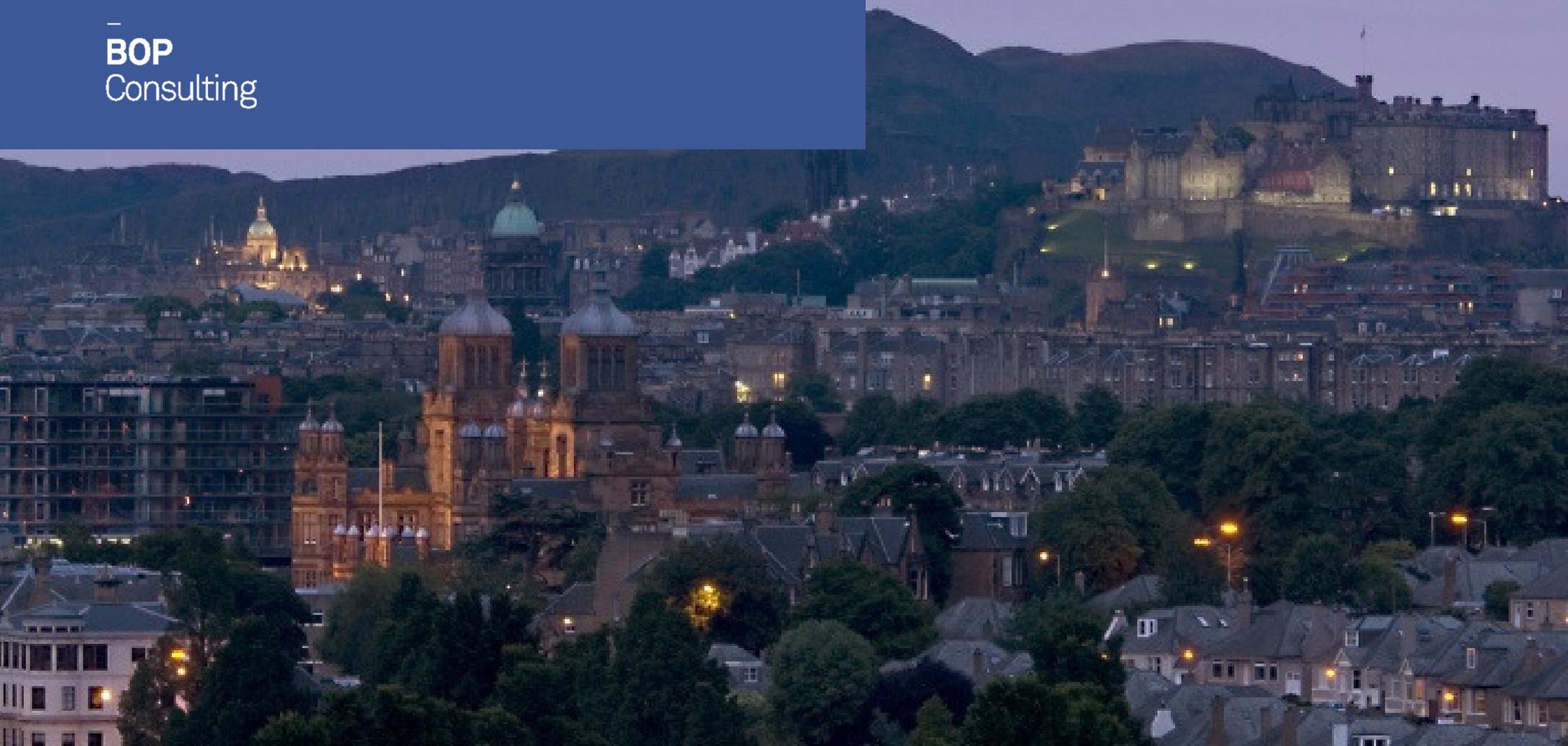

Edinburgh Festivals 2015 Impact Study

Technical Report

July 2016

BOP
Consulting



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1. Introduction

In 2010, we focused on improving some methodological aspects of the impact assessment that was undertaken by SQW in 2004. These amendments have been retained and are an integral part of the 2015 methodology. The present economic impact assessment, therefore, builds primarily on the 2010 BOP Edinburgh Festivals Economic Impact Assessment and less on the work undertaken by SQW in 2004.

The overall methodological approach applied for this study follows the same approach utilised in 2010. This consistency allows for this assessment and its results to be comparable, with the proviso that the results are presented collectively in 2015. Notwithstanding this, in the process of reviewing and reproducing the methodology we have made some minor amendments, deemed necessary to improve the quality of the study. Relevant changes are described in the following sub-chapters.

The technical report consists of four main sections:

- Visitor expenditure
- Organisation expenditure
- Multipliers
- Overall Economic Impact

2. Visitor expenditure

Defining the importance of the Festivals in the decision to visit Edinburgh and Scotland is a crucial methodological challenge. In this respect, we adopted the same method utilised in 2010, called “whole trip” approach. This assumes that the whole length of the stay of a visitor in a given area can be attributed to the specific event under analysis, in this case one of the Festivals. As opposed to

this method, the “activity day” approach postulates that attending the festival is only one of the many activities one may undertake during a trip, therefore, only the days spent at the Festival should be taken into account. As tested in 2010, the net expenditure in Edinburgh did change when using the two different methodologies but not as much as might be imagined. The most significant difference is most likely to arise for Scotland. For instance, in 2010 the whole trip approach resulted in a net expenditure 19% higher than the one that would be obtained through the ‘activity day’ approach.

Following the process used in 2010 to verify the degree to which the Festivals influence visits, we asked respondents to define how important the Festival was in their decision to visit Scotland and Edinburgh.

Figure 1 How important was the Festival in your decision to visit Scotland - Audience Survey, all Festivals.

	% 2015	% 2010
My sole reason for coming	42.9%	33.3%
A very important reason	27.7%	33.2%
A fairly important reason	12.1%	15.9%
Only a small reason	9.6%	11.4%
Of no importance at all	7.8%	6.3%

Source: BOP Consulting (2016)

As shown in Figure 1 above, the results for 2015 are in line with those for 2010. In fact, the percentage of people that spent one or more nights in Scotland who reported that the Festival was their ‘sole reason’ for visiting Scotland has increased from 33.3% in 2010 to 42.9% in 2015. This year’s evidence therefore reinforces the validity of using the whole trip approach as it is the Festivals that are most often than not the trigger for the whole trip.

2.1 Number of days

The key component of this economic impact assessment (in terms of economic contribution) is to estimate the amount of expenditure that each festival-goer makes at the Festivals. In line with the analysis developed in 2010, the total expenditure for each party was calculated by multiplying the expenditure per day by the total number of days and nights spent at the festivals.

