's events (or the part you're interested in) you were definitely going to come today?

0	1	2	3	4	5	6	7	8	9	10

On a scale of 0 to 10, how true is it to say that if today's events had not been happening you would have come anyway?

0	1	2	3	4	5	6	7	8	9	10

The first of these is designed to solicit the respondent's value of k, (the probability in causality), i.e the probability of a visit given the cultural event taking place. The second question in the pair solicits a value for 1-c, where c is the probability in causation, the probability that without the cultural event there would have been no visit. Correspondingly, 1-c is the probability that without the cultural event there would have been a visit anyway. With this interpretation in mind, we shall refer to 1-c as the background probability of visit.

The pertinence of the background probability is that it determines the maximum potential effect of an event. Since no probability can become greater than 1.0 if, in some market town, there is a background probability of visit of 0.8 then there is no scope of an uplift (in any circumstances) greater than 0.2. On the other hand, a small background probability, say 0.3, allows potential for a larger uplift (in this instance 0.7). Thus the background probability tells us the potential for uplift, and this is the context in which we can assess the actual uplift achieved by the cultural event.

The economic impact is calculated by combining the probability uplift with the answers to questions about expenditure. In each case, we ask about two kinds of expenditure: expenditure directly associated with the event and other expenditure in the market town. Since our objective was to evaluate the impact on the economy of the market town, it is only expenditures within the town that are of interest. We attribute expenditures directly associated with the event to the event. Of the other expenditures, these can be ascribed to the event to the extent, but only to the extent, that the event caused the visit. Therefore, only a proportion of these expenditures counts towards the economic impact, and that proportion is equal to the probability uplift.

4 DESIGNING A QUESTIONNAIRE

Every cultural event is unique. In keeping with this, the details of an economic impact assessment must be tailored so as to be appropriate to the cultural event in question. This includes the design of the questionnaire, the execution of the survey, the analysis of the data and the interpretation of the results.

The method on which our impact assessments were based requires that the questionnaire contain a pair of causal questions and two questions about expenditure. The causal questions are those set forth in Section 2, changed appropriately to reflect the event being appraised. The expenditure questions must yield data relating to total expenditure directly related to the event and other expenditure within the town. In addition to these two pairs of questions, the questionnaire must solicit the size of the party of visitors on whose behalf the questions are being answered. Often, one member of a party will answer on behalf of all, but we recommend that the number counted in the party should normally be the number of persons actually present at the time of the interview so that each of them can contribute to the answers if they so wish. These five questions, adapted to the event in question, must be included in the questionnaire.

Beyond these, additional questions can be included to address issues of interest, provided always that there are kept in mind the several reasons for keeping the questionnaire short. Since the causal questions are about previous knowledge of the event having caused the respondent's visit, it may often be appropriate to solicit some information on whether a number of component parts of the event have been influential. However, we recommend that this be done by way of indication of which component parts exerted any influence. Asking pairs of causal questions in respect of two or more component parts is not recommended.

There are two overriding reasons for keeping the questionnaire short. The first of these is quality of essential data. For the purpose of making an economic impact assessment, the five essential questions will suffice. For the assessment to be reliable, we need the answers to these five questions to be reliable. Additional questions may tell us things that are nice to know, but for the task at hand we will not need to know them. There is a limit to the amount of time and concentration we can expect a disinterested person to donate to our purposes. The longer we spend interviewing a respondent the less concentration we are entitled to expect of them and the more we must anticipate unreliability creeping into some answers. We do not recommend the attitude that once a respondent has been found we may as well ask

everything we want. We do recommend that every question beyond the essential five should be included only if there is a clear and compelling reason to do so.

The second reason for brevity is sample size. Shorter questionnaires usually lead to more respondents. This is especially important if the available time interval for interviewing is short, as is the case in respect of many cultural events.

In all questionnaires, you will need to include a pair of causal questions, as illustrated in Section 3 above and shown in Appendix.1. These should be phrased according to the event or attraction, and the following are some examples.

At a pre-Christmas event in Loughborough we used the following pair of questions. They were addressed to people in the streets at the event.

On a scale of 0 to 10, how true is it to say that because of today's events (or the part you're interested in) you were definitely going to come today?

0	1	2	3	4	5	6	7	8	9	10

On a scale of 0 to 10, how true is it to say that if today's events had not been happening you would have come anyway?

0	1	2	3	4	5	6	7	8	9	10

At the Rutland county museum in Oakham we interviewed people after they had entered the museum, using the following alternative version of the pair of questions.

On a scale of 0 to 10, how true is it to say that when you came to Oakham today you were definitely going to visit the Museum?

0	1	2	3	4	5	6	7	8	9	10

On a scale of 0 to 10, how true is it to say that if the Museum had been shut that you would have come to Oakham today anyway?

0	1	2	3	4	5	6	7	8	9	10

A third event or attraction was the Buxton Music Festival. This is an event but, unlike the event in Loughborough, a ticketed one. We interviewed at the event, but could interview only a sample of the attendees. The causal questions we used were:

On a scale of 0 to 10, how true is it to say that when you saw this concert was on you decided definitely to attend?

0	1	2	3	4	5	6	7	8	9	10

On a scale of 0 to 10, how true is it to say that if the concert had not been on you would have come to Buxton today anyway?

