L-Università ta' Malta

ISLANDS AND SMALL STATES INSTITUTE
UNIVERSITY OF MALTA, MSIDA, MALTA

OCCASIONAL PAPERS
ON ISLANDS AND SMALL STATES
ISSN 1024-6282

Occasional Paper Number: 03/2018

A NOTE ON OPTIMAL TOURISM CONTROL

Lino Briguglio

More information about the series of occasional paper can be obtained from the Islands and Small States Institute, University of Malta. Tel: 356-21344879; email: islands@um.edu.mt.

A NOTE ON OPTIMAL TOURISM CONTROL

Lino Briguglio
University of Malta

1.1 Introduction

This note will present a diagram which can be used when discussing tourism carrying capacity. It borrows from the theory of optimal pollution control, found in most Environmental Economics textbooks. The diagram presented here relates to the need to take account of income foregone as a result of a reduction in tourism inflows, juxtaposed against the environmental damage and social discomfort that can result from excessive amount of tourism business.

1.2 The upsides and downsides of tourism

The economic advantages and disadvantages of tourism have been widely documented in previous studies (e.g. Bryden, 1973; Tribe, 1999; Vogel, 2001; Archer et al., 2005; Diedrich et al, 2009, Ahmad et al., 2018). The most important benefits of tourism are generally associated with its contribution to the economy. Tourism seems to be highly effective in generating employment and income because its relatively high income multiplier and inter-industry linkages (Archer, 1977; Briguglio 1992, Khan et al. l995; Zaei, & Zaei, 2013; Stephanos & Polo, 2016).

However, with the rapid growth in tourism, several writers expressed reservations about the nature and size of the benefits attributable to tourism and expressed a degree of scepticism about the potentialities of tourism as a tool for economic development and growth and as a means of maximizing the welfare of the resident population (e.g. Archer et al., 2005). There are studies that even dispute the extent or existence of net economic benefits of tourism referring due mostly to the increasing demand on the scarce resources of the tourist area, particularly land and housing (Martin Martin et al, 2018). Tourism may also have negative effects on employment in the sense that the sector is often characterised by very low wages and unsatisfactory working conditions (Walmsley 2017).

The benefits of tourism have also been associated with cohesion and social harmony, with some studies considering a force for peace and understanding between nations (e.g. Leitner, 1999). Again here the connection of tourism with peace and understanding has been questioned. In some cases, international tourism has been considered as a form of 'neo-colonial' type development on emerging nations (Hall and Jenkins, 1995). Another factor relates to the resentment that may be caused by the higher paid position in hotels held by expatriates, generating a feeling of inferiority among the locals, for whom the more menial jobs are frequently reserved (Archer et al. (2005). Tourism, even if good for economic development, can also create inequalities between regions and social classes (Tosun, Timothy, Öztürk, 2003).

In a strand of the literature, tourism was described as passing through different phases. Butler (1980) described tourism development as a series of stages through which a destination evolves, with the respective stages called exploration, involvement, development, consolidation and stagnation. Residents' attitudes depend, in part, on these stages. Doxey (1976) had earlier argued that residents' attitudes are positive during the initial stages of

tourism development but become increasingly negative as a destination evolves towards stagnation.

1.3 Tourism carrying capacity

The term "carrying capacity" has been used to describe the possibility that tourism has its limits, generally in terms of the number of visitors, suggesting that if tourism exceeds this limit, the financial benefits of tourism would be outweighed its negative externalities, some of which may be economic, but are probably mostly environmental and social. The concept has often been used in conjunction with sustainable tourism and overtourism.[1]

There are various definitions of tourism carrying capacity. The World Tourism Organization (WTO, 1981) defined it as "the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction". Other definitions also refer to some form of maximum or limit. For example, Chamberlain (1997) defined it as the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected or the quality of visitors experience declining. Middleton and Hawkins (1998) define carrying capacity more simply as a measure of the limit beyond which an area may suffer from the adverse impacts of tourism. Similar definitions were proposed by Getz (1983), O'Reilly (1986). Coccossis et al, 2001 and Nghi et al. (2007).

From these definitions it emerges that carrying capacity has various dimensions. Wagar (1964), often considered as a seminal work on this subject, focusses on ecological carrying capacity. The concept was subsequently developed into different forms such as 'social carrying capacity' (Daily & Ehrlich, 1996; Muler Gonzalez et al., 2018)), 'cultural carrying capacity' (Seidl & Tisdell, 1999; Cocassis et al., 2001), 'environmental carrying capacity' (Kurhade, 2013) and economic carrying capacity (Wetzel & Wetzel, 1995).

The limit or maximum capacity is difficult to calculate in practice. However, there are two opposing views on this matter. One is that carrying capacity is infinitely expandable, a view associated with those who promote mainstream tourism as if this can be absorbed indefinitely by the host destination. As Rees (1996) argues, mainstream tourism models tend to disregard ecological degradation and social discomfort on the host community. On the other extreme there are those that assign too much importance to the ecological and social deficits of tourism as if the economic aspect does not matter.

