Yield measures for special-interest Australian inbound tourism markets

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Different tourism stakeholders mean different things by 'yield' and this presents a barrier to communication and policy discussion. Primarily, this paper provides an overview of different concepts of yield. It also operationalizes several of these measures using inbound tourism expenditure data for Australia so that the origin markets and market segments identified as generating high yields under the various measures can be compared. The paper further identifies the manner in which the concept of yield can be broadened to embrace sustainable yield by incorporating measures of environmental and social impact. It concludes with a discussion of the policy implications of the study.

Keywords: tourism yield; economic, social, environmental impacts; sustainability; Australian inbound tourism

Until recently, much of the focus within the tourism industry has been on visitor numbers rather than yield. Although much has been said about the need to move beyond visitation numbers to more meaningful measures of yield, this has been little more than rhetoric. However, the term 'profitless volume', which has been used since the early 1990s, demonstrates a growing recognition of the fact that tourism visitor numbers are not an ideal measure of tourism performance. A key theme of the Federal Government's Tourism White Paper (2004) is that, in order to attract visitors and generate repeat visitation, Australia's tourism industry must earn a reputation for high quality, value and variety. To this end, Australian tourism stakeholders should be pro-active in developing new and innovative products and experiences with a focus on developing 'high-yield' niche markets. A focus on 'yield' is important in improving the profitability of the tourism industry and enhancing Australia's tourism competitiveness.

> 'Effective niche marketing targeted at high-yield markets will seek to ensure the industry gains optimal returns on tourism investment. By understanding the yield potential of different source markets and segments, the industry will know why and how to target them.'
>
> (White Paper 2004, p 29)

Unfortunately, the White Paper does not define the meaning of 'yield' or 'optimal returns' that reflect high yield, which makes the task of achieving these goals all that more difficult.

Yield has many dimensions; it can be viewed from the perspectives of a business, an industry, a particular niche market or a nation. Using a narrow definition of 'yield', as used by many tourism stakeholders, the concept refers to the expenditure injections of tourists (sales revenues) or the profitability of catering to different visitor markets. Yield can be defined purely from an accounting perspective where it approximates sales revenues per visitor or the financial rate of return to operators, or gross operating surplus of different industry sectors. An ongoing study of tourism yield in New Zealand equates yield with business enterprise financial position and performance, and hence attractiveness to investors (Moriarty and Simmons, 2006). Alternatively, the profitability to the tourism industry of different market segments can be assessed. However, yield can also be defined from a wider economic perspective where it is associated variously with contribution to Gross Domestic Product (GDP), contribution to Gross Value Added (GVA), or employment generated. This latter perspective appears to be the one adopted in the White Paper. Taking an even wider viewpoint, the notion of tourism 'yield' can be taken to include environmental and social value, in addition to economic value. Recognizing this, tourism researchers are now exploring the concept of 'sustainable yield' (Northcote and Macbeth, 2006).

Without a clear understanding of what is meant by tourism yield and how it should be measured there is little chance of meeting the objectives set out in the White Paper. The fact that the term 'yield' appears to have different meanings to various stakeholders (operators, governments, community and researchers) presents substantial barriers to communication and policy discussion. It is essential that this concept be defined precisely and that

approaches to the measurement of yield are outlined clearly to ensure consistency amongst stakeholders. With the increasing sophistication of tourism data sets, such as the Tourism Satellite Account (TSA), and economic models, such as computable general equilibrium (CGE) models, it is now feasible to develop new and more useful measures of tourism yield.

The primary aim of this paper is to provide an overview of approaches that have been used to define or classify yield. A secondary aim is then to operationalize several of these measures using actual data so that the origin markets and market segments identified as generating high yields under the various measures can be compared. Thirdly, the paper seeks to identify the manner in which the concept of yield can be broadened to embrace sustainable yield by incorporating measures of environmental and social impact. The final objective of the paper is to discuss and analyse the policy implications of the study.

Concepts of yield

Yield can be classified in a variety of ways. One type of classification concerns the nature of the variable being impacted upon by an increase in tourism; it could be expenditure, profit, output, employment and so forth. This is likely to be of interest to firms, industry bodies and policymakers. As the social and environmental impacts are an important dimension of yield (Dwyer and Forsyth, 1997), it is crucial that measures of yield are not restricted simply to economic and financial variables.

Yield concepts can also be classified in terms of the levels of activity that are affected. The impacts of extra tourism on a firm, on the tourism industry as a whole, or on the economy will be of interest to different stakeholders. Thus, a firm will be interested in the impact on its own profit, while a government will be interested in the impact on profits and employment in the economy as a whole. The different measures, in terms of who is affected, may be classified as:

- *Firm level measures*: impacts on firms' sales, profits, output, etc.
- *Industry level measures*: impacts on industry sales, profit, GVA, employment, output, etc.
- *Economy-wide measures*: impacts on economy-wide profit, employment, GVA, GDP, etc.