0	1	2	3	4	5	6	7	8	9	10

5 CONDUCTING THE SURVEY

The first consideration is the place where the event will be. Where this is not already well known, we recommend inspecting it in advance of the event.

If the event is to take place at a particular venue, or where the subject of the assessment is an attraction, the number of interviewers required will be determined by the available time interval for interviewing (which is determined by the event), the density and flow of visitors during that interval (also determined by the event) and the time taken to conduct an interview (which is determined by the length of the questionnaire).

Where the event will take place in an extended area of the town there are further considerations. The people to be interviewed will be there for a reason and that reason is not to answer questions. This militates in favour of two types of location for interviewers. The first is access routes, so as to approach people before they have arrived at the event or as they are leaving it. At these points, people are not yet, or no longer, taking part in whatever they will be doing at the event per se. The second type of location is by a queue. Many people are quite content to answer questions while they are in a queue. However, this depends heavily on the questionnaire being short enough to complete well within the length of time it will take the respondent to get to the front of the queue.

We strongly recommend bearing in mind that what is in fact a difference between interviewers can appear to be a difference between the respondents they interviewed. There is no way to eliminate differences between interviewers. However, we recommend that teams of interviewers be briefed thoroughly on how to interpret the questions and how to go about interviewing so as to minimise the risk of a problem. We also recommend that interviewers change location from time to time and that the time of each interview be recorded. Where times are to be recorded, we recommend emphasising to interviewers that the time of each and every interview be recorded, not just a sample. For various reasons, during the data analysis the sequence of completed questionnaires may be broken.

6 DATA INPUT AND ANALYSIS: BASIS CASE

The input of data to a spreadsheet for analysis is not a purely routine task. Issues of interpretation requiring judgement arise quite often. We recommend that data input and design of the analysis spreadsheet be done by a person well versed in the ideas explained throughout this report.

6.1 The basis case

The document Spreadsheet 1 applies to a hypothetical event consisting of 4 component events for which we wish to make an impact assessment and also assess the influence of each of the component events. The questionnaire to use is Questionnaire 1 (shown in Appendix.1), which is set up for this hypothetical example of a literary festival.

The data included in Spreadsheet 1 (shown in Appendix.2) are extracted from the actual data collected in the course of our project development work, but with details of the events altered.

6.2 Data and analysis

Please now refer to Spreadsheet 1 of the accompanying excel spreadsheets, this consists of three worksheets namely: Data and analysis, Results, and Distribution diagrams. You should see that the first of these worksheets 'Data and analysis' is organised in terms of a number of columns, the headings of which mostly correspond to the questions in Questionnaire 1. Column C is headed 'Q1' and columns C through G contain the data collected in response to Question 1. The first row of data (row 10) from column C to column G indicates the responses of the first respondent who was asked Question 1. We have input a 1 wherever the respondent said that a component activity had influenced them. In row 10, column D contains a 1 and the other columns concerning Question 1 (C, E, F, G) are blank. This tells us that the first respondent disclosed component event (b) (the second-hand book market) as the only part of the event that had influenced their decision to visit.

Still using Spreadsheet 1 if we read from left to right across row 10, we can see the responses of the first respondent to the other questions. In row 10, columns H and I we have the first respondent's responses to Question 2, the pair of causal questions. This respondent gave a maximum response of 10 to both of these causal questions. Continuing across row 10 to the right, in columns J, K and L we have the first respondent's answers to Questions 3, 4 and 5 respectively. Referring to Questionnaire

1 (shown in Appendix.1), we can see that column J contains the response to Question 3: there were 4 people in the first respondent's party. The figure 60 in row 10 and column K indicates that the first respondent gave a figure of £60 in response to Question 4, which asked for the total amount the party expected to spend. The same figure appears in row 10 column L, indicating that the first respondent anticipated their party spending the full £60 on things to do with the Book Festival.

To recap, reading across row 10 from column C to column L we have the data which the first respondent supplied in response to Question 1 through Question 5 of Questionnaire 1 (see Appendix.1). In addition to these columns, there are columns to the left and to the right within the 'data and analysis' worksheet. The columns to the right titled 'Background probability', 'Probability uplift' and 'Final Probability' are to do with calculations which the spreadsheet does automatically. To the left, we have two columns which require input from the person doing the data analysis; these are labelled 'Time' and 'Counter'.

Column B contains data on the time of interview, which the interviewers will have recorded at the top right hand corner of each completed questionnaire (see Appendix.1).

Column A contains a counter which allows the spreadsheet to adjust its calculations according to the size of the sample. If you scroll down the worksheet, you will find that column A contains a 1 all the way down to the bottom of the data that have been input. In other words, column A contains as many 1s as there are respondents.

6.3 How to input the data

The best way to input the data is to take the completed questionnaires one at a time and input the time and the responses to Questions 1 through 5 from each questionnaire into a row of the 'data and analysis' worksheet. The data from each completed questionnaire will fit into columns B through L.

Before you start to input the data, it will be useful to arrange the completed questionnaires in chronological order. (We look at the reason for this below.) Having done this, input the data taking one row for each completed questionnaire, starting with row 10. You must start a new row for each completed questionnaire. The data must be entered in columns B through L only. In particular, leave column A blank while you are inputting the data.

