Economic evaluation of special events: reconciling economic impact and cost benefit analysis

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Aims

• Demonstrate the importance of evaluating the contribution that special events make. (Economic contribution is only one dimension);
• Identify and discuss the main policy reasons that destination managers may wish to achieve via their support of special events;
• Overview the techniques that have been used to assess the economic impact of special events and recommend the most credible approach;
• Highlight that economic impact is not the same as economic benefit and that a Cost-Benefit Analysis (CBA) is required to assess the economic benefit;
• Present an overview of the key components of a CBA and how they should be assessed;
• Show how ‘economic impact assessments’ can give contradictory results to a CBA and that techniques are needed to integrate the two methods to give more consistent outcomes;
• Highlight the need to broaden the base of special event evaluations to demonstrate its true potential and secure a more sustainable future.
• Special events provide important recreation opportunities for local residents and, in many destinations, they form a fundamental component of the destination’s tourism development strategy.

• They are valued by residents, directly and indirectly can enhance destination image.

• Event assessments should be broad-based to identify their economic, social and environmental impacts.

• Standard approaches to the economic evaluation of special events still employ inappropriate models and unrealistic assumptions.

• Their narrow focus makes them unsuitable to inform public policy and funding decisions.
• Governments are often asked to provide financial support for special events including the allocation of large expenditure to upgrade the required facilities for holding a special event.

• There are several possible policy objectives that destination managers may wish to meet by funding special events.

• The four main objectives are listed below (Abelson 2011):

1. To maximize gross domestic product (GDP) or Gross state product (GSP)
2. To maximize the net income or consumption of households in the destination.
3. To maximize employment in the destination.
4. To maximize the net (welfare) benefits to residents of the destination.
• The first three objectives require economic impact analysis to estimate the extent to which a special event fulfils funding goals.

• All governments have an interest in funding projects that promote economic development in a particular jurisdiction, defined by increases in GDP/GSP, household income and employment creation.

• For this purpose, economic impact analysis (EIA) can be used.

• Estimating the extent of achievement of the fourth objective, however, requires a different assessment technique – cost benefit analysis (CBA).
• researchers need to explicitly identify event objectives and employ approaches that inform funding agencies about the extent to which these objectives are achieved by holding special events.

• This is the major challenge for the economic assessment of special events and an important direction in which the research agenda will develop in the future.
ECONOMIC IMPACT ANALYSIS

• To estimate the impact of a special event on each of the first three objectives requires an economic model.
• The **key input to economic impact analysis (EIA)** is the **amount of expenditure** made by visitors, accompanying persons, organizers, delegates, sponsors, media and others.
• Only that expenditure representing an injection of ‘**new money**’ into an area is relevant to the estimation of the economic impacts on GSP/GDP, valued added, household income and employment.
‘New money’ is defined as money that comes from outside the host region that would not have occurred had the event not been staged.

The net injected expenditure that occurs as a result of an event is used as the input to an economic model, allocated to different industry sectors.

The type of model employed in economic impact analysis will determine the size of the multipliers and the estimates of changes in output, value added, and employment resulting from holding the event.
• two main types of economic model can be used to estimate the economic impacts of an event:
  ➢ input-output modelling
  ➢ computable general equilibrium modelling.
CGE models include more specifications of the behaviour of consumers, producers and investors, thus permitting specific models to be calibrated to actual conditions for a particular event in a particular economy.

They are designed to capture the complex pattern of price changes, feedback effects and resource constraints which exist in all economies following a demand side shock such as that occasioned by the holding of a special event.
Results of CGE simulations of the Formula One Grand Prix held in Melbourne in 2005 (VAG 2007):

“New money’ of $58.4 million injected into the State of Victoria generated positive macroeconomic consequences,

- real GSP up by $62.4 million,
- 400 new jobs in the State (full time equivalents).

However, the grand prix crowds out activity in some industries both within the state and elsewhere in Australia.

- the event was associated with a substantial shift of resources and economic activity from the rest of Australia to Victoria, reducing GSP in other states by $60.5 million in total.

Thus, overall, the event generated a mere $1.9 million increase in GDP in Australia as a whole.

- Thus, the 2005 grand prix delivered positive outcomes on the first three objectives as identified above.
• While EIA enables destination managers to estimate the extent to which a special event meets the first three policy objectives highlighted above, it **fails to capture some significant welfare impacts.**

• To estimate these welfare effects, and thus to address the fourth policy objective, **cost benefit analysis is required**
Cost-Benefit Analysis

• The economic impacts of an event are not the same thing as its economic benefits.

• Economists know that prices do not always reflect full benefits from consumption or full costs of production.

• To enable the addition to GDP/GSP generated by a special event, inputs are needed—additional labour must be hired, additional capital must be made available, more land will be alienated and more natural resources will be used up, with attendant social and environmental effects.

• CBA is used to capture, measure, weight, and compare all expected present and future benefits of a policy, program or investment (such as a special event) with all its expected present and future costs.