Table 1 identifies the range of yield measures and the levels at which they impact. The categories included in this table guide the discussion in the remainder of this section.

Yield as tourist expenditure

One method of estimating tourism yield as an 'economic' measure is to assess the expenditure associated with different visitor market segments either per trip or per day. Expenditure, whether for total trip or per visitor night, is the standard measure of tourism yield (Dwyer and Forsyth, 1997; Becken and Butcher, 2005). Both operators and destination managers have emphasized this

Table 1. Measures of yield and level at which they operate.

Type/level	Industry level yield	Economy-wide yield
Expenditure yield	Firm or industry revenue from sales	Tourism expenditure

Financial yield:
  (a) rate of profit;
  (b) rate of return on capital
	Industry profitability	National GOS

Economic yield:
  (a) contribution to GDP;
  (b) contribution to value added;
  (c) contribution to employment;
  (d) contribution to net benefits
	Industry value added,
	  contribution to GDP or
	  employment
		GDP or employment

Sustainable yield	TBL reporting	Sustainable development

measure (Dwyer and Forsyth, 2006). Preferred markets are those associated with high expenditure per day, together with a long duration of stay.

Despite their common use, expenditure measures have limited relevance for policymaking to enhance tourism yield. Gross expenditure data do not in themselves provide information on the types of goods and services that tourists purchase and so there is no indication of the industry sectors that receive the sales revenues. Gross tourist expenditure includes the import content of the goods and services purchased by tourists. Since these imports must be paid for by the suppliers of tourism products, expenditure levels in themselves do not indicate the sales revenues to domestically-based firms' net of imports. With its focus on sales *revenues*, the approach neglects the aggregate costs of providing the services to each segment. The expenditure measure of yield takes no account of this, either at the business operator level or at the destination level. Gross expenditure *per se* does not provide information on the relative spread of expenditure in the wider destination. Further, gross expenditure measures do not tell how the expenditure will impact (sometimes adversely) on other industries and what its net impacts on the economy are.

Financial yield

Yield can be regarded as the 'rate of profit on tourism sales' or 'rate of return on capital'. Salma and Heaney (2004) regard financial yield measures as both 'operational and practical'. A major advantage of financial measures of yield over expenditure approaches is that the GOS (Gross Operating Surplus) measure used in the estimates is net of the cost of goods and services sold to tourists. Tourism Research Australia (TRA) claims that this method of estimating yield is an improvement on alternative measures because its profit focus (GOS) takes both revenues and costs into account. TRA claim that, from an industry point of view, the definition of yield is more closely related to the 'actual' rate of return earned in the industry (Collins *et al*, 2004).

Economic impact measures

Another set of yield measures relates to the economic impacts of tourist expenditure. The expenditure of tourists stimulates economic activity and

creates additional business turnover, employment, household income and government revenue in the host destination. The initial injection of money has *direct*, *production induced* and *consumption induced* impacts on the local economy (the 'multiplier effect'). Impact measures are essential to the destination manager concerned with the economy-wide effects of tourist expenditure. The size of the economic impacts will depend on the type of model employed and the specific assumptions that underpin the projections (Dwyer *et al*, 2004).

Sustainable yield

On a wider perspective, the notion of 'yield' includes environmental and social value in addition to economic value (Northcote and Macbeth, 2006). Each tourism market segment is potentially associated with economic, social and environmental costs as a result of the mix of services used during their stay. These costs, or footprints, vary across market segments depending on the mix of services used by the tourist. The notion of sustainable yield can apply at the operator level (Dwyer, 2005), as well as at the destination level (Northcote and Macbeth, 2006).

Measuring tourism yield

A number of the measures of yield identified above were calculated using actual data, in particular, the International Visitor Survey (IVS) data purchased from Tourism Research Australia (Tourism Australia, 2004). The IVS is an exit survey of international tourists leaving Australia, administered by personal interview in the departure lounges of airports. The survey is conducted year round, with an annual sample size of 25,000 up to 2005, which was increased to 40,000 in 2006. The instrument is comprehensive and collects detailed information on activities, regional visitation, expenditure and satisfaction. This analysis produced ranking of market segments based on the calculation of yield according to the different measures, which enabled comparison to be made of the high-yield markets according to these measures.

Expenditure measures of yield

The comprehensive data used for this analysis contain estimates of visitor numbers, expenditure per visit, expenditure per night and expenditure patterns for visitors to Australia on package tours, not on package tours and in total. The data were for the years 2001/02, 2002/03 and 2003/04, taken separately and also averaged over the three-year period. The data apply to 14 countries and three regions, and to 11 special-interest and demographic markets. Only the latter data are reported in this paper. The expenditure data used to estimate economic impacts of different visitors include international and domestic airfares purchased within Australia on Australian-owned airlines, but do not include any other imputation for the international airfare component that goes to Australian-owned airlines or to foreign-owned airlines but spent in Australia.