Of the accompanying excel spreadsheets, Spreadsheet 1 is set up to contain data from any number of respondents up to 300. If you don't need to exceed this 300

maximum, you can just work through however many completed questionnaires you have until you get to the end. The maximum size of dataset can be increased beyond 300 as follows. The following cells near the top of the 'data and analysis' worksheet need to be modified: A5; C4:L4; N5:P5. In each of these cells there is a formula which includes a range of data cells. What you need to do is extend the range so that it is big enough for the dataset. For example, in A5 there is the range A10:A309. If you want to be able to accommodate up to, say, 500 respondents you will need to extend the range making it A10:A509. Whatever number of respondents you want to accommodate beyond 300, you need to add that number to the upper end of the range in A5, and similarly in all the other cells listed above. Once you have done this within the 'data and analysis' worksheet, the 'results' worksheet will update automatically.

As you go through the completed questionnaires inputting the data, you may find some questionnaires that are not usable. A questionnaire is not usable if there is a required answer that is missing. This can be because the interviewer has failed to fill in an answer, or because something has been written but it is indecipherable. Answers to all questions are required answers unless the questionnaire has been designed so that some questions should be skipped under certain conditions. If you come across an unusable questionnaire, pass it over without inputting any data from it. In other words, if it is unusable do not try to use it.

Once you have finished the data entry, you need to fill in column A. However you choose to do this, you need to end up with a 1 in column A wherever (and only wherever) a row contains data. In the 'data and analysis' worksheet of Spreadsheet 1, column A contains a 1 from row 10 down to row 129. We have done this because rows 10 through 129 contain data. Rows 130 onwards do not.

The easy way to complete column A is as follows. Put a 1 in row 10 of column A. Put the cursor on row 10 column A. Hit F8 and scroll down to the bottom of the data set. (Alternatively, click and drag down.) Then click on 'edit', 'fill', 'down'.

The reason for having this 'counter' column is that the spreadsheet uses it to work out the sample size, which it then goes on to use in various other calculations. You do not need to count your completed questionnaires; the spreadsheet will do it for you.

6.4 The analysis

We now take a look through the rest of the 'data and analysis' worksheet. There are two parts to this. Firstly, in columns N, O and P, rows 10 and below, there are

calculations to do with the causal probabilities. Secondly, in rows 1 through 6 columns A through P we have the results of the analysis.

To recap, we are seeking to identify the degree to which the cultural event has increased the probability of a visit to the market town coming about. We call this the uplift in the probability of a visit. This is calculated by taking the probability of a visit given the cultural event minus what the probability of a visit would have been if the cultural event had not been taking place.

The figures in column N are calculated from the input data in column I. The data in column I is drawn from responses to the second of the causal questions which in Questionnaire 1 was as follows: 'On a scale of 0 to 10, how true is it to say that if today's events had not been happening you would have come anyway?' (as shown in Appendix.1). In fact, the number on column N is simply 10 times the figure in column I. This is done so that the background probability calculated from the numbers in column N is measured on a scale of 0 to 100. This calculation tells us what the 'background probability' was i.e, what the probability of a visit would have been if the cultural event had not happened.

In column O we have the figures from which the probability uplift is calculated. Column P contains the sum of columns N and O and the figures in it are used to calculate the final probability.

The excel formulas used to calculate columns N, O and P are contained in cells N10, O10 and P10. The spreadsheet will do the calculations for you automatically, except that you must fill the formulas down the three columns to the end of the data set. This can be done by highlighting N10 to P10, dragging down to the end of the dataset and then filling down, as detailed above.

The principal results of the analysis are contained in the box enclosing rows 1 to 6 columns A to P. The results in this box are calculated automatically. Reading from left to right we have the following. In column A we have the sample size. The spreadsheet computes this by counting the number of 1s in column A.

In row 4 columns C to G we have the totals for the responses to Question 1. C4 contains the total number of positive responses in respect of component event (a). In other words, 36 respondents said that the 'meet the author' event had influenced their decision to visit. Cells D4 to G4 contain analogous totals for the other parts of Question 1. In row 6 columns C to G we have the same totals expressed as percentages of the sample size. So, in cell C6 we have the total number of respondents (120) influenced by component event (a) expressed as a percentage i.e.

30.00%, this total is derived from the figure shown in cell C4 (36). This means that 30% of the visitors interviewed said that they had been influenced by component event (a). The percentages for the other component events are in cells D6 to G6.

In row 4 columns H and I we have the average values of the responses to Question 2, i.e. the pair of causal questions. The cell H4 contains the number 8.12. This is the average of all the responses to the first causal question, i.e. "On a scale of 0 to 10, how true is it to say that because of today's events (or the part you're interested in) you were definitely going to come today?" The average response to this was 8.12 out of a possible 10. Similarly, cell I4 contains the average response to the second of the causal questions "On a scale of 0 to 10, how true is it to say that if today's events had not been happening you would have come anyway?" The average response to this was 3.26 out of a possible 10.

Continuing across row 4, in columns J, K and L we have sample means (i.e. averages) for the responses to the following questions: 3 (party size), 4 (total expenditure) and 5 (event-specific expenditure). Bear in mind that the responses to Questions 4 and 5 are in terms of expenditure per party, not per head.

Finally, in columns N, O and P (in row 5) we have the responses to the causal questions translated into terms of the background probability, probability uplift and final probability. These are computed automatically from the figures in cells H4 and I4.

