Reconsidering the estimation of the economic impact of cultural tourism

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HIGHLIGHTS

- Estimating economic impact with minimal data.
- Ability to use cost benefit analysis with minimal data.
- Comparison of economic impact using different approaches.

ARTICLE INFO

ABSTRACT

The assessment of the economic benefits of cultural events is necessary to inform decision-making. In many cases cultural events are designed to attract tourists and the injection of tourist spending to a local economy is one of the drivers for hosting events. From an economic perspective, the impact of staging an event can be measured using either an expenditure multiplier or a cost benefit analysis (CBA) approach. One of the difficulties with CBA is the data required to estimate the relevant benefit function. This paper addresses this limitation by illustrating how benefit functions can be parameterised with minimal data, thereby enhancing the possibility of using CBA. Our approach is illustrated with a case study of an exhibition held by a regional community in Australia. The case study compares economic impact assessments and finds using benefit estimates as we propose provides a useful method of estimating benefits with limited data.

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1. Introduction

The theoretical rationale for publicly provided subsidies to the Arts is controversial, nevertheless governments fund them, albeit some would say too modestly [Abbing (1980) and Cwi (1979)]. As an example, in Australia, the state government of Victoria's 2015-16 budget provides $29.4 million for the activities, programs and services of the creative industries (State Government of Victoria, 2015). Since arts' events are also tourist attractions, cultural activities and tourism are mutually beneficial activities. The former widen the range of consumption and entertainment opportunities available to tourists, while an expanding tourism industry increases the financial viability of cultural activities and promotions by increasing patronage and therefore event revenue. In addition,

there are wider societal externalised benefits produced by the participation of tourists in the domestic cultural economy. As Wilkinson (2014) has written: "one thing is certain, less art will mean less social self-reflection and less social progress. Without art, a society thinks less deeply and less often about ethical, moral and social challenges."

An important and interesting economic problem is the assessment of the social value of expenditure commitments such as art exhibitions both to the domestic economy directly, and to cultural tourism indirectly. Economics provides a tool kit for casting considerable light on this problem. In practice, the two most common analytical techniques employed are: (i) economic impact studies based on the application of expenditure multipliers and (ii) social cost-benefit analyses (CBA). Briefly, a CBA is based on estimating the net surplus of an activity, which is defined as total social benefits (TSB) minus total social costs (TSC), while an impact study assesses the additional expenditure in the region as a consequence of tourists coming to it because of an event. It generally excludes the expenditure of domestic residents, because it is assumed their

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expenditure would have been made anyway in the region on the next best alternate activity. Abelson (2011), like many economists, concludes that CBA is the preferred theoretical method for estimating the economic impact of major events to any designated community. Nevertheless, the application of multipliers to estimate economic impact is widely accepted and illustrated. A fine example is by Teigeiro and Diaz (2014) who estimate multipliers for the activity of hotels and restaurants.

The novelty of our approach is to illustrate a methodology whereby good estimates of tourism impact measured using CBA can be obtained with minimal data by parameterising and calibrating benefit functions. In so doing, we also diagrammatically focus on the theoretical relationship between the net surplus and expenditure multiplier approaches to evaluating impact. This enables us to highlight the similarities and differences between both techniques, more sharply than we believe is usually the case.

A case study of a specific one-off event, a Grace Kelly exhibition conducted by a regional Art Gallery in Victoria, Australia, which attracted a significant number of interstate and overseas tourists, is used to empirically illustrate our reasoning and analysis. Using a CBA approach with minimal data, we estimate that this special event generated a net surplus of approximately $8.7 m to $15.2 m. All figures are in 2012 $A. An impact assessment conducted by economic consultants using the expenditure multiplier method suggested a slightly higher impact of approximately $16.31 m. Comparison of the two approaches using the case study illustrates the potential for using calibrated benefit functions to estimate economic impact rather than more expensive and data intensive application of economic multipliers.

The paper proceeds as follows. Section two outlines the theoretical frameworks and the similarities and differences between the two methodologies. Section three describes the case study and compares the estimates of economic impacts using the alternative measures. The results are discussed and conclusions summarised in section four.

2. The theory underpinning the measurement of economic impact

The economic consequences of an event can be measured as: (i) a change in real income in the region hosting the event, measured through the application of expenditure multipliers, or (ii) an increase in net surpluses estimated using a CBA. The two techniques are interrelated. Fig. 1 brings both of these together in the one diagram, in order to clarify visually, and more analytically their similarities and differences. The activity of a special art exhibition hosted by the Bendigo Art Gallery, in Bendigo, which is a city in northern Victoria, Australia is used to illustrate our discussion.