Since the levels of injected expenditure depend on total numbers of tourists by origin, their daily expenditure and their length of stay, it is informative to consider expenditure per night in association with duration of stay. This
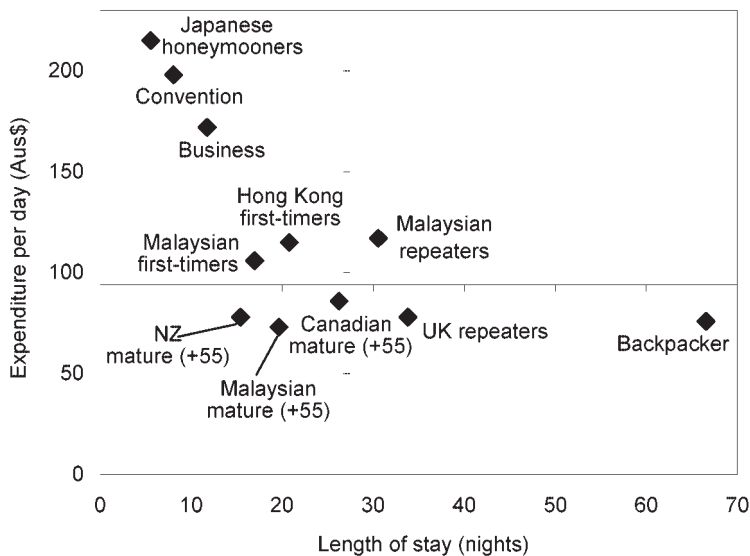
Figure 1. Matrix for expenditure and length of stay, selected niche markets, average 2001/02–2003/04.

information is displayed in matrix form in Figure 1 for 11 niche markets (or market segments) that can be derived from the IVS data. These segments have been identified as important niche markets in Australian inbound tourism (Collins *et al*, 2004).

Figure 1 indicates that only one market, namely, Malaysian repeaters, lies in the high performance north-east quadrant. This is the only market of those selected that has above-average (Aus$94) expenditure per day and above-average (27.4 nights) duration of stay. Five markets (conventions, business, Japanese honeymooners, Hong Kong first-timers and Malaysian first-timers) are in the north-west quadrant, which represents those having above-average daily expenditure but below-average length of stay.

Economic impact yield measures

There are two main methods of estimating the economic impact measures of tourism yield. One method is to employ a TSA, enabling Gross Domestic (or Regional) Product (GDP), Gross Value Added (GVA), Gross Operating Surplus (GOS) and employment measures of yield to be developed (Collins *et al*, 2004). However, such measures of yield do not tell us what impact tourist spending has on the economy as a whole. The impacts on the tourism industry GDP, value added, GOS and employment will typically be very different from the overall impact on the economy, because there will be impacts on other industries that need to be factored in.

A second method is to employ an economic model to estimate the economy-wide economic yield of tourist visitation. The authors have used a CGE model called M2RNSW to develop measures of economy-wide yield. M2RNSW is an adaptation of the standard Monash Multi-Regional Forecasting (MMRF) model

Table 2. Economy-wide economic impacts of selected niche market expenditure (annual average period 2001/02–2003/04).

Niche	Spend per night Aus$	Length of stay (nights)	Number of jobs/ Aus$ million spend	Real GVA/ visitor night (Aus$)	Real GOS/ visitor night (Aus$)	Real net benefit/ visitor night (Aus$)
Backpackers	76	66.53	6.08	10.09	5.86	6.66
Business	172	11.78	7.32	22.17	14.56	16.29
Canadian mature (+55)	86	26.25	6.35	11.13	7.48	8.38
Convention	198	8.07	6.99	24.18	13.47	15.77
Hong Kong first-timers	115	20.79	5.71	14.33	6.13	8.11
Japanese honeymooners	215	5.58	4.56	27.76	17.46	22.23
Malaysian first-timers	106	17.00	6.12	13.50	5.52	7.51
Malaysian mature (+55)	73	19.67	5.65	9.56	5.69	6.84
Malaysian repeaters	117	30.56	6.00	14.81	5.63	8.12
NZ mature (+55)	78	15.43	6.45	10.19	6.83	7.77
UK repeaters	78	33.81	6.19	10.16	6.79	7.64
Average (all inbound markets)	94	27.42	6.13	12.13	6.71	8.09

Source: Expenditure estimates based on Tourism Australia (2004). Economic impacts based on author's simulations.

(Dwyer *et al*, 2005). CGE models provide more accurate measures of the economy-wide impact on economic variables from additional tourism than do input–output models (Dwyer *et al*, 2004).

No single economic measure of yield will cover all the potential economic impacts of tourist expenditure. Four impact measures of yield are indicated in Table 2: yield as contribution to employment; yield as contribution to GVA; yield as contribution to GOS; and yield as contribution to net benefit.

Employment. Employment yield can be estimated in terms of the employment generated in the economy as a whole per visitor day (for example, FTE per thousand visitor days) or, more typically, by employment per Aus$ million of tourist consumption. The measure of yield as employment is informative of industry performance. In particular, destination managers can use this in allocating resources to generate employment in the economy. At the level of the business operator, however, the measure is of little or no interest. Indeed, it seems fair to say that business operators do not seek to generate employment since wages are an expense of operations.