6.4 Results

The second worksheet in Spreadsheet 1 contains a summary of the results. The figures in this worksheet are copied across (automatically) from the 'data and analysis' worksheet, with the sole exception of the figure for the total number of attendees. Whoever is doing the data analysis must input this figure.

You also need to input the titles in cells B3 (the name of the town), B4 (the name of the cultural event) and the names of the component events mentioned in Question 1 of the questionnaire (in cells A11 to A15).

6.5 Distribution diagrams

These are in the third worksheet. The data used here update automatically from the 'data and analysis' worksheet but the person doing the data entry will still need to do some work within the 'distribution diagrams' worksheet to produce the diagrams. If you do not require distribution diagrams, this worksheet can be ignored. If you do want the diagrams, what you need to do is as follows.

Make sure that the formulas in columns J, K and L are filled down so as to copy across all the data from the 'data and analysis' worksheet. The formulas that need to be copied into cells J, K and L on the 'distribution diagrams' worksheet appear in cells N10, O10 and P10 on the 'data and analysis' worksheet. It is also important to make sure that you do not copy across blank cells after the bottom of the data columns.

The next step in the distribution 'diagrams worksheet' is to copy the data in columns J – L into columns N – P using the 'paste special' facility and choosing 'values'. You can do this as follows: highlight the data columns (i.e. the rows of columns J – L that contain the data); click on 'copy'; move the cursor to the right into column N; click on 'edit', 'paste special', 'values'. When you have done this, the data in columns N – P will look exactly like those in columns J – L, but columns N – P will contain numerical values rather than formulas.

Now highlight the data in columns N – P and sort them using 'data' then 'sort' and choosing column N , then clicking 'decreasing order'. This sorts the data in columns N – P using column N to determine the order of each row and starting with high values in column N, ranging downwards. Before you do this, columns N – P will have contained the data on background probability, uplift and final probability for each respondent to the survey. These data will be in the order in which the data were entered into the 'data and analysis' worksheet. Once you have re-ordered the data, in the way we have just described, the data will remain the same but their order will have been changed so that those respondents who disclosed the largest background probability of visit (almost certainly a probability of 1) will come first. Those who disclosed a background probability of 0.9 will come next, then those with a background probability of 0.8 and so on. Respondents who disclosed a background probability of 0 will now be at the bottom of the columns.

The data in columns N – P will now be in the required order for drawing the distribution diagrams, which show the results for each respondent in such a way that as we range from left to right across the diagram, the background probability decreases. The distribution diagrams can now be produced as charts of the data in columns N, O and P. Column N gives the 'background probability' diagram, column P the 'uplift' diagram and column P the 'final probability' diagram. We have used column diagrams, specifying 100 as the upper limit of the vertical axis, but you can use any style of diagram you prefer. To produce the charts as we have done, you can do as follows: highlight the data in column N; click on 'insert', 'chart', 'column' and then click on the top left hand diagram in the box. Click on 'next' three times in succession, the click on 'finish'. You will now have the distribution diagram for background probability in the worksheet. You can cut this and paste it to a convenient position, and edit it as

you wish. Diagrams for uplift and final probability can be produced in an exactly analogous way using the data in columns O and P respectively.

7 ANALYSING PARTS OF THE DATASET

We now look at how to analyse parts of the data set. Often, we want to do this to make comparisons. For example, we may want to compare the results for data collected in different time intervals, or compare results for respondents who have disclosed different influences. This can be done by removing from the 'data and analysis' worksheet the rows that we do not want. For instance, if we want to see results for data collected only before a certain time, we can just delete from the data set those rows including data collected after that time. When this is done, the 'data and analysis' worksheet updates its results automatically. However, the 'distribution diagrams' worksheet will not then make sense unless it is reconstructed. The 'results' worksheet will contain hypothetical results, as we explain below.

Throughout the following examples, the person doing the data analysis MUST remember ALWAYS TO SAVE THE SPREADSHEET UNDER A NEW NAME BEFORE MAKING ANY ALTERATION OF THIS SORT.

7.1 Time intervals

The data in Spreadsheet 1 were collected during two hours, 14.00 – 16.00. Suppose that we wish to make a comparison of results found during the first hour and those obtained in the second hour. All we need to do is remove the unwanted data rows from the spreadsheet, first removing the later results and then going back to the full data set and removing the earlier results.

In the Spreadsheet 2A we have removed the later results. This was done by highlighting all those rows containing data collected after 14.59 and deleting these rows rather than just deleting their content. In this case, we highlighted and then deleted rows 63 to 129 columns A to P. The results cells at the top of 'data and analysis' now contain results based only on the sample gathered during the first hour.

If you look in the 'results' worksheet of Spreadsheet 2A, you will find that the results have automatically updated. These results are now based only on the data collected during the first hour. Note that the bottom line economic impact figure (now £119,193) has altered from that in Spreadsheet 1 (£105,065). This new figure shows what our estimated economic impact would have been if all the respondents in our sample had given us the same responses as those surveyed during the first hour.

In Spreadsheet 2B we have the other part of the dataset, isolated by deleting from the data in Spreadsheet 1 the contents of rows 10 – 62. For convenience of comparison, we reproduce (as Appendices.2, 3 and 4) the summary results from Spreadsheet 1, Spreadsheet 2A and Spreadsheet 2B.

The bottom line based on the second hour's data is a hypothetical economic impact of £94,608. This is what our assessment would have been if all the respondents in our sample had responded in the same way as those surveyed during the second hour of the sampling time interval. If this had been the case, our impact assessment would have been less that the actual figure (£105,065) and less again than the hypothetical figure based on first hour data (£119,193).