Figure 2 displays the average number of days spent across all festivals. To facilitate the interpretation of the number of days spent at Edinburgh Festivals in 2015, we calculated the equivalent for 2010. The comparison shows that there has been a decline in the number of days, of between -1.30 days for staying visitors, to -0.77 for day trippers coming from elsewhere in Scotland. The only and very slight increase is registered for day visitors, coming from outside Scotland, who are small in number (1.3% of all visitors, see Figure 3 below)

Figure 2 Average number of days spent at Edinburgh Festivals in 2015 and 2010 (weighted average)

	Days 2015	Days 2010	Variation between 2010 and 2015 (no of days)
Local	5.5	6.7	-1.19
Day visitors (from elsewhere in Scotland)	3.0	3.8	-0.77
Day visitors (from outside Scotland)	1.9	1.5	0.35
Staying visitors (from elsewhere in Scotland)	3.5	4.8	-1.30
Staying visitors (from outside Scotland)	3.6	4.5	-0.93

Source: BOP Consulting (2016)

2.2 Visitor composition

Each visitor segment has specific consumption patterns, which, in turn, affect the magnitude of the impact that these visitors have on the local economy. The segment that tends to spend more is staying visitors, while the propensity to spend the lowest amount is registered for locals.

In the process of calculating the daily expenditure for the Festivals' audience, it is therefore essential to factor in the visitor composition as the simple mean is not an adequate statistical measure to calculate the average expenditure per person. In order to take into account the five visitor segments a weighted mean was therefore calculated, which combines the average expenditure with the proportion of visitors for each specific segment. The result is displayed in Figure 3. Although the simple average for the 2015 analysis is greater than the one for 2010, the weighted average is smaller. The likely explanation for this is the 13 percentage point increase in local visitors, the segment which has the lowest average daily expenditure.

Figure 3: Spending profiles (excl. ticket expenditure): audience survey, all Festivals

Type of visitor	Composition (%) (2015)	Composition (%) (2010)	Average daily expenditure per person (£) (2015)	Average daily expenditure per person (£) (2010)
Local	55.6	42.5	17.3	13.8
Day visitors (from elsewhere in Scotland)	14	18.9	34.2	28.1
Day visitors (from outside Scotland)	1.3	1.8	28.7	38.5
Staying visitors (from elsewhere in Scotland)	4.5	5.6	102.8	80.7
Staying visitors (from outside Scotland)	23.7	31.2	103.7	104.7
Simple average			57.3	53.2
Weighted average			44.3	49.1

Source: BOP Consulting (2016)

A key component of the visitor spend is the transport expenditure and the way it is treated. The transport expenditure takes two different forms: the initial return journey and any subsequent expenditure on transport within the city. For the purpose of this study, and as with the 2010 methodology, the two are kept separate and treated differently. Crucial in this method is that if the visitor comes from overseas or from the rest of the UK, the journey to Edinburgh is not taken into account, as it is almost impossible to parcel out the journey and attribute a specific monetary contribution to each geography.

Finally, we estimated the expenditure of those visitors to the summer Festivals who attended more than one festival over the course of their trip. In order to do so, we allocated a proportion of the expenditure to the Festival in

question, based on the proportion of events attended at all summer Festivals. For example, for the visitor survey of the Edinburgh International Festival (EIF), if a person reports that their party attended 3 EIF events and 7 events at the Fringe, then the proportion of events is 30% for the EIF. In this case, the expenditure will be multiplied by 30% (i.e. 70% of expenditure is discounted as we assume that this expenditure will be picked up through the Fringe visitor survey).

2.3 Additionality

A key component of this economic impact assessment is to establish only the expenditures made by all visitor types that would not have been made in the city anyway. These expenditures are thus only the expenditures that are genuinely additional to the local and regional economy. Clearly, the value of the additionality varies by place of origin of visitors, combined with the geography of the economy that is being estimated.

Calculating the additionality of expenditures and subsequently applying this to the gross economic impact enables us to convert it into net economic impact. Figure 4 shows the logic used in all three studies to determine whether Festival expenditures are additional or not additional.

In line with what was pointed out in the 2010 report, a very low percentage of locals add expenditure to the final net expenditure. For Edinburgh, the visitor segment whose expenditure is most frequently counted as additional is visitors from elsewhere in Scotland (70%), followed by visitors from outside Scotland (46%), although both proportions are lower than in 2010 (see Figure 8 below).

2.4 Ticket expenditure

As in the 2010 study, expenditure on ticket sales is provided by each Festival, as collected from their box office systems. For each Festival, we calculate the average expenditure per type of visitor, including the criteria to attribute expenditure to summer Festivals and the additionality factor. Following this line of reasoning, we then estimate a proportion of additional expenditure, which is essentially the ratio between the average additional expenditure and the average expenditure.

For instance, let us assume that staying visitors from outside Scotland spend on average £120 during their whole stay. After accounting for additionally, we estimate that this type of visitor has an additional expenditure of £90. This means that, on average, only 75% of their expenditure can be considered as additional. Secondly, we distribute the total ticket expenditure across visitor type using the estimated composition for each Festival (e.g. 25% of total ticket expenditure is allocated to staying visitors from outside Scotland

Figure 4 Example ticket expenditure allocation across type of visitors

Type of visitor	Composition	Av. expenditure.	Av. additional exp.	% of additional exp.	Ticket exp.	Additional ticket exp.
Locals	30%	20	5	25%	Tx30%	Tx30%x25%
Day visitors (from elsewhere in Scotland)	10%	100	60	60%	Tx10%	Tx10%x60%
Day visitors (from outside Scotland)	10%	150	75	50%	Tx10%	Tx10%x50%
Staying visitors (from elsewhere in Scotland)	25%	120	90	75%	Tx25%	Tx25%x75%
Staying visitors (from outside Scotland)	25%	180	90	50%	Tx25%	Tx25%x50%
Total	100%				T=Total Ticket Exp.	Total Add. Ticket Exp.

Source: BOP Consulting (2016)

given that they represent 25% of the total visitors). Thus, when we tally the ticket expenditure per type of visitor we find the final total ticket expenditure.

Finally, we use the proportion of additional expenditure and apply it to the ticket expenditure of each type of visitor to get the *additional* ticket expenditure.

2.5 Net expenditure

Figures 5-6 summarise the methodological approach used to estimate net expenditure for visitors that has been explained throughout the technical report. The net expenditure is then grossed up by the number of attendees to produce a final figure for net expenditure.