• CBA is the preferred approach to event assessment as it is holistic with (in principle) inclusion of all costs and benefits (welfare effects) associated with an event.
CBA of 2005 Formula One Grand Prix, Melbourne

<table>
<thead>
<tr>
<th>Costs and benefits</th>
<th>$m</th>
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</thead>
<tbody>
<tr>
<td>Grand Prix construction and operation costs</td>
<td>68.1</td>
</tr>
<tr>
<td>Other GP-related government costs</td>
<td>0.5</td>
</tr>
<tr>
<td>Loss of park uses and amenity</td>
<td>0.4</td>
</tr>
<tr>
<td>Transport congestion</td>
<td>0.5</td>
</tr>
<tr>
<td>Noise costs</td>
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<tr>
<td>Total quantified costs</td>
<td>69.8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Event revenues paid to AGPC</td>
<td>41.5</td>
</tr>
<tr>
<td>Sponsor payments to AGPC</td>
<td>10.9</td>
</tr>
<tr>
<td>Victorian visitor consumer surpluses</td>
<td>3.4</td>
</tr>
<tr>
<td>Net profit to Victorian businesses during GP</td>
<td>3.7</td>
</tr>
<tr>
<td>Net profit to Victorian businesses after GP</td>
<td>0.3</td>
</tr>
<tr>
<td>Generated labour surpluses</td>
<td>1.7</td>
</tr>
<tr>
<td>Other consumer benefits of Victorians</td>
<td>1.9</td>
</tr>
<tr>
<td>Total quantified benefits</td>
<td>63.1</td>
</tr>
<tr>
<td>Net benefit</td>
<td>-6.7</td>
</tr>
</tbody>
</table>
• Thus:

• EIA of 2005 Grand prix shows **positive economic impacts**

• But CBA shows **net loss to society**
COSTS in CBA

- Capital expenditures on event related infrastructure
- Operating expenditures (for example, event management and staging, marketing/promotion and catering, administration).
- Other event-related costs incurred by government agencies such as road agencies, police and state emergency services.
- Social and environmental costs:
  - disruption to business and resident lifestyles
  - traffic congestion
  - road accidents,
  - crime, litter, noise, crowding, property damage
  - environmental degradation, air/water pollution, carbon footprint.
Benefits in CBA

- Payments to event organizers (ticket revenue, sponsorship and advertising revenue and media payments).

- The ticket sales and sponsor revenue received by the event organizer are a benefit to the taxpayer in that they offset the costs incurred in staging the event, and reduce the size of the Government subsidy to the event.
Benefits in CBA

- Consumer surpluses of local households derived from attending the event.
  - For many events, the price that patrons are willing to pay to attend the event exceeds what they are required to pay to attend and thus there is a net gain to the patrons from the event being available.

- Consumer surpluses of local households from attending associated offsite events/activities (Satellite events, public screenings and off-site parties). Many events have such activities associated with them which residents value as implied by their participation.

- Other benefits of local households from indirect enjoyment of the event.
  - Pride and excitement that many residents derive, over and above any direct or indirect participatory benefits, simply because their destination plays host to the special event.
Benefits in CBA

- **Business (Producer) Surplus** refers to the operating profits of local owners of visitor-related businesses (returns to locally owned capital) associated with the event.
  - the difference between the value of output and the cost of the factors of production (land, labour and capital), where their cost reflects their value in alternative uses.

- **Labour Surplus** refers to the net benefits to local labour (after compensation for working and tax) associated with the event.
  - If an event results in the creation of additional employment in the destination, labour surpluses occur when labour is employed at a wage higher than what workers would be prepared to accept to enter into employment.
  - **Follow-on benefits of future visitors** to the tourism industry (brand benefit).
  - **Legacy benefits** from construction of event assets.
Business surpluses

- These are the additions to operating profits (after-tax) accruing to local owners of businesses.
- These gains are associated with additional expenditure by visitors less the cost of resources to service this expenditure.

VAG (2007, p115) provides an equation showing how business surpluses after tax ($\pi$) may be estimated:

$$\pi = [\Delta E \times (1-IT)] \times (1 - CI) \times (1 - DT)$$

- $\Delta E$ is the net injected expenditure generated by the event
- $IT$ is indirect taxes as a percentage of turnover
- $CI$ is the cost of inputs as a function of revenue less indirect tax
- $DT$ is direct company income tax rate
- Plausibly, if $IT=0.10$, $CI=0.8$, and $DT=0.3$, the surplus after Commonwealth taxes would be 13 per cent of the change in gross pre-tax injected expenditure. A figure of 13.5% was used in the CBA of the Formula One Grand Prix (VAG 2007).
Labour Surplus

- Additional employment can be an extra source of net benefit associated with a special event.

- A labour surplus occurs when jobs go to unemployed or underemployed resident workers to meet visitors’ extra demand for goods and services, and these workers are employed at a wage higher than what they would be prepared to accept to enter into employment.

VAG (2007) offers the following formula to estimate labour surpluses (LS):

\[ LS = E \times A \times B \times C \]

where

- \( E \) = net injected expenditure generated by the event
- \( A \) = proportion of expenditure spent on labour (wages bill)
- \( B \) = percentage of \( A \) that is done by extra local labour to meet the extra demand flowing from the event (that is not diverted from other employment in the destination)
- \( C \) = percentage of wage that represents a surplus to the additional labour employed.