Comparing the second and third results tables, we can see why there is this difference. There are two reasons. The first is that respondents during the first hour revealed a greater probability uplift. In the first hour, the probability uplift was 65.49; in the second hour it was 59.58. Therefore, the first hour figures imply that we should be attributing a larger percentage of non-event-specific expenditure to the event than the second hour figures do. Secondly, respondents during the first hour yielded larger expenditure figures (£28.92 per party of which £16.42 was event specific) than those surveyed during the second hour (who averaged £24.33 including £14.10 event specific).

The respondents found during the first hour disclosed a stronger influence by the cultural event and they were higher spenders. In the case of a real event, such a difference might or might not meet with some explanation.

7.4 Component event influence

The method of deleting data rows can be used to isolate any particular part of the dataset that we may wish to look at results from. The following is a further example. In Spreadsheet 1, the strongest influence by far was the second-hand book market, which more than 80% of respondents disclosed as having influenced their decision to attend. Following this, 30% said they had been influenced by the 'meet the author' event and 25% by the poetry competition. Starting from Spreadsheet 1 (and not forgetting first to save it under a new name), we can analyse the results in relation to each of these influences, to see how people influenced by them compare with the sample as a whole, in terms of the strength of attraction of the cultural event and expenditure.

Suppose we want to isolate the data obtained from respondents who reported that their visit had been influenced by the poetry competition. We could achieve this by

going through the full dataset and deleting rows of data obtained from respondents who did not disclose an influence by the poetry competition. However, there is an easier way to do this. The poetry competition is the third component event: response (c) to Question 1. The data relating to this are in column E in Spreadsheet 1. Where a 1 appears in cells in column E this indicates that the respondent disclosed an influence by the poetry competition.

The first stage in isolating those respondents who disclosed such an influence is to sort the data according to column E. Start from Spreadsheet 1, and save this under a new name (we have used Spreadsheet 3A.) Highlight the whole dataset from row 10 downward and make sure you include all the columns. Click on 'data' then 'sort'. Specify column E and click on 'descending'. The results of this are in the spreadsheet 3A. This contains exactly the same data as Spreadsheet 1, but with the order of the rows changed so that all the rows with a 1 in cells in column E come at the top. (And because all the data are still there the results are identical to those in Spreadsheet 1.) The second (and final) stage is to delete those rows which do not have a 1 in cells in column E, i.e. 40 onward.

The results, in Spreadsheet 3B, show the probabilities and expenditures for respondents who disclosed an influence by the poetry competition. The summary results in the 'results' worksheet of Spreadsheet 3B indicate what the economic impact assessment would have been if all respondents had been influenced by the poetry competition. What is noticeable about the isolated results is that those who were influenced by the poetry competition were very strongly influenced by the cultural event. Their background probability of visit was only 20.33%, but the cultural event had a very strong pull expressed in an uplift of 77.97%.

7.5 Influence by combinations of factors

There may be reasons to investigate the economic impact associated with combinations of factors. For example, the second-hand book market was the dominant influence. It might be suggested, therefore, that the other component events can be discontinued. It is beyond the scope of our economic impact assessment to address such a question properly, but some salient information can be produced without much computational effort.

Return again to Spreadsheet 1 and save it under a new filename (we have used Spreadsheet 4A). Suppose that we want to assess those respondents who were influenced by either 'meet the author' or the poetry competition (or both). What we need to do first is make up a new data column (in the 'data and analysis' worksheet) that contains a 1 when a respondent disclosed that they were influenced by either the

author or the poetry events (and 0 otherwise). Once we have this, we can proceed as before, ordering the data rows and then deleting those we do not want to include.

In Spreadsheet 4A, we have inserted a new column between the answers to Question 1 and those to Question 2. This becomes column H. Into cell H10 we type the formula =sign(C10+E10). We then copy and paste the column into the bottom of the dataset. Thus column C contains a 1 whenever the respondent disclosed an influence by 'meet the author', and column E has a 1 whenever the respondent disclosed an influence by the poetry competition. If we added together columns C and E we would get a 1 when either of the influences was disclosed, a 2 when they were both disclosed and a 0 otherwise. The function sign "=sign(__)" produces a 1 whenever what appears in brackets is positive, and a 0 when the number in brackets is 0. So, the formula we have used produces in column H a 1 whenever either influence was disclosed and a 0 otherwise. The count and percentage near the top of column H were produced by copying cells G3 to G6 into H3 to H6.

Starting from Spreadsheet 4A, the results relating to respondents declaring either influence were isolated by sorting and then deleting unwanted data and the results of these stages are given in Spreadsheet 4B and Spreadsheet 4C.

8 MODIFICATIONS AND ALTERNATIVES TO THE BASIS CASE

8.1 Modifications

In Questionnaire 1 (shown in Appendix.1), Questions 2, 3, 4 and 5 are necessary (although there are alternative ways they can be asked, see below). This means that there are only two basic ways of modifying the questionnaire: we can modify Question 1 or we can add new questions.