Figure 5 Edinburgh Net Expenditure (Summer Festivals)

Locals:

$$[(Exp_F + Exp_O) \times (Days \times Prop)] \times I_{EAL} = EN_{PL},$$

$$EN_{PL} + (T \times \%EN_{PL}) = EN_{TL}$$

Day visitors (from inside and outside Scotland):

$$[(Exp_F + Exp_O) \times (Days \times Prop)] \times I_{EAD} = EN_{PD},$$

$$EN_{PD} + (T \times \%EN_{PD}) = EN_{TD}$$

Staying visitors (from inside and outside Scotland):

$$[(Exp_A \times Nights_E) + (Exp_F + Exp_O) \times (Nights_E \times Prop)] \times I_{EAS} = EN_{PS},$$

$$EN_{PS} + (T \times \%EN_{PS}) = EN_{TS}$$

$$\text{Final Net Expenditure (Edinburgh)} = EN_{TL} + EN_{TD} + EN_{TS}$$

Where:

- Exp_F : On-site Festival expenditure
- Exp_O : Expenditure outside the Festival (incl. public transport)
- Exp_A : Accommodation expenditure
- $Days$: No. of days attended or planning to attend
- $Prop$: Proportion of expenditure attributable to a particular Festival
- I_{EAI} : Indicator of Edinburgh Additionality; where i=locals, day visitors, staying visitors
- $Nights_E$: No. of nights in Edinburgh
- $Nights_S$: No. of nights elsewhere in Scotland
- EN_{Pi} : Partial Edinburgh Net Expenditure where i=locals, day visitors, staying visitors
- EN_{Ti} : Total Edinburgh Net Expenditure; where i=locals, day visitors, staying visitors
- T_i : Ticket expenditure, i=locals, day visitors, staying visitors
- $\%EN_{Pi}$: Average Net Expenditure / Average Expenditure for (i), where i=locals, day visitors, staying visitors

Source: BOP Consulting (2016)

Figure 6 Scotland Net Expenditure (Summer Festivals)

Locals:

$\{[(Exp_F + Exp_O) \times (Days \times Prop)] \times I_{EAL} + [(Exp_O \times Nights_S \times Prop)] \times I_{SAL}\} = SN_{PL},$	$SN_{PL} + (T_L \times \%SN_L) = SN_{TL}$
--	---

Day visitors:

<p>Inside Scotland:</p> $\{[(Exp_F + Exp_O) \times (Days \times Prop)] \times I_{EAD} + [(Exp_O \times Nights_S \times Prop) + (J \times Prop)] \times I_{SADI}\} = SN_{PDI},$	$SN_{PDI} + (T_{DI} \times \%SN_{DI}) = SN_{TDI}$
<p>Outside Scotland:</p> $\{[(Exp_F + Exp_O) \times (Days \times Prop)] \times I_{EAD} + [(Exp_O \times Nights_S \times Prop)] \times I_{SADO}\} = SN_{PDO},$	$SN_{PDO} + (T_{DO} \times \%SN_{DO}) = SN_{TDO}$

Staying visitors:

<p>Inside Scotland:</p> $\{[(Exp_A \times Nights_E) + (Exp_F + Exp_O) \times (Nights_E \times Prop) \times I_{EAS}] + [(Exp_A + Exp_O) \times Nights_S \times Prop] + (J \times Prop) \times I_{SASI}\} = SN_{PSI},$	$SN_{PSI} + (T_{SI} \times \%SN_{SI}) = SN_{TSI}$
<p>Outside Scotland:</p> $\{[(Exp_A \times Nights_E) + (Exp_F + Exp_O) \times (Nights_E \times Prop) \times I_{EAS}] + [(Exp_A + Exp_O) \times Nights_S \times Prop] \times I_{SASO}\} = SN_{PSO},$	$SN_{PSO} + (T_{SO} \times \%SN_{SO}) = SN_{TSO}$

$$\mathbf{Final\ Net\ Expenditure\ (Scotland)} = SN_{TL} + SN_{TDI} + SN_{TDO} + SN_{TSI} + SN_{TSO}$$

Where:

- J= Cost of return journey
- ISAIj: Indicator of Scotland Additionality, where i=locals, day visitors, staying visitors; and j=inside Scotland, outside Scotland
- SNPij: Partial Scotland Net Expenditure, where i=locals, day visitors, staying visitors; and j=inside Scotland, outside Scotland
- SNTij: Total Scotland Net Expenditure, where i=locals, day visitors, staying visitors; and j=inside Scotland, outside Scotland
- Tij: Ticket expenditure, where i=locals, day visitors, staying visitors; and j=inside Scotland, outside Scotland
- %SNPij: Average Net Expenditure / Average expenditure for (i) and (j); where i=locals, day visitors, staying visitors, and j=inside Scotland, outside Scotland

Source: BOP Consulting (2016)

Figure 7 Treatment of additionality of visit

	Locals		Visitors from elsewhere in Scotland		Visitors from outside Scotland	
	Edinburgh	Scotland	Edinburgh	Scotland	Edinburgh	Scotland
I would have stayed at home or gone to work	Not additional	Not additional	Additional	Not additional	Additional	Additional
I would have done something else in Edinburgh	Not additional	Not additional	Not additional	Not additional	Not additional	Not additional
I would have visited another part of Scotland	Additional	Not additional	Additional	Not additional	Additional	Not additional
I would have visited an area outside Scotland	Additional	Additional	Additional	Additional	Additional	Additional

Source: BOP Consulting (2016)

Figure 8 Percentage of audiences whose expenditure is qualified as additional (all Festivals)

	Locals		Visitors from elsewhere in Scotland		Visitors from outside Scotland	
	Edinburgh	Scotland	Edinburgh	Scotland	Edinburgh	Scotland
I would have stayed at home or gone to work	Not additional	Not additional	70% (73.2% in 2010)	Not additional	46% (56.7% in 2010)	46% (56.7% in 2010)
I would have done something else in Edinburgh	Not additional	Not additional	Not additional	Not additional	Not additional	Not additional
I would have visited another part of Scotland	2.2% (1.9% in 2010)	Not additional	9% (10.3% in 2010)	Not additional	10% (7.9% in 2010)	Not additional
I would have visited an area outside Scotland	1.9% (1.1% in 2010)	1.9% (1.1% in 2010)	2.0% (1.6 % in 2010)	2.0% (1.6% in 2010)	16% (14.9% in 2010)	16% (14.9% in 2010)

Source: BOP Consulting (2016)

Figure 9 Percentage of delegates/performers whose expenditure is qualified as additional (all Festivals)

	Locals		Visitors from elsewhere in Scotland		Visitors from outside Scotland	
	Edinburgh	Scotland	Edinburgh	Scotland	Edinburgh	Scotland
I would have stayed at home or gone to work	Not additional	Not additional	68% (92.5% in 2010)	Not additional	84% (87.5% in 2010)	84% (7.5% in 2010)
I would have done something else in Edinburgh	Not additional	Not additional	Not additional	Not additional	Not additional	Not additional
I would have visited another part of Scotland	0% (0.0% in 2010)	Not additional	0% (2.5% in 2010)	Not additional	3% (1% in 2010)	Not additional
I would have visited an area outside Scotland	3.8% (6.4% in 2010)	3.8% (6.4% in 2010)	3.6% (0.0 % in 2010)	3.6% (0.0% in 2010)	10% (8.1% in 2010)	10% (8.1% in 2010)

Source: BOP Consulting (2016)

3. Organisational revenue

The organisational net revenue results from the difference between total additional income and total additional expenditure. Following the 2010 methodology, Figure 10 and Figure 11 show the criteria applied to calculate additional income and additional expenditure for both Edinburgh and Scotland. The values 1 and 0 next to each box are intended to support the reader's understanding of what is additional (1) and not additional (0).

As in 2010, the main sources of income are a) earned income, b) external funding, c) public funding and e) other sources of funding. As defined in the ticket expenditure section, income from ticketing and merchandise were not included in the calculation of earned income, to avoid double counting.