1.4 Optimal tourism control

The theoretical underpinnings of optimal tourism control diagram presented below is that it is not desirable to reduce tourism to zero, as this will be bad for business, which generates income and employment. At the same time it is also undesirable to let tourism grow in an

[1] The carrying capacity concept would seem to have evolved into the concept of overtourism. This term is generally associated with the downsides of tourism including overcrowding, traffic congestion, excessive development and takeover of facilities by tourists. On this matter Milano (2017) and Goodwin (2017).

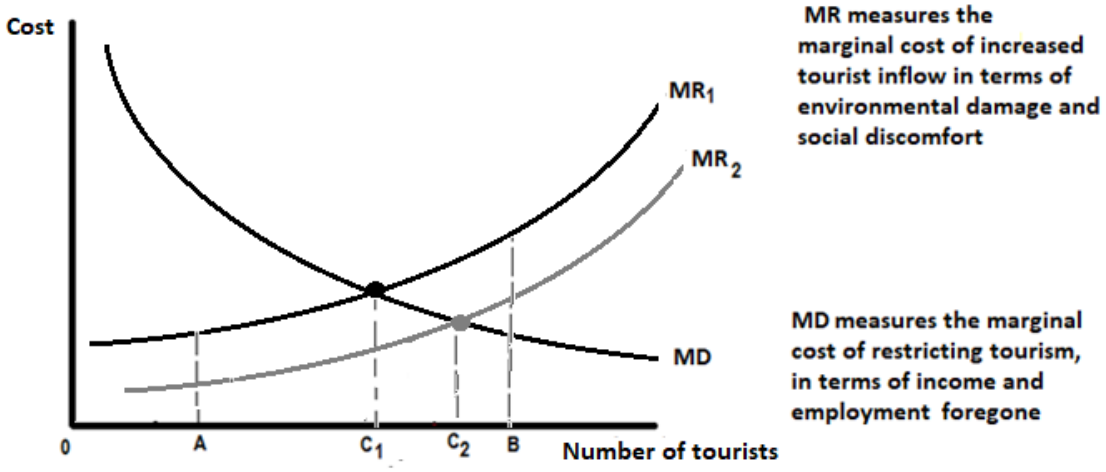
uncontrolled manner as this will be bad for social well-being in the host community and for the physical environment of the tourist destination.[2]

In the diagram, the MR curve measures the marginal cost of restricting tourism. As explained above, tourism generates income and employment and usually has a relatively high income multiplier effects, as well as relatively high inter-industry linkages with various other sectors, including food. transport, banking and others. This suggests that the higher the tourist inflows, the better it is for the economy. It follows that there is an economic cost of restricting tourist inflows, in the sense of lost employment opportunities, lost income to employees and entrepreneurs as well as to business in general.

The MD curve measures the marginal cost of increased tourist inflow in terms of environmental damage and social discomfort. As explained above, as the tourist inflow increase, one should expect an increase in traffic congestion, overcrowding, environmental degradation and other undesirables.

A callous businessman or an excessively business oriented tourism authority, would opt for a large number of incoming tourists (for example at point B on the horizontal axis), assigning priority to business interests, and downplaying or even disregarding social and environmental concerns.

At the other extreme a person or a tourism authority with fundamentalist views regarding environmental degradation and social wellbeing would opt for a very limited number of tourists (for example at point A on the horizontal axis), downplaying and even disregarding the economic benefits of tourism.



A person or a tourism authority with a balanced view in this regard would give due importance to economic, environmental and social concerns, taken together, arguing that an inflow of tourists near point C_1 would optimize welfare. The optimal number of tourists can

[2] In this note it is assumed that carrying capacity is measured by the number of incoming tourists (See Marsiglio, 2017)

be moved outwards towards C_2 (i.e. a higher tourist inflow) with better management of the destination, resulting in the lowering of the MR curve, as shown in the diagram.

1.5 Concluding remark

This theory has important implications regarding tourism carrying capacity, suggesting, among other things, that at some optimal carrying capacity point it is not desirable to increase or decrease tourist inflows and that better management of the destination can expand the destination's tourism carrying capacity.

However, in practice it is difficult to measure the marginal cost of tourist restriction in terms of business foregone and the marginal cost of environmental and social damage caused by increased tourists inflows. This is in fact the major problem with the carrying capacity argument in that although this concept is well understood, it is difficult to find which tourist numbers exceed the carrying capacity of a destination, given that this is not something static, can differ from destination to destination, has various dimensions, depends on the good or bad behaviour of the visitors, and varies according to the social and environmental policies and practices in the host destination.

References

Ahmad, F., Draz, M. U., & Su, L. (2018). Taking the Bad with the Good: The Nexus between Tourism and Environmental Degradation in the Lower Middle Income Southeast *Asian Economies*. Available at SSRN e-library: https://ssrn.com/abstract=3206531

Archer, B. (1977). *Tourism Multipliers: The State-of-the-Art.* Cardiff University of Wales Press.

Archer,B., Cooper, C., Ruhanen, L. (2005). The positive and negative impacts of tourism. *Global Tourism*, Vol. 3: 79-102.

Briguglio, L. (1992). Tourism Multipliers in the Maltese Economy, in: P. Johnson and B. Thomas (eds.), *Perspectives on Tourism Policy*, London, UK, Mansell Publishers.