In VAG (2007), \( A \times B \times C \) equals 3%, i.e. 3% of new expenditure was denoted as labour surplus.
Follow-on benefits of future visitors

Projections of event induced visitation in the future are almost always based on guestimates (aka Getztimates)
Legacy Value

The ongoing legacy value (if any) of assets constructed for the event may also be estimated.

This value is a function of the demand for additional event capacity less the costs of maintaining the assets.

Consumer surveys can provide information on this.
INTANGIBLES

- Some outcomes of an event on a destination are not sufficiently well accepted or measurable to be included in a CBA.
- Examples of positive ‘intangible’ effects.
  - increased business confidence
  - increased trade and business development
  - enhancement of business management skills
  - emergent values such as increased community interest in the issues relevant to the event ‘theme’,
  - enhanced destination image.
- Examples of negative ‘intangible’ effects
  - traffic congestion, crowding, social disruption, noise, litter, crime, vandalism
  - social costs may be as much psychological as physical and resident surveys can provide valuable input into assessment
AN UNRESOLVED DILEMMA: INTEGRATING CBA AND EIA

• while conceding that the estimated economic impacts of a special event address narrower public policy objectives and provide an inadequate basis to decide on the level of public funding support (if any) that should be given, destination managers do regard economic impacts as key performance indicators of an event.

• So too do residents. As Fredline, Deery and Jago (2005) has argued, resident attitudes to events are a function of economic impacts, as surveys often show that economic impact is an important positive benefit in the minds of residents.

• Thus EIA and CBA are not independent even in the framework of a CBA.
Recently, there have been calls to combine the advantages of using EIA (CGE models) to estimate the changes in economic activity associated with an event with the estimates of ‘net benefits’ offered by CBA to inform policy making.

There are two approaches that can be used, each of which represents an important area for future research.
Approach #1

- Estimate producer and labour surpluses directly from the simulated outcomes of a CGE modelling of an event’s economic impacts.

- In essence:
  Impact of event on real GSP less costs of the factors of production (land, labour and capital)
  = Business surplus
  + Labour surplus
  = Net Economic Benefit of Event
The advantage of this approach

- the CGE modelling informs the destination manager about the direct and indirect economic impact effects of the event as well as inter-industry and taxation effects, while at the same time providing a basis for the estimation of the business and labour surpluses essential to a CBA.

- Of course, in any evaluation of an event, the effects on resident welfare should not be ignored and the relevant consumer surpluses then need to be added for the cost-benefit calculation of net benefits.

- So too will any social and environmental costs and benefits need to be estimated.
Approach #2 involves the development of measures of economic welfare by adding additional assumptions to the standard CGE model.

- Some CGE models are explicitly designed to measure changes in welfare (Dixon 2009).

- In his study of the economic impacts of the London Olympics 2012, Blake (2005) includes a measure of resident welfare.

  - Consistent with economic theory, Blake’s model measures the Equivalent Variation as a measure of economic welfare (the nominal income the consumer needs at one set of prices in order to be as well off at an alternative set of prices)

  - This transforms the economic impacts into a measure of welfare based on various assumptions about labour supply and external inputs.

- This is an emerging area for CGE, and an emerging area of research interest for the evaluation of special events.
Caveat

- The ‘net benefit’ measures based on incorporating a welfare measure into CGE simulations or estimating business and labour surpluses from the model outcomes, do not comprise the total net benefits; they form only part of a CBA since they do not meet the requirements of meeting the fourth public policy objective identified at the outset of this paper.

- Benefits to consumers and benefits to residents including effects on third parties, need to be added to the estimates of business and labour surpluses to provide a more comprehensive estimate of the net (overall) benefits of an event.

- It is also recognized that there are various other event associated costs and benefits (social and environmental effects) that are not included in these measures.

- Yet, the use of CGE modelling incorporating welfare measures of household, business and labour surpluses that comprise important components of a CBA, represents an important step in clarifying and reconciling the differences that often exist between EIA and CBA of a special event.

- This represents an important area for future research.
Conclusions

- In special event evaluation it is important to be clear about objectives.
- This should be the welfare (or net social) benefits of the relevant community, not expected economic impacts such as generated GDP/GSP, or household income.
- Event assessment, which focuses only on economic impacts is too narrow in scope to provide sufficient information to policy makers and government funding agencies.
- In contrast to EIA, which treats resident expenditure on an event simply as ‘transferred’ expenditure which is then ignored, CBA emphasizes that the residents of a destination may benefit from an event, alongside owners of capital and workers who might gain jobs.
In bringing residents’ values back into the assessment, CBA thus improves the information base for public sector decision making, thereby assisting in the assessment of relative funding priorities.

An important topic for future research should be the issue of reconciling EIA and CBA.

The recommended approaches bridge the gap between EIA and CBA in a way that has policy relevance for destination managers.

Bridging this gap calls forth a host of challenges that must be met by researchers in the future.
Thank You

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