The criteria used to apply additionality to public funding is again taken from the 2010 economic impact assessment. In essence, funding from institutions that would have invested in Edinburgh anyway is considered as not additional. Conversely, funding coming from institutions that would have funded other organisations outside of Edinburgh, but within the UK, is considered as additional. The same logic is applied to Scotland. Funding derived from an organisation that would have invested in Scotland anyway is not additional to Scotland, whereas organisations that, in all likelihood, would have spent elsewhere in the UK is considered as additional to Scotland.

Finally, all funding received from trusts and foundations has been considered as additional. Their funding systems are regulated by very specific rules, which do not allow us to make common assumptions about deadweight and displacement.

Total expenditure is calculated on the basis of the sum of four main components: a) expenditure on core staff, b) expenditure on festival office costs, c) other expenditure related to staging the festival and c) total expenditure on performers, artists and speakers. The inclusion of the latter represents an

amendment to the original methodology. In the 2010 economic impact assessment this component was factored in as an element of the separate performer and delegate economic impact. Its current inclusion in the organiser's economic impact allows for a more precise assessment of the cost involved in hosting performers and delegates, without overly compromising the accuracy of the comparison.

3.1 Additional revenue

The net revenue reflects the extent to which each Festival has:

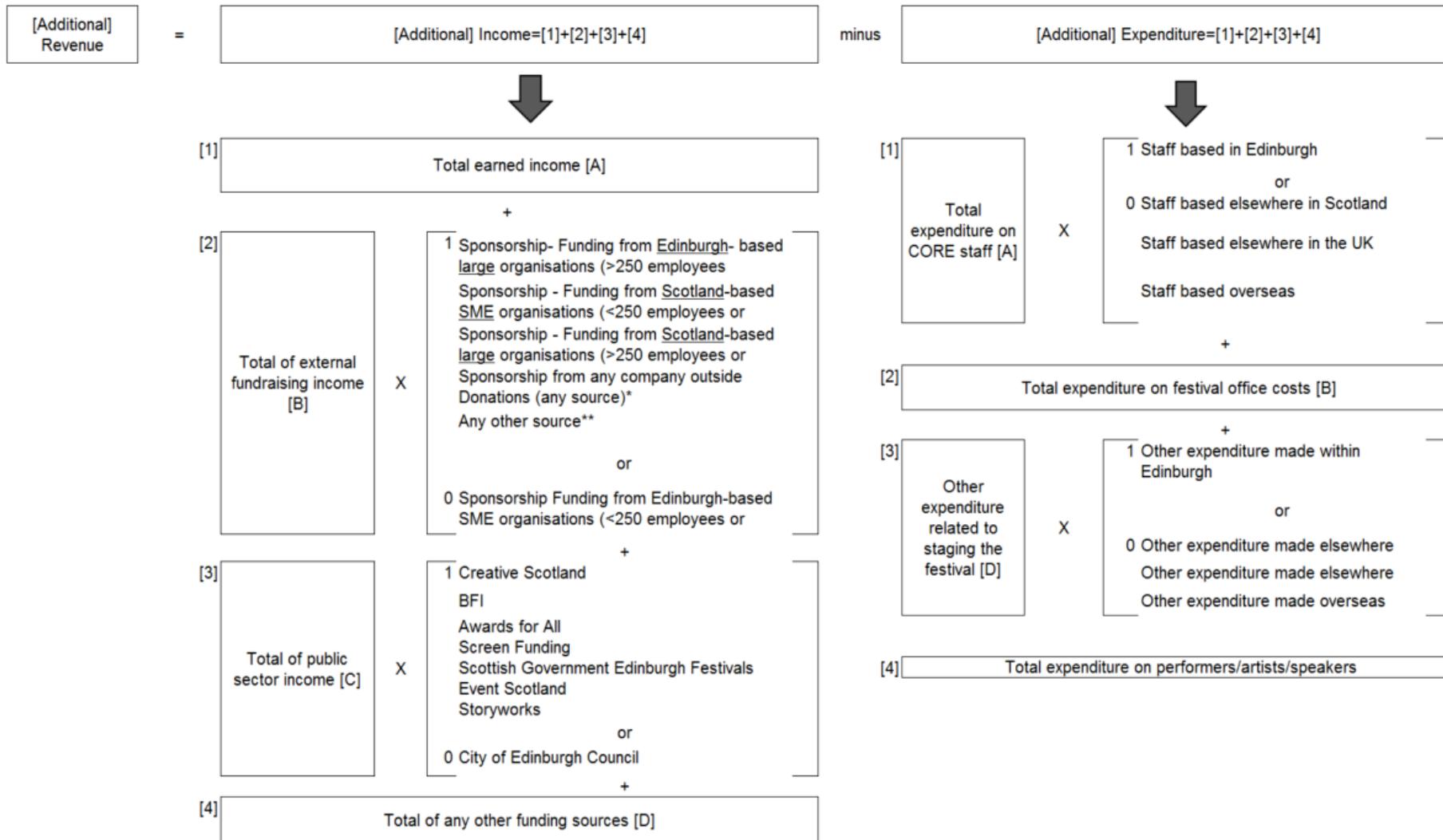
- attracted new income (i.e. funding that would not have been attracted to Edinburgh or Scotland in the absence of the Festivals), and
- spent this income in the local economy.

The final figure is counter-intuitive since, for the Festivals as a whole, the net revenue is negative. Two factors explain the negative results.

Firstly, many sources of income (public funding principally, but also philanthropy and sponsorship) have been raised locally or in Scotland and hence they are not additional to the local or national economy. Secondly, as demonstrated in 2010, tickets sales represent a very significant proportion of total income generated by the Festivals (on average over 40% in 2010). As made clear in both the Main Report and this Technical Report, ticket income is calculated as an audience impact (following the approach taken originally by SQW in 2004), and so 'moved' from the Organiser calculation to the Audience calculation.

