Uses and abuses of IMPLAN in economic impact studies of tourism events and facilities in the United States: a perspective article

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Abstract

Purpose – *An overview of the IMPLAN input/output model which is the dominant economic impact model used in the USA, focused on the ways it is abused.*

Design/methodology/approach – *Review of the literature.*

Findings – *25 ways in which IMPLAN is abused.*

Research limitations/implications – *Continued refinement of IMPLAN in the USA; potential of its extension to other contexts.*

Practical implications – *Beware it is frequently used to confirm an advocacy position of those who commission studies, rather than a search for truth.*

Social implications – *Profound potential for creating falsified outcomes to support sponsor advocacy.*

Originality/value – *Synopsis of IMPLAN literature and identification of abuses.*

Keyword *Community*

Paper type *General review*

Introduction

The conceptual rationale for economic impact studies of tourism events and facilities is illustrated in the figure. It shows that residents and visitors in a community give funds to the city council (or other public jurisdiction) in the form of taxes. The city council uses a proportion of these funds to subsidize tourism events, promotions, activities or facilities that attract out-of-town visitors who spend money in the local community. This new money from outside the community creates income and jobs for residents. This completes the virtuous cycle of economic development (Crompton, 1995).

Past perspective

The concept of new money being spent and re-spent in a community so its initial impact is multiplied is easy to grasp, but it is difficult to measure. The earliest approaches for estimating secondary impacts were input–output (I-O) models, and in the contemporary US context they remain dominant. They were originally developed in a national context (Leontief, 1936, 1937, 1941), while the earliest efforts to measure secondary impacts in tourism pioneered by Archer and Owen (1971); Archer (1975, 1977, 1982, 1984) were applied in a regional context.

Constructing I-O models was a laborious, complex, and expensive task undertaken by highly trained economists, so relatively few empirical studies in tourism emerged in the

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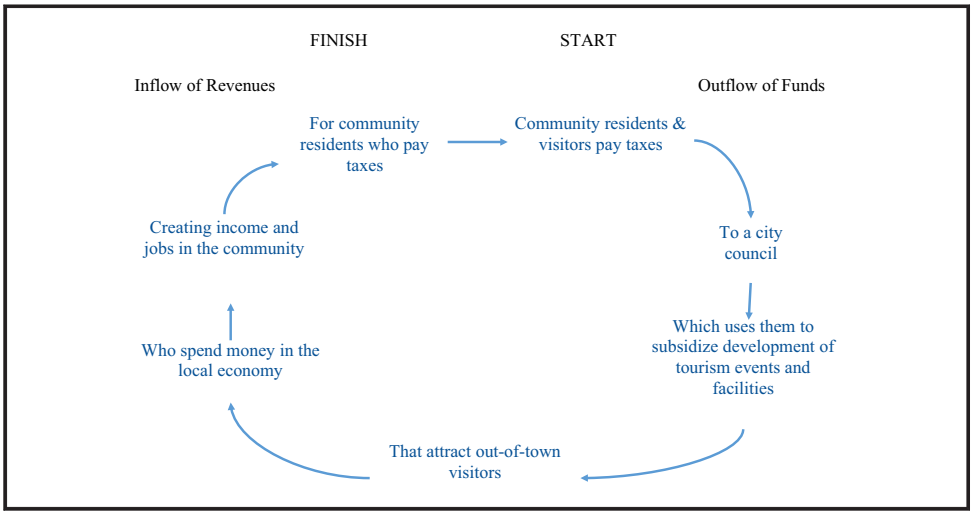
Figure 1 The conceptual rationale for undertaking economic impact studies of tourism events and facilities



1970s and 1980s. The situation changed dramatically in the United States in the 1990s with the emergence of the IMPLAN (Impact Analysis for Planning) system. This system has been consistently refined over the past 25 years. However, it is confined to the US, so tourism economic impact models in other nations have developed differently. The software performs the calculations; and the databases that provide the basic information needed to create the IMPLAN input-output models are updated annually. It enables input–output models to be defined for a section of a city at the ZIP-code level, a single city, a single county, several counties, a state, a group of states, or the entire United States. What once took economists weeks, can now be done in minutes.

A detailed critique of I-O models such as IMPLAN is offered by Dwyer *et al.* (2010). They point out that outside the US substantial progress has been made in developing computer general equilibrium (CGE) models, and that it has been demonstrated they provide more accurate estimates of secondary impacts of tourism than I-O models at national and regional levels. However, their enhanced level of accuracy at the local level appears to be much less pronounced (Mules, 1999; Loveridge, 2004), and in the US most economic impact studies are commissioned by local jurisdictions.

While CGE models often require six figure investments to develop because they are complex and require extensive amounts of data, 'off the shelf' IMPLAN models typically cost less than $1,000 and non-economists can grasp their fundamentals and produce outputs with two to four hours of training. The cost differences and the ease of accessibility to non-economists explain the dominance of IMPLAN in the USA. While it is less accurate than CGE models, the magnitude of error is generally accepted, given the numerous other potential sources of error in secondary spending analyses (Crompton *et al.* (2015b).

While it is a valuable tool if used appropriately, its low cost and ease of accessibility make it easy for unscrupulous sponsors and their consultants to produce "mischievous" analyses designed to demonstrate their positive contribution to the economic prosperity of the jurisdiction that subsidizes their programs or projects. Their intent is not to search for truth, but rather to position their project in the minds of elected officials and taxpayers as being a key element in a community's economy. Their goal is to report large visitor impacts to legitimize the sponsor's position. In some cases, the practices are the result of ignorance and are inadvertent, but too often they are deliberate and enacted with intent to mislead and distort.

As a result, much of the work of academics in the past two decades has been to highlight the multiple ways mischievous results can be obtained in order to alert decision-makers who may lack knowledge of economics. Their work has identified the following 25 sources of malfeasance:

> Failing to accurately define the impacted area; exaggerating visitation numbers; including local residents'spending; inappropriate aggregation of impacts; inclusion of 'time-switchers' and 'casuals'; ignoring costs borne by the local community; ignoring opportunity costs; ignoring displacement costs; measuring only benefits while omitting costs; claiming total instead of marginal economic benefits; expanding the project scope; inclusion of consumer surplus; confusing turnover and multiplier; using fudged multiplier coefficients; using sales instead of household income multipliers; misrepresenting employment multipliers; using incremental instead of normal multiplier coefficients;
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> [. . .] substantially exaggerating expenditure estimates by using group weighting rather than individual weighting, omitting a measure of the extent to which visiting for tourism purposes was the primary trip purpose, retaining outlier values, and aggregating different visitor segments; using convenience rather than probability samples; treating nonresponses as zero expenditures rather than as missing data; and inappropriate sector selection for assignment of expenditures (Crompton, 1995, 2006, 2010; Crompton *et al.* (2015a, 2015b).

Future perspectives

The concept of economic impact is both rich and valid. It has powerful economic implications, it is intuitively appealing, and it is real. Thus, researchers are likely to respond to the challenge of seeking more accurate measures of it. In the context of the USA, it seems likely this may take three forms. First, the development of a comparable inexpensive, easily accessible system relating to CGE as a superior alternative to IMPLAN. Second, the expansion of IMPLAN- like software to countries beyond the USA. Third, a continued refinement of its capabilities in the USA.

Conclusion

The shenanigans associated with economic impact studies raise ethical issues. The inevitable result of the misuse of economic impact methodology is a backlash against the idea that tourism has any role to play in local economic development. The credibility of this valuable tool is dependent on exposing unethical procedures and developing new, more accurate, less expensive measures.

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