As to Question 1, there are alternative ways of asking this question (see below) but in terms of other modifications the only possibilities are to reduce or increase the number of possible responses. Starting from the basis case in Spreadsheet 1, a reduction in the number of possible responses can be allowed for simply by deleting columns in the 'data and analysis' worksheet and then making the corresponding deletions in the 'results' worksheet. This is illustrated in Spreadsheet 5A, in which the number of component events is reduced from 4 to 3 by removing the poetry competition.

In the 'data and analysis' worksheet, column E is deleted and the headings of the new column E and new column F are altered accordingly. To fit in with this, row 13 in the 'results' worksheet will need to be deleted. In the 'data and analysis' spreadsheet row 9 will also need adjusting accordingly. Then all remaining the calculations in the 'data and analysis' and 'results' worksheets will adjust themselves automatically.

Going in the opposite direction, i.e. increasing the number of potential responses to Question 1 is illustrated in Spreadsheet 5B. First, a new column G has been inserted between columns F and (new) H. This allows for a new component event, (e) a storytelling competition. The data relating to this new component event in response to Question 1 will be entered into the new column G. In the results cells at the top of the 'data and analysis' worksheet, the content and formulas in cells F3 to F6 need to be copied into G3 to G6. The letter in the formulas for cells G4 and G6 then need to be altered to ensure they relate to the G rather than the F column. Correspondingly, in the 'results' worksheet we create a new row 15 to accommodate the results for this new component event. In the 'results' worksheet, formulas need to be inserted into D15 and E15 to copy across the appropriate results from 'data and analysis' (i.e. cells G4 and G6).

In a similar way, questions can be added to the questionnaire and accommodated in additional columns in 'data and analysis' and corresponding additional rows (if you wish) in 'results'. However, do bear in mind once again the advantages in keeping the

questionnaire short and include extra questions only if you have a compelling reason to do so.

8.2 Alternatives

Questionnaires and spreadsheets are determined by the structure of the cultural event or attraction. Spreadsheet 1 will work for any cultural event in which there are 4 component events, simply by altering the names of the sub-events.

More fundamental alterations arise if we want to ask about expenditure or causation in alternative ways. In respect of expenditure, the principal alternative is to ask in a different way about the two types of expenditure. In Questionnaire 1 (shown in Appendix.1), we ask about total expenditure (Question 4) and then about event-specific expenditure (Question 5). Alternatively, we might prefer to ask about event-specific expenditure and then about expenditure on other things in the town. Questions 4 and 5 might then be as follows:

4. How much do you think you, as a party, will end up having spent in Nottwich today, by the time you return home, on things to do with the Book Festival, such as the second hand book market? _____

5. Apart from that, how much do you think you will spend on other things in Nottwich today? _____

In 'data and analysis', this requires no change at all. The answers to Questions 4 and 5 have different meanings, and the results should be interpreted accordingly, but that is all. Where you do need to make a change is in the 'results' worksheet. There are two necessary changes here, one simple and the other extremely important. The simple alteration is to the titles in cells A28 and A29, which should be changed to read something like 'event expenditure per party' and 'non-event expenditure per party'.

The important change is required in the formula in cell D35. In Spreadsheet 1, this assumes that cells A28 and A29 contain total expenditure and event expenditure respectively. With the alternative questions, event expenditure will now be in A28 (NOT A29) and total expenditure will be given by the sum of cells A28 and A29. The formula in D35 needs to be altered to reflect this. The necessary alteration has been done to the formula in cell 'results' D35 in the Spreadsheet 5C.

For alternative ways of asking the causal questions, refer to Section 4 above. Alternatives of this sort require no alteration to the spreadsheet.

9 INTERPRETING THE RESULTS

9.1 What the results mean

We advise now that you look again at the summary results for the basis case in the 'results' worksheet of Spreadsheet 1 (shown in Appendix.2). In addition to all that we have said before, we offer the following remarks on how to interpret these results.

9.2 Sample size

There is no simple answer to the question 'how big a sample do I need?'. The correct answer to such a question depends on what results you are going to get and what you want to do with the results. Since the former part of this can never be known in advance of collecting the data, there can be no definite prescription in advance of how big a sample to collect.

Having said this, we advise as follows. Firstly, on the basis of our experience in such economic impact assessments, we recommend a sample of not less than 50 respondents. By that we do mean respondents (i.e. parties) not people. However, the more data you have the better the accuracy of your assessment will be, and the more persuasive will be the result. Secondly, in some cases it may be possible to add a further sample if the first sample is not as large as you wish. This is especially likely to be the case in respect of attractions.

9.3 Influence of component events

In large part, results of this sort speak for themselves. Their significance is likely to be in relation to whether component events be continued. On this point, where a component event is disclosed as having influenced only a small number of attendees, it may be helpful to check whether or not those influenced by the minority component event were also influenced by other components.

9.4 Causal analysis

The starting point for understanding this is the background probability of visit, i.e. the probability that the attendee would have been in the town anyway, even if the event had not been on. The probability uplift adds to this to produce the final probability. The probability uplift is the key figure: it tells us how much of the non-event expenditure to ascribe to the cultural event when we calculate the economic impact.

However, as explained in Section 3 above, the background probability limits the potential for uplift. A large background probability leaves comparatively little scope for uplift. Therefore, we can view the uplift not just in its own right but also in terms

of what percentage of the potential uplift it achieved. This is one (but only one) perspective on the success of the cultural event in terms of its economic impact. To the extent that less than 100% of the potential uplift has been achieved, there is scope for improvement in the event as a means of generating visits and expenditure. However, there is more to the matter than that, as we explain below.