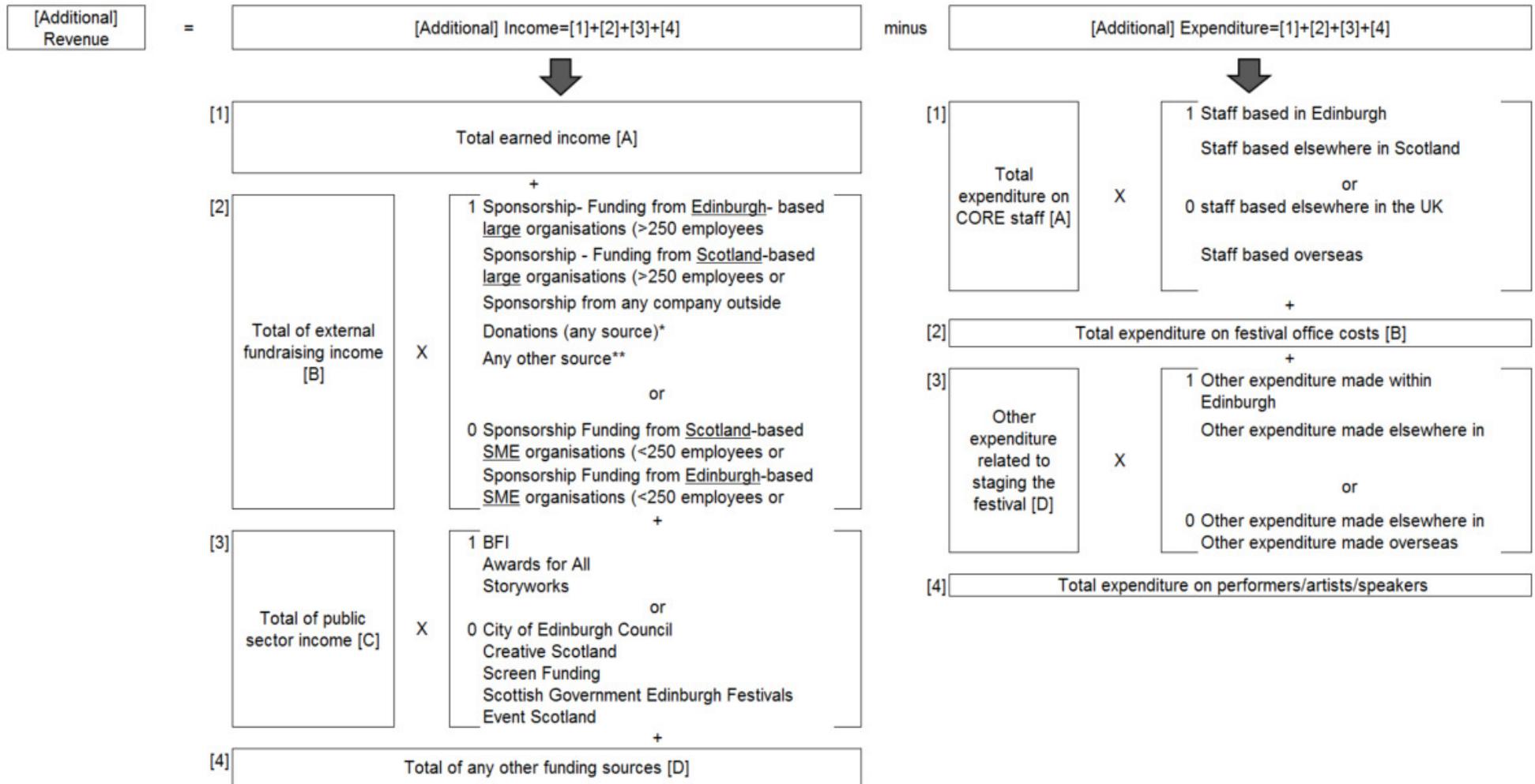
Therefore, given that ticket sales are excluded from the calculation of the organisers' net revenue, these figures should not lead to conclusions on the profitability of the Festivals. Rather these figures are should be seen solely as intermediate calculations within this economic impact of the Festivals.

Figure 10 Additionality treatment: Organisers income and expenditure (Edinburgh)



Source: BOP Consulting (2016)

Figure 11 Additionality treatment: Organisers income and expenditure (Scotland)



Source: BOP Consulting (2016)

4. Overall additionality

As outlined above in sections 2 and 3, additionality criteria have been applied to both Audience & Performer/Delegate expenditure as well as Organiser expenditure. This allows us to estimate the degree of deadweight and displacement related to the Festivals' economic impact. For Audience & Performer/Delegate expenditure, deadweight and displacement accounted for:

- 38% of the Gross Expenditure (£230.5m) reported for Audiences & Performers/Delegates in the Main Report for Edinburgh
- 46% of the Gross Expenditure (£270.8m) reported for Audiences & Performers/Delegates in the Main Report for Scotland.

As the Festivals are in receipt of some public funding that would likely have been spent on other organisations in the city/Scotland had the Festivals not existed (section 3 above), this also represents deadweight and displacement. In 2015, this accounted for £3.2m of Festival Organiser income for Edinburgh (14.9% of total income), and £9.3m when assessed at the Scotland level (43% of Organiser income).

Figures for Leakage have not been included within any of the calculations in the Main Report (i.e. they are not included within the Gross Expenditure figures that appear in Figure 8 of the Main Report). For Audiences & Performers/Delegates, leakage would relate to spending that was incurred in visiting the Edinburgh Festivals but took place outside both Edinburgh and Scotland. The one variable collected through the research on this is transport expenditure made on the journey to Scotland from those travelling from outside Scotland. This expenditure related to plane, train and car journeys is estimated at £32.5m. This is a significant sum but not surprising given the volume of tourists that attend the Summer Festivals. If this figure were to be added to the existing Gross Expenditure for Edinburgh and Scotland, then this leakage would represent 12% and 11% of the combined respective expenditure totals for Edinburgh (£263m) and Scotland (£303.3m).

Leakage for Organiser expenditure relates to Festivals' spending on staff, suppliers, artists, performers and other production costs that are located outside of either Edinburgh and Scotland. Organiser expenditure outside the relatively small local economy of Edinburgh is relatively high, totalling £14.2m in 2015, or 41% of Organiser expenditure. Leakage is predictably lower when estimating the expenditure that Festivals make outside Scotland: £8.9m in 2015, or 26% of total Organiser expenditure.

5. Multipliers

In the process of calculating the net economic impact of the Edinburgh Festivals, a crucial stage is to determine the knock-on effect that the Festivals have on the economies of Edinburgh and Scotland. As described in the 2010 Technical Report, one may identify two possible multiplier effects with an impact on the two geographies: a) a supplier effect triggered by an increase in sales that generates further purchases along the supply chain, with positive externalities on the local economy; b) an income effect that creates jobs and income for those already employed, which is partially reinvested by wage spending of employees in the local economy.

In order to estimate the magnitude of the knock-on impact caused by from the injection of spending related to the Festivals. As with the 2010 study, multipliers are obtained from the Scottish Tourism Multiplier Study (STMS) and the Scottish Input Output Tables, both standard sources for many economic impact assessments with this geographical scope. The Scottish Tourism Multiplier Study (STMS) provides supplier and income multipliers for the tourism sector. The multipliers we have used here are, where available, the specific sectoral output multipliers for Edinburgh and Scotland. The employment multipliers come from two different sources.

At Edinburgh level, the employment multiplier is obtained from the STMS which, as mentioned above, provides information at sector level (i.e. accommodation, food and drink etc.). At the Scottish level the employment multiplier is obtained from the Scottish Input Output Tables (2000), which does

not offer information disaggregated at sector level. Finally, the multipliers have been updated using the variation in the HTM GDP deflator index between 2004/5 and 2014/15 (12.6%). It is important to point out that the Festival organisers' expenditure cannot be associated to tourism-related activities and therefore needs to be treated differently. Non-tourism related multipliers have therefore been applied to the Festival organisers' expenditure.

6. Overall economic impact

Figure 11 below shows the overall economic impact of Festivals in Edinburgh and Scotland. Panel A shows the total expenditure for visitors, performers/delegates and organisers. Panel B shows how, with the application of the multipliers, the net expenditure translates into economic impact as its effects ripple through the wider economy, measured as additional Output and Employment for Edinburgh and for Scotland.