In terms of jobs created or maintained per Aus$ million expenditure, the niche markets above the average (6.13 jobs) were: business, convention visitors and the mature market from New Zealand, while below-average job creation per Aus$ million was associated with Japanese honeymooners, Malaysian matures, Hong Kong first-timers and Malaysian repeaters.

Real value added. GVA is the value of output at basic prices minus the value of intermediate consumption at purchasers' prices. Tourism GVA measures the
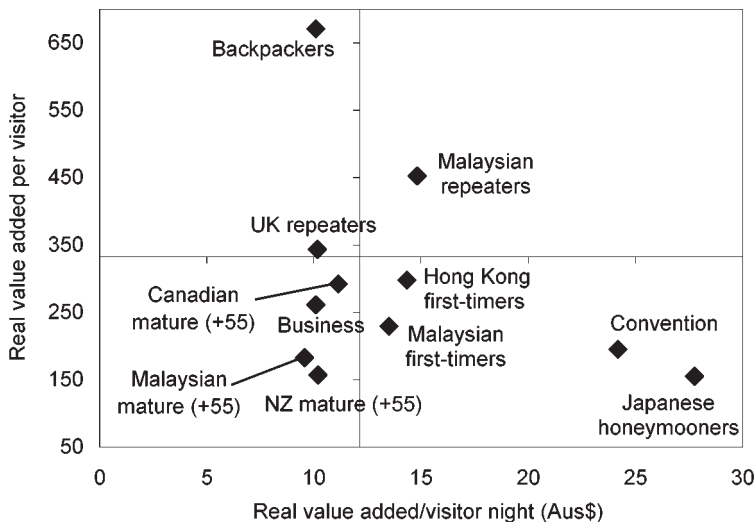
Figure 2. Real value added per visitor trip and per visitor night by niche market.

value of tourism gross output at basic prices by all industries that supply tourism products less the value of the inputs used in producing these tourism products, and exclusive of product taxes such as the GST. It is the preferred national accounts measure of the production of industries because it is free from distortions in prices caused by changes in tax rates or the introduction of new taxes over time.

Economy-wide real value added as a proportion of tourist expenditure for each country of origin is displayed diagrammatically in Figure 2. It can be seen that only the repeat market from Malaysia appears in the north-east quadrant, representing above-average value added per visitor (over total trip) and above-average value added per visitor night.

Gross operating surplus. GOS is a measure of the surplus accruing to owners from processes of production before deducting any explicit or implicit interest charges, rents or other property incomes payable on the financial assets, land or other tangible non-produced assets required to carry on the production, and before deducting consumption of fixed capital.

The relationship between real GOS per visitor and per visitor night for major inbound markets is displayed diagrammatically in Figure 3. Three markets, namely, UK repeaters, Canadian matures and business travellers, are plotted in the north-east quadrant, representing above-average GOS per visitor (over total trip) and above-average GOS per visitor night.

Net benefits. To obtain measures of benefits or welfare gain, it is necessary to deduct the costs of the additional inputs used to generate this output (Forsyth and Dwyer, 1993). The result is a measure of the net gain to the community, leaving aside externalities. While this measure is narrower than a 'sustainable benefit' measure that includes externalities, since it only estimates how much
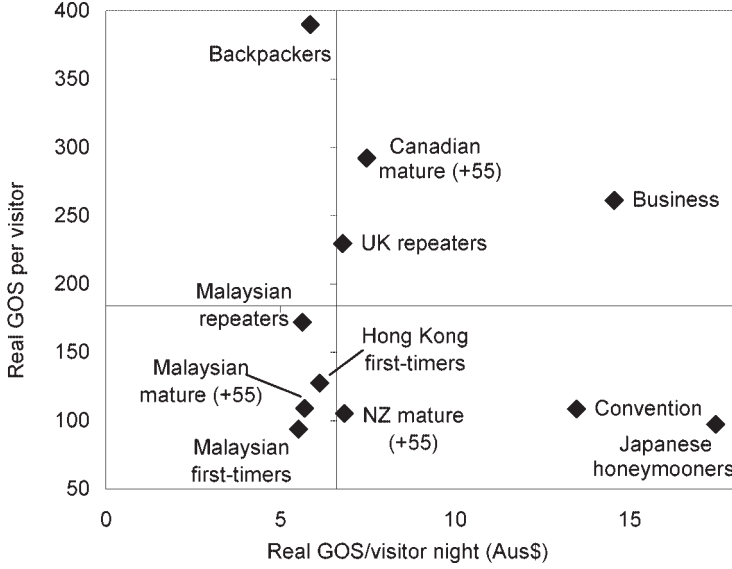
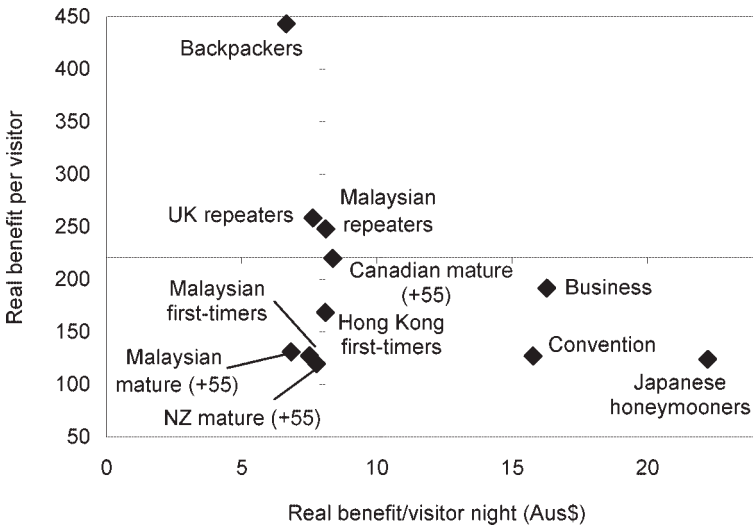**Figure 3.** GOS per visitor trip and per visitor night by niche market.