The horizontal axis measures services produced by the Bendigo Art Gallery, including special exhibitions, and the vertical axis measures all other goods and services produced in the Bendigo regional economy, including those as a consequence of the exhibition. A consumer's relative preferences or tastes for the two commodities is represented by a utility function. This shows the relationship between quantities consumed and utility or satisfaction derived from that consumption. It is assumed that the consumer is rational and consumption of a commodity is subject to diminishing marginal utility. The first assumption implies that the consumer's budget will be allocated between the two commodities such that the last dollar spent on art gallery services yields the same satisfaction as the last one spent on other goods and services, while the second ensures that income is not all allocated to only one commodity. Utility functions are represented geometrically using downward sloping convex indifference curves, such as U_1 and U_2 in Fig. 1A. Both of these show combinations of both commodities that yield the consumer the same level of satisfaction. Given the

consumer's objective of utility maximisation, every point along U_2 is preferred to U_1 since utility is higher.

In Fig. 1A, consumer equilibrium occurs at E_2 where the higher indifference curve is tangent to the consumer's budget constraint HJ. This is an equilibrium because the consumer's willingness to substitute art gallery services for other commodities reflecting relative tastes, (slope of the indifference curve), equals the rate at which the market will allow substitution to occur (slope of the budget constraint HJ, which is equal to relative prices P_{A1}/P_{01}).

The lines BL and CF are special types of regional income lines for the Bendigo economy, where regional income is equal to: $P_{01}*O_1 + P_{A1} * A_1 = I_1$. They differ from the usual income lines because they capture expenditure by non-locals or tourists only, since impact studies are solely concerned with this expenditure category. It is important to remember that local expenditure on the event is ignored, as this is assumed to be shifted from something else in the domestic economy. BL pertains to period 1, before the special exhibition, while CF pertains to period 2. In the case of CF, relative prices are fixed at the base period, i.e. $P_{01}*O_2 + P_{A1} * A_2 = I_2$. Between periods 1 and 2, the increase in real regional income is therefore equal to BC in terms of other goods and services and LF in terms of art gallery services, reckoned using a Laspeyre's quantity index where period two quantities are values at base period prices. The increase in real regional income, as a consequence of the special activity, is shown by drawing a parallel line to the initial income line BL. Economic impact studies focus on estimating the extent of the shift in BL, which is obtained by applying a multiplier value to the non-local expenditure base.

A CBA analysis approaches the issue of social value of the event through a different lens by examining the TSB and TSC. TSB is defined as consumer surplus plus total expenditure (TE). Consumer surplus is the difference between the consumer's maximum willingness to pay (WTP) for the good or service and the actual price paid. In Fig. 1A maximum WTP for art gallery services (the exhibition) is derived as follows. We identify all combinations of income and art gallery services that give the same utility to the consumer. Given that the decision maker's maximum income is equal to OH, an indifference curve U_1 is drawn that begins at H on the vertical axis. It is drawn below U_2 because the maximum WTP (KH), involves a larger outlay than GH, which is the expenditure on A_1 art gallery services. The TSB from the production and consumption of A_1 art gallery services equals HK consisting of total expenditure HG and consumer surplus GK. TSC is equal to OM worth of foregone other goods and services.[1] Therefore TSB − TSC = KM = net social benefits. (This analysis assumes a utilitarian welfare function where the utility of each consumer is treated equally.) Importantly, unlike the impact approach, TE comprises outlays on the event by both locals and tourists.

If TSB > TSC, then the Kaldor-Hicks compensation test is satisfied, i.e. the gainers are able, in theory at least, to compensate the losers and still be better off. If instead Fig. 1B was applicable, then TSC > TSB, since TSB = HK - TSC = OM = MH + OK, which is a net social cost. In this case the compensation test is not passed. Given the potential social costs (such as congestion, litter and disruption) as identified by Deery, Jago, and Fredline (2012), this scenario of TSC exceeding TSB is not unrealistic for some major events.

Our comparative framework can now be used to consider how other scholars have conceptualised the relationships portrayed in

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[1] TSC in economic terms is measured as the amount of income required to compensate the losers as a consequence of increasing the production of art gallery services. Since there are no externalised costs from the production of the special exhibition, the losers in this instance are the factors of production, primarily labour, that have to be drawn from the other uses, which are measured on the vertical axis. This necessitates a further assumption that no unemployed resources are used to produce the extra gallery output.