As noted in the main report, this year only the Edinburgh Festival Fringe submitted a survey to their delegates and performers, as many of the Festivals directly pay for the costs of their performers to stay in Edinburgh. In order therefore to maintain the principle of reporting the results collectively, the expenditure related to the Fringe performers and delegates has been combined with the audience expenditure.

Figure 12 Overall economic impact of the Edinburgh Festivals for Edinburgh and Scotland, 2015

	Audience-Delegates-Performers	Organisers	Total
EDINBURGH			
Panel A			
Final net expenditure	£143.0m	-£2.62m	£140.38m
Panel B			
Output	£283.79m	-£4.14m	£279.65m
Employment	5,766	- 106	5,660
SCOTLAND			
Panel A			
Final net expenditure	£147.39m	-£13.81m	£133.58m
Panel B			
Output	£338.83	-£26.17	£312.66
Employment	6,643	-622	6,021

Source: BOP Consulting (2016)

7. Jobs and Gross Value Added (GVA)

In order to keep consistency with the reporting and methodology that was originally developed by SQW in the 2004 study and repeated in 2010, the 2015 report continues to report the economic impact in terms of the additional output that the Festivals create in Edinburgh and Scotland. However, the 2015 study also reports the economic impact as Gross Value Added (GVA), in keeping with HM Treasury Green Book Standards for economic impact work.

GVA is a measure of wealth that is generated through economic activity and is defined as the value of output minus the value of the goods and services consumed as inputs by the production process. GVA is one of the three measures used to assess Gross Domestic Product (GDP). It can be calculated in a number of ways but the most common starts with business turnover and from there identifies the value added component within this. For this study, we equate additional output to the additional turnover generated across the economy by the existence and operation of the Festivals. In then converting the Output figures reported in the main report into GVA, we identified the four sectoral main components that the additional turnover consists of:

- Arts, entertainment and recreation
- Administrative and support service activities
- Accommodation & food service activities
- Wholesale and retail trade; repair of motor vehicles
- Transportation and storage

We subsequently apportioned and reallocated the turnover for Edinburgh and for Scotland to these four main components, based on their relative contribution to each. This was estimated as follows: 1) for audience we utilised the percentages identified in Figure 9 in the Main Report; 2) for organisers we calculated the proportion of expenditure for each of the four expenditure drivers

reported in Figures 9 and 10 in the Technical Report. All these proportions of expenditure have been subsequently associated to a specific SIC Code, in order to easily select the corresponding industry figures, provided by the ONS. These figures are essential to calculate GVA and FTEs and are listed below:

- Gross Value Added (Income Approach) by SIC07 industry at current basic prices, provided by the ONS
- Employment by SIC07, sourced by ONS and Department of Business, Innovation and Skills
- Turnover by SIC07, sourced by ONS and Department of Business, Innovation and Skills

These standard figures are then utilised to calculate the GVA/Turnover and the Jobs/Turnover ratios, which are the basis for estimating GVA and full time jobs.

Figure 13 GVA and full time jobs, (2010-2015)

		GVA (£m)	Full time jobs
2015	Edinburgh	149.3	5,423
	Scotland	170.2	6,271
2010	Edinburgh	131.2	4,969
	Scotland	134	5,104

Source: BOP Consulting (2016)

The total GVA that the Edinburgh Festivals generated in the Edinburgh economy in 2015 was £149.3m and the GVA generated within Scotland was £170.2m over the same period. This is equivalent to supporting 5,423 permanent full time jobs in Edinburgh and 6,271 permanent full time jobs in the Scotland.

To facilitate the interpretation of these two figures, we calculated the GVA and Full Time Equivalent for 2010. In 2010, the total GVA generated in Edinburgh was £131.2m corresponding to 4,969 full time jobs. The total GVA

generated in the Scotland economy is equal to £134m, corresponding to 5,104 full time jobs. Both figures therefore have experienced an incremental increase, in line with the comparison of the overall net economic impact of the Festivals in 2015 and 2010 as measured by Output/Turnover, presented in the Main Report.

Appendix 1 – 2015 Festival dates and descriptions

The present study started in correspondence to the Edinburgh International Science Festival in April 2015, running through until the end of Edinburgh's Hogmanay on 1st January 2016. The data analysis has been developed between January and July 2016.

EDINBURGH INTERNATIONAL SCIENCE FESTIVAL (4-19 April)

The Edinburgh International Science Festival is a celebration of all the wonders, inventions and innovations of the world of science and technology. It is the world's first science Festival and Europe's largest. Each year hundreds of scientists and technologists share their passion with the public through a programme of engaging, interactive and accessible talks, workshops, shows and exhibitions.

Family friendly events, fun activities for children and ground-breaking insights from industry experts attract curious minds of all ages and backgrounds. From the science of ghosts, chocolate and laughter to the legacy of Charles Darwin and theories of Richard Dawkins the Festival never ceases to be fun, fascinating and thought provoking.

For two weeks every Spring, the city becomes a playground with events happening in over 20 venues including the lush surrounds of the Royal Botanic Gardens, the awe inspiring grandeur of McEwan Hall and the children's favourite the City Arts Centre. This celebration of ideas, inventions and innovations is designed to illuminate the magic and mysteries of our world, giving children experiences that are inspiring and confidence building and adults a new perspective on the world around us.

IMAGINATE FESTIVAL (11-17 May)

Edinburgh's Imagine Festival has established itself as an indispensable part of the international theatre scene for children and young people. It is a rare

offering of award-winning productions from all over the world, all aiming to thrill, provoke and entertain. The Imagine Festival provides a rich performing arts programme to entertain and inspire audiences, from the very young to teenagers and beyond. The Festival has been part of a movement which has helped lift the indigenous theatre scene to world-class levels.

The Festival Director chooses a programme balanced to reflect the best and most exciting from around the world and places them alongside the very best in home grown work. It is an event which puts its audience first, but is also a meeting place for artists, producers and promoters to meet.

EDINBURGH INTERNATIONAL FILM FESTIVAL (17-28 June)

Born alongside Edinburgh's International Festival in 1947, EIFF was one of the world's first international film Festivals, and helped define the type of event that has since become so pivotal to film culture in nations all over the world.

EIFF has developed into a crucial business hub for the UK and international film industry, a key attraction for Edinburgh, and one of the world's best-loved audience Festivals. With an emphasis upon new talent, discovery, and innovation, EIFF's vibrant programme of films and events combines a commitment to audience edification and pleasure with a strong ongoing stake in the development of the Scottish, UK and International film industries.

EDINBURGH JAZZ AND BLUES FESTIVAL (17-26 July)

Edinburgh Jazz and Blues Festival takes place at the end of July. The Festival consists of over 150 concerts over a ten-day period. The programme aims to be international in outlook, spanning the earliest jazz forms to the thriving creativity of today, distinctively promoting all styles of jazz with equal interest and commitment, and championing creativity on the spot in Edinburgh during the Festival.