9.5 Expenditure

Again, these figures are largely self explanatory. Bear in mind that the expenditure figures are per group, not per head. Bear in mind also that these are estimates from your sample, and expenditure figures per group may vary considerably from group to group. This is especially so when the event attracts a proportion of attendees staying overnight in the market town.

9.6 Impact calculation

The first computation here is to take the estimated number of attendees and divide it by the average party size. This gives us a figure for the number of parties attending.

In essence, all we then do is multiply the number of parties by the expenditure per party, to get the total amount of expenditure. However, the question is: what do we mean by expenditure per party? We do not mean just event-specific expenditure, because the event will have attracted to the town some visitors who would not otherwise have been there. The non-event-specific expenditure of such a visitor is also to be attributed to the cultural event and counted as part of its economic impact. Many visiting parties have been influenced by the event only in some degree, and their non-event-specific expenditure should be counted toward the event's economic impact to that degree. The degree in question is equal to the probability uplift (see Section 3 above.) Therefore, in making the economic impact calculation, we take expenditure per party to be event-specific expenditure plus a proportion of the non-event-specific expenditure, with the proportion being equal to the probability uplift.

9.7 The reasons for the results

Finally, we come to the issue of interpreting the results and by-products of the economic impact assessment in terms of the reasons for them. We offer below a framework for doing this which may provide some insights into the event or attraction as a way of attracting expenditure to the town.

The strength of the effect of an event or attraction on visits is given by the achieved uplift in the probability of visit. For the purposes of the impact on expenditure, this becomes the proportion of expenditure by visitors that can be ascribed to the event or attraction.

The achieved uplift can be broken down into two factors: the potential uplift and the percentage of this achieved. The potential uplift derives from the background probability of visit. Diagrammatically, this is depicted in Figure 8.1.

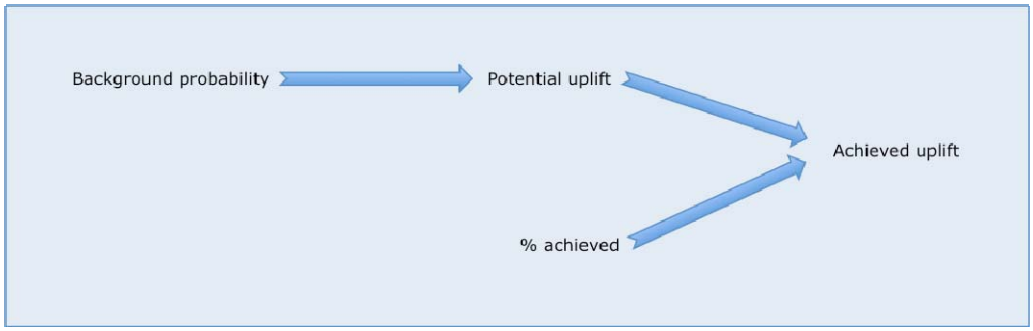

Figure 8.1 Component factors of achieved uplift

The achieved uplift depends on the background probability of visit and on the percentage of the potential uplift that was achieved. However, these in turn both depend on the nature of the cultural event in the town in question. This is illustrated in Figure 8.2.

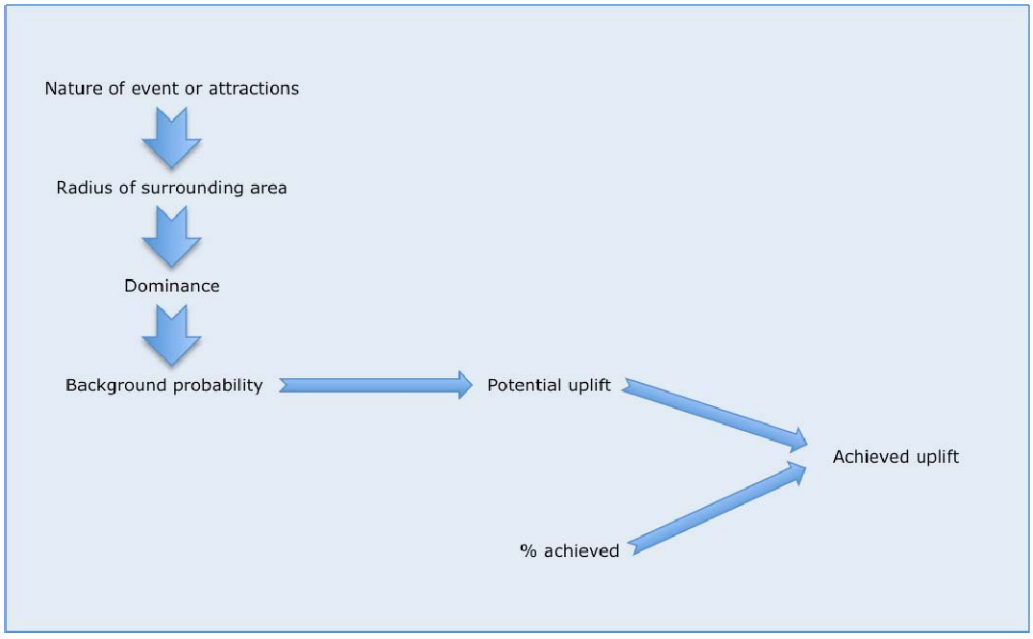

Figure 8.2: The influence of dominance on achieved uplift

The background probability of visit is determined by the 'dominance' of the town, which we may define as its propensity to attract visitors from the surrounding area. In this sense, a dominant town is one which acts like a powerful magnet, drawing in large numbers of people from the surrounding area. But what do we mean by the 'surrounding area'? Conceptually, what we have in mind is the area which contains potential visitors to the event or attraction, i.e. the area from which the uplift in