Figure 4. Real benefits per visitor and per visitor night by origin market.

better off people are in *economic* terms as a result of tourism activity, it is a better indicator of yield for policymaking than the traditional expenditure type measures and the other impact measures.

The relationship between economy-wide real benefit per trip and per visitor night for the selected niche markets is displayed diagrammatically in Figure 4. The north-east quadrant, representing above-average net benefits per visitor (over total trip) and above-average net benefits per visitor night, contains only the Malaysian repeater market niche.

Table 3. Rankings of niche markets, selected yield measures.

	Expenditure per visitor day	Real GVA per visitor day	GOS per visitor day	Net benefits per visitor day	Employment per Aus$1 million
High-yield markets (above average)	1 Japanese honeymooners	1 Japanese honeymooners	1 Japanese honeymooners	1 Japanese honeymooners	1 Business
	2 Convention	2 Convention	2 business	2 Business	2 Convention
	3 Business	3 Business	3 Convention	3 Convention	3 NZ +55
	4 Mal repeater	4 Mal repeaters	4 Can +55	4 Can +55	4 Can +55
	5 HK first-timer	5 HK first-timer	5 NZ +55	5 Mal repeater	5 UK repeater
	6 Mal first-timer	6 Mal first-timer	6 UK repeater	6 HK first-timer	
Low-yield markets (below average)	7 Can +55	7 Can +55	7 HK first-timer	7 NZ +55	6 Mal first-timer
	8 NZ +55	8 NZ +55	8 Backpackers	8 UK repeaters	7 Backpacker
	9 UK repeater	9 UK repeater	9 Mal +55	9 Mal first-timers	8 Mal repeater
	10 Backpacker	10 Backpackers	10 Mal repeater	10 Mal +55	9 HK first-timer
	11 Mal +55	11 Mal +55	11 Malaysian first-timer	11 Backpackers	10 Mal +55
					11 Japanese honeymooners

Consistency of yield rankings

Since yield measures have consequences for decision making by both private and public sector organizations, the rankings of the selected origin markets on the different measures were compared. Table 3 provides a summary of the yield estimates for the selected niche markets taken from the figures discussed above.

Table 3 indicates that the different measures of yield do not provide generally consistent rankings for the origin markets. High expenditure per visitor day markets – Japanese honeymooners, convention and business visitors – generate high GVA, GOS and real benefits per day. Only two niche markets – conventions and business – have above-average yield performance on all of the measures. Japanese honeymooners have the highest yield on four measures, but generate the lowest employment per dollar of expenditure. Three other high-spend markets – Malaysian repeaters, Hong Kong first-timers and Malaysian first-timers – generate below-average employment per expenditure dollar. On the other hand, two relatively low-spend markets – Canadian and New Zealand matures – generate above-average GOS and real benefits per visitor night, and also above-average employment.

From the operator viewpoint, markets such as Canadian and Malaysian matures, which offer above-average daily GOS, will be preferred over other markets, such as Malaysian and Hong Kong first-timers, which provide above-average spend and above-average GVA to the wider economy.

Incorporating environmental impacts into a measure of tourism yield

Although the development of indicators of sustainable tourism at the destination level is progressing (Moore *et al*, 2003), we know of no previous attempts to develop measures of environmental yield for different tourist market segments. And yet, different types of tourists tend to undertake different patterns of activities and thus generate different types and levels of impact.

Using the same special niche markets as above, the authors have developed first measures of environmental yield per visit, per visitor night and per dollar spent (Dwyer *et al*, 2005; Lundie *et al*, 2007). The direct (on-site) requirements of different tourists are assessed, while all remaining higher order requirements (for materials extraction, manufacturing and services) are covered by input–output analysis (Lenzen, 2002). The approach involves quantifying the environmental impacts for four indicators each important to Australia, such as primary energy (GJ), greenhouse gas emissions (kg CO_2-equivalents), water usage (kL) and ecological footprint (ha), based on the type of accommodation associated with different tourist markets and the environmental effects of the types of goods and services purchased by the tourists.