The Festival produces unique creative programmes and projects which can only ever be heard in Edinburgh – including the Edinburgh Jazz Festival Orchestra and Scottish/International projects and watch out for the Edinburgh Firsts programme which features musicians who make their Edinburgh debuts.

EDINBURGH ART FESTIVAL (30 July - 30 August)

An international showcase for the visual arts and the UK's largest annual celebration of visual art, Edinburgh Art Festival takes over the city every August with a 4-week programme of exhibitions, artist talks, special events and tours. Featuring internationally renowned artists alongside work by emerging talent and a special programme of new commissions, Edinburgh Art Festival sees national institutions join with artists' studios and pop-up venues to share the best the visual arts have to offer.

Founded in 2004, Edinburgh Art Festival is among the youngest of the city's Festivals. The Festival has grown to include a programme of new commissions for public spaces and non-gallery spaces in the city.

EDINBURGH FESTIVAL FRINGE (7-31 August)

Every year thousands of performers take to a multitude of stages all over Edinburgh to present shows for every taste. From big names in the world of entertainment to unknown artists looking to build their careers, the Festival caters for everyone and includes theatre, comedy, dance, physical theatre, musicals, operas, music, exhibitions and events.

The story of the world's largest arts Festival dates back to 1947, when eight theatre groups turned up uninvited to perform at the (then newly formed) Edinburgh International Festival. Not being part of the official programme of the International Festival didn't stop these performers – they just went ahead and staged their shows anyway. Year on year more and more performers followed their example and in 1959 the Festival Fringe Society was created in response to the success of this growing trend.

The Society formalised the existence of this collective of performances, provided information to artists, published the Fringe programme and created a central box office. These core services are at the heart of what the Fringe Society continues to provide for Fringe companies to this day. The Edinburgh Festival Fringe is an entirely open access Festival and the Festival Fringe Society is proud to include in its programme anyone with a story to tell and a venue willing to host them, and exists to support, advice and encourage all

those performers, before, during and after their visit to the world's greatest arts Festival.

The Festival Fringe Society doesn't run any Fringe venues, or pay fees to any Fringe artists. For the purposes of this impact study, the research has been undertaken by the Fringe Society and it is this management information that has been used.

ROYAL EDINBURGH MILITARY TATTOO (7-29 August)

The Royal Edinburgh Military Tattoo has its origins in the post-world war austerity of the mid 1940s when the City gave its Lord Provost, Sir John Falconer, the go-ahead for his vision to create a world focused Festival of music and drama. In 1949, the first formal link between Edinburgh Corporation and Scottish Command took place with two military displays, one in Princes Street Gardens and the second on the Esplanade of Edinburgh Castle. The first Edinburgh Military Tattoo took place in 1950 and since then British Military Bands and Pipes and Drums as well as military contingents and civilian acts from over 50 countries around the world have entertained the Tattoo audience. Her Majesty The Queen bestowed a Royal title on the Tattoo in January 2010.

The Tattoo's backdrop is the spectacular Castle at Edinburgh which stands majestically between the medieval Old Town and the Georgian New Town in the middle of the UNESCO World Heritage Site. The focus is always on the power of music, dance and song to transcend boundaries. Each year the Tattoo is seen by a live audience in Edinburgh of 220,000 people, a UK television audience of 6 million and by 150 million people around the world.

EDINBURGH INTERNATIONAL FESTIVAL (7-31 August)

Long ranked as one of the most important cultural celebrations in the world, the Edinburgh International Festival was established in 1947. It presents a curated programme of classical music, opera, theatre and dance of the highest international standard to an international audience for three weeks in August/early September every year. Artists and companies are invited by the Festival Director to participate, and these invitations are recognised as a prestigious and high profile opportunity for artists across the globe.

The founders of the International Festival believed that the Festival should 'provide a platform for the flowering of the human spirit'. They also recognised that, if the Festival succeeded in its artistic ambitions, it would create a major source of revenue for Edinburgh and for Scotland. This founding principle - that a world class cultural event which brings together people and artists from around the world, would also generate significant cultural, social and economic benefits for Edinburgh and Scotland - is as relevant today as it was over 60 years ago.

In turn, the city and the country also play a crucial role in the success of the Festival and its residents are among its best ambassadors. The Festival works year round with local people to further cultivate an enthusiasm for the arts and a breadth of cultural understanding through its outreach work. The Festival continues to prioritise work that would not otherwise be seen in the UK, providing unique experiences for many in its audience. It is also committed to ensuring it remains an experience anyone can access, reflected in its programme, access policies and pricing structures.

EDINBURGH INTERNATIONAL BOOK FESTIVAL (15-25 August)

Edinburgh International Book Festival aims to showcase the highest artistic and literary quality, bringing leading thinkers and writers together to inspire and be inspired; to bring international authors to Scotland, many of whom may be relatively unheard of, while simultaneously providing the single most important annual exhibition of Scottish literature, authors and publishing. The Children's and Schools' programmes aims to broaden the horizons and fire the imaginations of children and young adults. In addition, the Booked! programme takes the Book Festival on the road around Scotland, throughout the year. A celebration of words and ideas, Booked! blends the very best from groups and organisations across the country with the energy and excitement of the August Book Festival.

EDINBURGH MELA FESTIVAL (29-30 August)

The Edinburgh Mela was founded in 1995 to celebrate and profile Scotland's minority ethnic communities through "Mela" a traditional South Asian form of

Festival. It has grown significantly into Scotland's largest celebration of cultural diversity through the arts.

Edinburgh Mela is a vibrant multi-cultural annual event based at the Leith Links over a weekend as part of Edinburgh's unique summer Festival period. Mela offers a colourful and exciting mix of family entertainment and fantastic food alongside a programme of high-quality international performances. As well as hosting international artists, Mela increasingly commissions and co-produces original work. The Mela takes a lead in creating culturally diverse outdoor work in Scotland that contributes to the evolving contemporary Scottish cultural identity.

The Mela is staged on an enclosed outdoor Festival site which boasts a "Big Top" with a covered music stage programming leading names from the British Asian pop scene, DJ's, Hip Hop and Bhangra artists as well as musicians, choirs and bands from all over the world. A more intimate "Garden Stage" features an extraordinarily rich mix of traditional musicians, international artists and dance companies. In addition, the outdoor performance spaces present street theatre, circus and large-scale performances.

Edinburgh Mela is a celebration for and with diverse communities. It is also a vibrant and welcoming international event that is a platform for multi-cultural contemporary Scotland.

SCOTTISH INTERNATIONAL STORYTELLING FESTIVAL (23 October - 1 November)

The Scottish International Storytelling Festival is Scotland's annual celebration of traditional and contemporary storytelling. The Festival brings together audiences from across Scotland and beyond for entertaining and inspiring live storytelling performances. The programme features thought-provoking talks, workshops and discussions from local, national and international Storytellers sharing their experiences, tales and their culture.

The Festival is curated by the Festival Director and storytellers are selected from Scotland, the UK and around the world. Storytelling traditions are presented primarily for adult audiences alongside events aimed at families and young people.