probability of visit arises. If the town is successful in attracting people from within this area there is a high background probability of visit and (therefore) only a small potential for uplift. However, this definition implies that the surrounding area is determined by the event or attraction in question. This factor combines with the town's geographical position relative to other towns to determine the surrounding area. Nevertheless, the nature of the event will also affect the percentage of the potential uplift achieved. A large percentage will be achieved only where the event is attractive to people within its surrounding area.

In terms of judging the economic impact of an event, the implications of all this are as follows. A high background probability of visit arises when many respondents say that they would have been likely to have been in the town anyway. This is the case where the town is dominant in its surrounding area. However, for the purpose of the economic impact assessment the radius of the surrounding area is determined by the nature of the event. The nature of the event also determines the strength of its attraction within the surrounding area and, hence, the percentage of the potential probability uplift it achieves.

Given all this, there are three courses of action which could potentially improve the economic impact of a cultural event:

(a) Change the nature of the event so as to increase the size of the town's 'surrounding area'. Giving the event a wider geographic appeal is helpful since a large background probability of visit often corresponds to a small surrounding area.
(b) Focus on increasing its attractiveness within its current 'surrounding area'. This is reflected in the probability uplift.
(c) Find ways to increase expenditure per party.

Strictly, these matters go beyond the making of an economic impact assessment. We address them here because some insight into them is a by-product of the economic impact assessment. However, there is more to good decision-making than partial insight and, in respect of these latter issues, we would always recommend further research.

10 APPENDICES

10.1 Appendix 1: Questionnaire 1

Interviewer _____
Time _____

Hello. Do you have a minute or two to answer a few questions about the events here today?

1. Which of the following influenced, to any extent, your decision to come to Nottwich today? INTERVIEWER: read out the following list and tick those that get an affirmative response.

___ (a) Meet the author
___ (b) The secondhand book market
___ (c) The poetry competition
___ (d) The writing masterclass
___ (e) None of these IF THIS REPLY GO TO Q.3

2. On a scale of 0 to 10, how true is it to say that because of today's events (or the part you're interested in) you were definitely going to come today?

0	1	2	3	4	5	6	7	8	9	10

On a scale of 0 to 10, how true is it to say that if today's events had not been happening you would have come anyway?

0	1	2	3	4	5	6	7	8	9	10

3. How many people are in your party? _____

4. How much do you think you, as a party, will end up having spent in Nottwich today altogether, by the time you return home? _____

5. How much of that will be on things specifically to do with today's events, such as the second hand book market? _____

END: THANK YOU very much for your cooperation, that's all I needed to ask you.

10.2 Appendix.2: Results based on full sample (Spreadsheet 1)

SUMMARY RESULTS			
Town:	Nottwich		
Event:	Book festival		
Sample size:	120		
Influence of component events			
		Count	**Percent influenced**
Meet the author		36	30.00
Second-hand book market		98	81.67
Poetry competition		30	25.00
Writing master class		2	1.67
None of these		0	0.00
Causal analysis			
Background probability		32.58	
Potential uplift		67.42	
Probability uplift		62.19	
Percent of potential achieved		92.25	
Final probability		94.77	
Expenditure			
Party size		2.10	
Total expenditure per party		26.36	
Expenditure per party at event		15.00	
Impact calculation			
Number of attendees		***10,000***	
Number of parties attending		4,762	
Economic impact		**105,065**	

10.3 Appendix.3: Results based on first hour (Spreadsheet 2A)

SUMMARY RESULTS			
Town:	Nottwich		
Event:	Book festival		
Sample size:	53		
Influence of component events			
		Count	**Percent influenced**
Meet the author		17	32.08
Second-hand book market		40	75.47
Poetry competition		23	43.40
Writing master class		1	1.89
None of these		0	0.00
Causal analysis			
Background probability		31.51	
Potential uplift		68.49	
Probability uplift		65.49	
Percent of potential achieved		95.62	
Final probability		97.00	
Expenditure			
Party size		2.06	
Total expenditure per party		28.92	
Expenditure per party at event		16.14	
Impact calculation			
Number of attendees		***10,000***	
Number of parties attending		4,862	
Economic impact		**119,193**	

10.4 Appendix.4: Results based on second hour (Spreadsheet 2B)

SUMMARY RESULTS			
Town:	Nottwich		
Event:	Book festival		
Sample size:	67		
Influence of component events			
		Count	**Percent influenced**
Meet the author		19	28.36
Second-hand book market		58	86.57
Poetry competition		7	10.45
Writing master class		1	1.49
None of these		0	0.00
Causal analysis			
Background probability		33.43	
Potential uplift		66.57	
Probability uplift		59.58	
Percent of potential achieved		89.50	
Final probability		93.01	
Expenditure			
Party size		2.13	
Total expenditure per party		24.33	
Expenditure per party at event		14.10	
Impact calculation			
Number of attendees		***10,000***	
Number of parties attending		4,685	
Economic impact		**94,608**	