Table 4 indicates that each visitor day, on average, requires roughly 1.1 GJ of primary energy, 9.8 kL of water, causes 213 kg of CO_2-eq emissions and results in an ecological footprint of 73 ha/night. However, there are significant differences between the various types of tourist. Japanese honeymooners, convention visitors and business travellers clearly cause higher environmental

Table 4. Environmental indicator results per visitor day.

Environmental indicators	Unit	Japanese honey-mooners	Convention	Business	Mal +55	NZ +55	Mal first-timers	HK first-timers	Can +55	UK repeaters	BP	Mal repeaters	Average
Per visitor day													
Energy	GJ/day	2.2	1.9	1.7	0.7	0.8	0.9	0.9	0.9	0.7	0.7	0.8	1.1
Water use	kL/day	18	16	15	7	8	7	8	9	7	7	7	9.8
Greenhouse gas emissions	$kgCO_2$/day	448	346	314	148	160	163	173	182	141	143	161	213
Ecological footprint	ha/day	213	113	100	48	52	49	54	57	44	44	48	73

Source: Author estimates.

impacts per visitor day compared to other types of tourists, due to higher expenditure. However, Japanese honeymooners have a noticeably higher primary energy demand, greenhouse gas emissions and ecological footprint compared to convention visitors and business travellers.

The measures that have been developed enable destination managers to better understand the trade-offs between the economic and environmental objectives of tourism policy. In Table 5, a high economic yield market represents an above-average contribution to GVA per visitor day, while a low economic yield market represents a below-average contribution. High environmental effects are those associated with an above-average value on the particular environmental indicator per visitor day, while a low environmental effect is one below the average value on the particular environmental indicator per visitor day. Table 5 indicates that the markets that generate relatively high GVA per visitor day (for example, Japanese honeymooners, business travellers and conventions visitors) are those associated with more adverse environmental effects.

It is important to recognize that these input–output analysis-based measures are the environmental impacts directly and indirectly associated with tourism industry output. They do not measure the net environmental impacts on the economy as a whole, as CGE-based models do. Thus, they are best compared with the industry (TSA) level measures of economic yield. Since other sectors of the economy will be positively and negatively affected by changes in tourism expenditure, and the changes in these sectors will have environmental impacts, the overall environmental impacts on a destination based on input–output analysis could be quite different from those calculated using a CGE model.

Space limitations preclude further discussion of environmental yield measures herein. A detailed discussion of the approach may be found in Lundie *et al* (2007). Since the environmental impacts per visitor night can be estimated for the different visitor segments, it is now possible to determine the trade-offs that must be made between achieving high economic impacts per visitor night and the associated environmental effects.

Incorporating social impacts into a measure of tourism yield

Researchers have approached the examination of the social impacts of tourism on communities from a range of perspectives. Easterling's (2004) review and synthesis of previous research presents findings that focus on demographic, economic, environmental, political and sociocultural impacts on resident populations. Research by Doxey (1975), Butler (1980) and Faulkner and Tideswell (1997) tends to underpin much of the research in this area, with more recent work by Ap and Crompton (1998) and Fredline (2002), for example, providing scales to test social impacts.

Of particular interest, for the purposes of this paper, is the work undertaken by Faulkner and Tideswell (1997), who explore the stages of tourism development, the type of tourism activity and the influence of involvement in tourism. Based on the findings from that research, a technique has been devised to assess the social component of tourism yield involving a series of classifications using the framework developed and presented below. In developing the framework for the social impacts of tourism, a number of key characteristics were examined

Table 5. Rankings of niche markets, selected yield measures.

	GVA per visitor day	Energy use per visitor day	Water use per visitor day	Greenhouse gas emissions per visitor day	Ecological footprint per visitor day
High economic yield, low environmental impact	Japanese honeymooners; Convention; Business; Mal repeater HK first-timer Mal first-timer	UK repeaters; Malaysia +55; Backpackers; NZ +55; Mal repeaters; Mal first-timers; HK first-timers Canada +55	Malaysia +55; UK repeaters; Backpackers; Mal first-timers; Mal repeaters; NZ +55; HK first-timers; Canada +55	UK repeaters; Backpackers; Malaysia +55; NZ +55; Mal repeaters; Mal first-timers; HK first-timers; Canada +55	UK repeaters; Backpackers; Malaysia +55; Mal repeaters; Mal first-timers; HK first-timers; NZ +55; Canada +55
Low economic yield, high environmental impact	Canada +55; NZ +55; UK repeater; Backpacker; Mal +55	Business; Convention; Japanese honeymooners	Business; Convention; Japanese honeymooners	Business; Convention; Japanese honeymooners	Business; Convention; Japanese honeymooners

Source: Author estimates.

based on variables identified by Butler (1980) and Faulkner and Tideswell (1997). The impacts that particular groups of tourists have on their hosts vary with four sets of variables: characteristics of the tourists; characteristics of the tourism activity; characteristics of the destination; and destination management practices.