EDINBURGH'S HOGMANAY (30 December - 1 January)

Edinburgh's Hogmanay is the biggest New Year Festival in the world.

"Hogmanay" is the traditional Scottish name for New Year's Eve where people would gather in town squares to wish each other "Happy New Year" and welcome friends and even strangers into their homes. Since 1993, Edinburgh has developed this warm, emotional evening in the middle of the cold dark winter in to a huge four-day celebration of Scottish culture and hospitality where an audience of over a quarter of a million people from all corners of the globe are welcomed and entertained in Scotland's capital city: the "Home of Hogmanay".

Edinburgh itself becomes a theatre for a three-day programme of events in the city's boulevards, squares, parks and indoor venues; many events are free to the public. On Hogmanay night itself, the city centre is closed, except for ticket holders and, transformed into an arena with several stages and giant screens, the iconic castle and the Old Town as its back drop. The Street Party plays to an audience of 80,000 ticket holders (with tens of thousands in adjacent areas and vantage points to see the fireworks) in an electric atmosphere of anticipation and euphoria, an international audience, amazed and suffused by the warmth and friendliness of the Scots. The Street Party culminates in two simultaneous, massive firework displays broadcast on television to an international audience of billions. The programme comprises contemporary and traditional music, from current to classical, from jazz to DJs and often features music from around the world. The programme also regularly features international street theatre and events range from sporting activities to spiritual, from poetry to pop.

Appendix 2 - Audience questionnaire

Impact Study 2015	AUDIENCE SURVEY QUESTIONS	RESPONSE OPTIONS					
Number of responses (n)	Cultural Questions						
	Satisfaction:						
22,895	How satisfied were you with your experience at the Festival?	<input type="checkbox"/> Very satisfied	<input type="checkbox"/> Satisfied	<input type="checkbox"/> Neither satisfied nor unsatisfied	<input type="checkbox"/> Unsatisfied	<input type="checkbox"/> Very unsatisfied	
	Quality:						
23,288	On the whole, how would you rate the quality of the Festival against other comparable events/festivals?	1 = Much better	2	3	4	5 = Far better	
	Enthusiasm:						
23,217	The Festival has made no difference to my enthusiasm for [the activity] [Not asked at Mela]	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Discovery:						
23,490	The Festival has given me the opportunity to discover new talent, styles or genres	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Would not get to see:						
23,520	My visit to the Festival has given me the chance to see artists & performances that I otherwise would not get to see	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Must see:						
23,551	I would consider the Festival a must-see event	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	International:						

23,522	The Festival showcased high-quality work from around the world	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Future Attendance:						
23,485	Attending the Festival has made me more likely to attend another similar cultural event than before my visit	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Social Questions						
	Cohesion: Brings the community together						
23,219	The [name of the festival] is an event that brings your community together	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Cohesion: Increasing quality time together as a family						
23,511	Attending the Festival [name of the festival] has given me the opportunity to spend some quality time together with family and friends	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Wellbeing: Participation improved wellbeing						
23,478	My visit today has.....made no difference to my general well-being [Positively keyed for Mela]	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Identity: Increased feeling of pride in local area						
23,467 [Locals only 5,789]	The [name of Festival] increases my pride in Edinburgh as a city	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	
	Identity: Special nature of the city						
23,588	Having the Festivals is part of what makes Edinburgh special as a city	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neither Agree nor Disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	

Economic Questions							
Residence							
Where do you currently live?	<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Elsewhere in Scotland	<input type="checkbox"/> Elsewhere in the UK	<input type="checkbox"/> Outside of the UK			
Accommodation							
Are you spending at least one night away from home as part of your trip to this event?	No - Day visit	No - Live in Edinburgh	Yes				
If staying away from home. How many nights are you staying in each of the following areas?	In Edinburgh ___ nights	Elsewhere in Scotland ___ nights	Elsewhere in the UK ___ nights				
What type of accommodation did you use?	Hotel	B&B/ Guest House	Self-catering accommodation	Camping/caravan	Visiting friends/relatives	Other	
How many people (inc. yourself) are/will be staying at this accommodation?	_____ people						
If staying away from home how much money will you personally be spending on yourself on accommodation per night? Note: exclude any expenditure made on behalf of family or friends.	£__						
Transport							
How much did your immediate party (including yourself) spend on transport costs for your initial return journey to Edinburgh/Scotland to get to the [name of Festival]	£_____per person						
Spend onsite and offsite Festival							
What is/will be/was your average daily expenditure on yourself (today) (both onsite at the event (today)and offsite in the local area)? Note: Exclude any	Tickets	£_____		Outside of the Festival			

	expenditure made on behalf of friends or family.						
		Merchandise	£ _____	Merchandise	£ _____		
		Food and drink	£ _____	Food and drink	£ _____		
				Leisure/entertainment	£ _____		
				Shopping	£ _____		
				Transport (when in Scotland)	£ _____		
		Other (please specify)	£ _____	Other (please specify)	£ _____		
	Question required for additionality purposes						
	Which one of the following best describes what you would have done if you had not made this trip to the [name of the Festival] today?	I would have stayed at home or gone to work []	I would have done something else in Edinburgh/visited Edinburgh anyway []	I would have visited another part of Scotland []	I would have visited an area outside Scotland []	Other []	
	Attendance						
	How important was [the Festival] in your decision to visit?	A. Edinburgh	[] My sole reason for coming	B. Scotland	[] My sole reason for coming		
			[] A very important reason		[] A very important reason		
			[] A fairly important reason		[] A fairly important reason		
			[] Only a small reason		[] Only a small reason		
			[] Of no importance at all		[] Of no importance at all		
	Have you been to or are you planning to attend more than one event at the [name of Festival]?	[] yes [] no	if yes, how many? ____ events				
	In total, on how many days have you attended or are you planning to attend events at any of the	____ days					

	festivals, including [name of Festival]?						
	Have you been to or do you plan to go to any other events in [year]? [No. for each Festival]	Edinburgh Jazz Festival	___ events				
		Edinburgh International Festival	___ events				
		Edinburgh Festival Fringe	___ events				
		Edinburgh International Book Festival	___ events				
		Edinburgh International Film Festival	___ events				
		Edinburgh Art Festival	___ events				
		Edinburgh Royal Military Tattoo	___ events				
		Edinburgh Mela	___ events				
		Edinburgh's Hogmanay	___ events				
		Edinburgh International Science Festival	___ events				
		Scottish International Storytelling Festival	___ events				
		Imaginate Festival	___ events				

	Group Numbers						
	How many people are in your party today (including yourself), and what age are they?	(0-4)	No. of people: _____				
		(5-9)	No. of people: _____				
		(10-11)	No. of people: _____				
		(12-14)	No. of people: _____				
		(15-17)	No. of people: _____				
		(18-19)	No. of people: _____				
		(20-24)	No. of people: _____				
		(25-34)	No. of people: _____				
		(35-44)	No. of people: _____				
		(45-54)	No. of people: _____				
		(55-64)	No. of people: _____				
		(65+)	No. of people: _____				

Photo credit: Skyline at Dusk, Marketing Edinburgh