Bryden, J. M. (1973). *Tourism and Development: A Case Study of the Commonwealth Caribbean*. Cambridge: Cambridge University Press

Butler, R. W. (1980). The concept of a tourist area cycle of evolution: implications for management of resources. *Canadian Geographer/Le Géographe canadien*, Vol. 24(1): 5-12.

Chamberlain K. (1997). *Carrying capacity*, UNEP Industry and Environment 8.Paris: UNEP

Coccossis, H., Mexa, A., Collovini, A., Parpairis, A., Konstandoglou, M. (2001). *Defining, measuring and evaluating carrying capacity in European Tourism Destinations*. Report avaialbe at: http://ec.europa.eu/environment/iczm/pdf/tcca_en.pdf

Daily, G.C. & Ehrlich, P.R. (1996). Socioeconomic equity, sustainability, and Earth's carrying capacity. *Ecological Applications* Vol. 6: 991-1001.

Diedrich, A., & García-Buades, E. (2009). Local perceptions of tourism as indicators of destination decline. *Tourism Management*, Vol. 30(4): 512-521.

Doxey, G. V. (1976). When enough's enough: The natives are restless in Old Niagara. *Heritage Canada*, Vol. 2: 26–28.

Getz, D. (1983). Capacity to Absorb Tourism: Concepts and Implications for Strategic Planning. *Annals of Tourism Research* Vol. 10:239–263.

Goodwin, H. (2017). The challenge of overtourism. *Working Paper 4.* Responsible Tourism Partnership

Hall, C. M., and Jenkins, J. M..(1995). *Tourism and Public Policy*. London: Routledge

Khan, H., Phang, S. Y., & Toh, R. S. (1995). The multiplier effect: Singapore's hospitality industry. *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 36(1): 64-69.

Kurhade, S.Y.(2013). Methodological Framework for Evaluation of Tourism Carrying Capacity of Eco Sensitive Region. *International Journal of Innovative Research in Science, Engineering and Technology*. Vol. 2 (3): 781-786.

Leitner, M. J. (1999). Promoting Peace Through Intergenerational Tourism. *Tourism Recreation Research*. Vol. 24(1): 53–56.

Marsiglio, S. (2017). On the carrying capacity and the optimal number of visitors in tourism destinations. *Tourism Economics.* Vol. 23(3): 632–646

Martín Martín, J., Guaita Martínez, J., & Salinas Fernández, J. (2018). An Analysis of the Factors behind the Citizen's Attitude of Rejection towards Tourism in a Context of Overtourism and Economic Dependence on This Activity. *Sustainability*, Vol.10(8): 2851

Middleton, V.C. & Hawkins R. (1998). *Sustainable Tourism: A Marketing Perspective*. Oxford: Butterworth-Heinemann

Milano, C. (2017). *Overtourism and tourismphobia: Global trends and local contexts.* Barcelona: Ostelea School of Tourism & Hospitality.

Muler Gonzalez, V., Coromina, L., & Galí, N. (2018). Overtourism: residents' perceptions of tourism impact as an indicator of resident social carrying capacity-case study of a Spanish heritage town. *Tourism Review*. Manuscript TR-08- 2017-0138.R1

Nghi, T., Thanh Lan, N., Dinh Thai,N., Mai, D., Xuan Thanh, D. (2007). Tourism carrying capacity assessment for Phong Nha - Ke Bang and Dong Hoi, Quang Binh Province. *VNU Journal of Science*, Vol. 23: 80-87

O'Reilly, M. (1986). "Tourism carrying capacity", *Tourism Management*, Vol.8(2): 254–8.

Rees, W.E. (1996). Revisiting carrying capacity: Area-based indicators of sustainability. *Population and Environment.* Vol. 17(3) 195-215.

Seidl, I., Tisdell, C.A. (1999). Carrying capacity reconsidered: from Malthus' population theory to cultural carrying capacity. *Ecological Economics.* Vol. 31, 395-408

Tosun, C., Timothy, D. J. & Öztürk, Y. (2003). Tourism Growth, National Development and Regional Inequality in Turkey. *Journal of Sustainable Tourism.* Vol. 11: 133–161.

Tribe, J. (1999). *The Economics of Leisure and Tourism.* Oxford: Butterworth- Heinemann.

Vogel, H. L. (2001). *Travel Industry Economics.* Cambridge: Cambridge University Press.

Wagar, J.A. (1964) The Carrying Capacity of Wildlands for Recreation. *Forest Science Monographs*, Vol. 7, 1-23

Walmsley, A. (2017). Overtourism and underemployment: a modern labour market dilemma. Paper presented at Responsible Tourism in Destinations 13 – Tackling Overtourism – Local Responses, 29-30 September 2017 – Hannesarholt, Reykjavik, Iceland.

WTO (1981). *Saturation of Tourist Destinations*. Report of the Secretary General, Madrid.

Zaei, M. E., & Zaei, M. E. (2013). The impacts of tourism industry on host community. *European journal of tourism hospitality and research*, Vol. 1(2), 12-21.