The same group of tourists doing the same things may have differential impacts, depending on the characteristics of the community they are visiting. Some communities are far more robust than others, while some may have specific needs that tourism can help address. Our understanding of measures of social yield lags behind economic and environmental measures because social impact assessment techniques have only recently attracted attention and are generally less developed at this stage. A technique has been devised to assess the social component of tourism yield. Details are given in Dwyer *et al* (2005). However, at this stage, the proposed method is untested and further research is required to ascertain its ease of use in practical application. The technique involves five steps: (i) profile destinations based on their characteristics; (ii) identify the characteristics which define the key market segments of tourists attracted to each destination; (iii) identify the types of activities that each market segment undertakes; (iv) identify the social impacts associated with various activities and travel behaviours; and (v) consider the management practices of each destination and how effective they are in promoting positive impacts and ameliorating negative impacts associated with the tourists and their activities.

In the first step, the robustness of the destination is evaluated using a checklist of variables. Destination robustness can be discussed in terms of community size, stage of tourism development, the ratio of tourist to resident and the environmental and cultural vulnerability, among others. This identifies communities that are likely to be affected differentially by tourism; for example, a smaller community in a more remote location that has few alternative industrial bases is likely to be affected by tourism more substantially than a larger community with a range of industries. The key market segments for each destination then need to be identified from secondary data sources, such as the IVS. These segments can then be analysed in terms of the types of travel behaviours undertaken, with much of these data already being collected in the IVS. Travel behaviours would include the activities engaged in, the types of accommodation and transport used and the time spent in a destination. In using the examples from the evaluation of economic yield, backpackers and Japanese honeymooners are much more likely to go snorkelling or scuba diving than are Malaysian repeaters or Hong Kong first-timers. The next step involves linking specific activities to social impacts. In examining the social impact of these groups, it may be found that an influx of a particular type of tourist changes the character of the destination. There are no existing data, so primary data collection is required from expert stakeholders. A Delphi study is proposed as the most appropriate data collection tool for this stage. Finally, destination management practices need to be taken into account, as good management can be effective in ameliorating negative social impact and promoting social benefits. Ultimately, it may be possible to identify a dollar value of the social yield of various market segments, but substantial research is required prior to this outcome being realized.

Implications for destination marketing

The implications for destination management depend on the stakeholder perspective. The challenge of destination marketing is that it is made up of many suppliers and service producers. Different stakeholders with different objectives will likely emphasize different target markets. Thus, while an individual operator may prefer to focus on markets that deliver higher sales revenues or higher profitability, a national or regional tourism office might wish to target markets that generate greater value added or net benefits for residents. Depending on current government policy, markets may be targeted from a variety of perspectives, such as according to their ability to generate employment or net benefits to remote regions or on the basis that less energy is consumed per visitor from those markets. Even within the private sector, some operators (for instance, B&B owners) may emphasize lifestyle rather than profitability in target market choice. Government policy may favour the development of SMEs (small to medium enterprises), or industry structure, and yield from tourism might be assessed as being greater from visitors who make more use of one or other type of operator. Less volatile source markets might also be preferred to higher growth but riskier markets.

The issue of stakeholder perspective in marketing is an important one. Tourism planners know that the destination marketing effort must rely on much more than just expected financial yield to businesses or economic yield to the wider economy. Visioning is an important step in formulating a destination marketing strategy. In the visioning step, community members attempt to look into the future and imagine what they would like their community to be. Such an effort involves identifying what is really valued or desired and including those elements in the shared image of the community. The image can help community leaders decide between alternatives that are likely to lead to the desired future and those that are likely to lead away from it. It helps a community decide how much of any type of development will fit within its vision and determine what levels of change are acceptable.

Basically, the types of markets targeted will depend on the stage of the destination life cycle. It is important to distinguish between markets that are 'mature' and those that are 'emerging'. In respect of yield measures, it is too easy to focus on established markets to the neglect of markets that may have low yield at present, but represent potential high-yield markets for the future.

These considerations reveal that the targeting of tourism marketing is much more complex than simply reaching out to 'high-yield' markets. Adding environmental and social dimensions to the yield concept, the decision makers have to deal increasingly with trade-offs between economic and environmental and social dimensions, respectively. An additional challenge arises. Targeting 'high-yield' markets (however measured) may not be an optimal strategy either for individual operators or for destination managers. One reason for this is that yield measures *per se* do not tell us anything about the elasticities of promotion, so they cannot inform us about the cost effectiveness of marketing activity. Consider Japanese honeymooners, for example. This market generates high yield in respect of daily expenditure, generation of value added, GOS and net benefits. But such measures tell us nothing about the cost effectiveness of marketing strategies to target this sector. In terms of the cost effectiveness of

the marketing effort, it may be better to focus on the wider market (Japanese tourists) rather than on a subset of this (Japanese honeymooners), or on some other market entirely. If a Aus\$10 million promotion campaign generates three times as many Japanese tourists (or UK tourists) to Australia than Japanese honeymooners, then this needs to be factored in to the evaluation of the marketing strategies to be adopted. Very little is known about the elasticities of promotion for different markets (Crouch, 1995). Until more information is obtained on these elasticities, destination marketing should not rely solely on yield estimates in identifying target markets.

Issues and challenges for further research on tourism yield

Several issues have been identified that require more attention from researchers. One involves the adjustment of visitor expenditure data to develop yield measures that incorporate imputed purchases by foreign airlines in Australia into the expenditure data. It will then be possible to compare yield measures based on unadjusted and adjusted expenditure data to determine whether systematic differences exist between such measures.

The financial indicators of tourism yield also require further study. This should include industry surveys to estimate the profitability of different tourism (characteristic) industries, industry surveys to estimate the profitability of different sectors within an industry, and surveys to determine the profitability of different market segments.

Researchers can also explore the implications of different yield measures for marketing/promotion activity. This may involve estimating elasticities of promotion for different markets by country of origin, special-interest market and tourist motivation; estimation of the economic impacts of targeting various markets given different elasticities of promotion; and exploration of the implications of different promotion elasticities for targeting 'high-yield' markets.

The objectives of different stakeholders also need to be clarified. This is necessary in order to determine which 'yield' measures are of most interest to tourism organizations. A useful exercise would involve exploration of the influence of the life cycle stage of a destination on the types of markets that should be targeted and the influence of different yield measures on which markets are targeted.

Further development of environmental yield measures could include investigating sources of more detailed data, particularly with respect to site impacts and in different locations. There is also a need for extended company audits to investigate the primary supply chain, including analysis of off-site (*upstream*) processes of selected supply chains. Also needed are estimates of on-site requirements in respect of energy use, water use, greenhouse gas emissions and ecological footprints for an extended range of tourism markets (origin, purpose).

Measuring the economy-wide or countrywide environmental impacts is an important area for further research. This would involve exploration of the use of CGE models in identifying the net environmental impacts of changes in industry composition. In this connection, further research could explore the use of a CGE model such as MMRF-Green (Pezzey and Lambie, 2001) to estimate

the environmental effects on Australian industry in providing for particular types of tourists.

The social impacts of tourism and their implications for measures of 'social yield' are in need of extensive development. This should include exploration of methods to convert the social impacts of tourism into yield measures and further investigation into how the variables associated with community type could be aggregated into an indicator of destination robustness.

Sustainable yield can be studied from the perspective of the business operator or the destination manager. There needs to be further exploration of how characteristics of tourists, characteristics of the destination, characteristics of tourist activity and destination management practices influence the social and environmental impacts of tourism at both the operator and destination levels. Regarding the operator level, further research is also required to help develop standardized measurement and reporting methods of tourism yield that are consistent with the Triple Bottom Line (TBL) approach (Dwyer, 2005).

Research is required as to how tourism yield can be usefully incorporated into the sustainability paradigm. Distribution issues also need to be explored further as to how they can be incorporated into an operational concept of sustainable yield. Despite some progress (Lundie *et al*, 2007), little is known about the trade-offs between economic, social and environmental costs and benefits, and the implications of this for measuring 'sustainable yield'.

While the yield measures discussed in this paper have been developed for Australia, the approach can be used for any destination. Additional research can also be undertaken on the development of economy-wide yield measures for a variety of different visitor types and refining yield measures for different markets.

Conclusions

As discussed above, there are problems associated with the conversion of social impacts into dollar amounts. The subjectivity of perceptions of many social impacts precludes their quantification in many cases, while the environmental impacts, at least in principle, seem more amenable to quantitative analysis. The notion of sustainable yield incorporates social and environmental dimensions alongside economic measures. At this time, no method has been developed for 'merging' these impacts into a single measure of sustainable yield. However, the measures proposed herein go some way towards operationalizing this notion at both the destination and the operator levels.

Despite the present difficulty of combining economic, social and environ-mental measures into a single 'index of sustainability', the measures are valuable in allowing destination managers and other policymakers to better understand the 'trade-offs' that may need to be made in tourism development and marketing activity. They allow, for example, a destination manager to 'weigh up' the potential net economic gains from developing a particular niche market with the potential social and environmental costs that will be imposed on the destination by additional tourism from that market. Conversely, they allow a destination management organization that is pursuing particular environmental

policies to identify those visitor markets that are most consistent with this policy, and to highlight possible economic opportunities that are foregone. At the operator level, the yield measures that are being developed can provide basic input into tourism firms that wish to adopt a TBL approach to reporting. Since all policymaking involves 'decision making under constraints', the measures outlined can lead to more informed tourism strategies for the destination.

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