Social Carrying Capacity of Mass Tourist Sites: Theoretical and Practical Issues about its Measurement

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Summary

Congestion is an important management problem at mass tourist sites. This essay focuses on the social carrying capacity (SCC) of a tourist site as indicator of residents' and visitors' perception of crowding, intended as the maximum number of visitors (MNV) tolerated. In case of conflict between the residents' MNV tolerated and the visitors' MNV tolerated, the policy-maker has to mediate. We consider the case in which the residents' SCC is lower than the visitors' SCC, and the site SCC is the result of a compromise between these two aspects of the SCC. This can be measured by making reference to two criteria of choice: the utility maximisation criterion and the voting rule. The use of one method rather than the other depends on the data available about the individual preferences on crowding. Assuming that individual preferences are known, a maximisation model for the computation of the site SCC is conceived. It represents the case in which the residents' SCC is the limiting factor. The site SCC is intended as the number of visitors which maximises the social welfare function. Because a local policy-maker maximises the welfare of residents, in this model visitors are represented by those residents whose welfare wholly depends on the tourism sector, while the social costs due to crowding are borne by those residents who are partially or totally independent from tourism. Nevertheless, in practice, the individual preferences about crowding are not always known. In this case, the MNV tolerated can be computed by applying the majority voting rule. It is shown that, under certain conditions, the optimum number of visitors, obtained through a maximisation model, is equal to the MNV tolerated by the majority of voters.

Keywords: Sustainable tourism development, Tourism carrying capacity, Social carrying capacity, Maximisation criterion, Majority voting rule, Overcrowding, Mass tourist site

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Abstract

Congestion is an important management problem at mass tourist sites. This essay focuses on the social carrying capacity (SCC) of a tourist site as indicator of residents' and visitors' perception of crowding, intended as the maximum number of visitors (MNV) tolerated. In case of conflict between the residents' MNV tolerated and the visitors' MNV tolerated, the policy-maker has to mediate. We consider the case in which the residents' SCC is lower than the visitors' SCC, and the site SCC is the result of a compromise between these two aspects of the SCC. This can be measured by making reference to two criteria of choice: the utility maximisation criterion and the voting rule. The use of one method rather than the other depends on the data available about the individual preferences on crowding. Assuming that individual preferences are known, a maximisation model for the computation of the site SCC is conceived. It represents the case in which the residents' SCC is the limiting factor. The site SCC is intended as the number of visitors which maximises the social welfare function. Because a local policy-maker maximises the welfare of residents, in this model visitors are represented by those residents whose welfare wholly depends on the tourism sector, while the social costs due to crowding are borne by those residents who are partially or totally independent from tourism. Nevertheless, in practice, the individual preferences about crowding are not always known. In this case, the MNV tolerated can be computed by applying the majority voting rule. It is shown that, under certain conditions, the optimum number of visitors, obtained through a maximisation model, is equal to the MNV tolerated by the majority of voters.

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1 Introduction

Tourism[1] is one of the fastest expanding sectors of the world economy. In the EU its contribution to the total GDP is about 4.7%. Visitors influence the social, cultural and economic activities of a site, resident life style and public policy-making. They are very sensitive to social, cultural and environmental quality; therefore tourist sites have to be

[1] The tourism sector is intended in the broad sense, in that it is made up of both tourists or overnight visitors (people who visit the site and stay at least one night) and same-day visitors (people who visit the site, but do not sleep there) (World Tourism Organization, 1998).

managed according to sustainable criteria otherwise they will lose their ability to generate welfare.

Every process of tourism growth has to be sustained by the tourism carrying capacity (TCC) of the site. In this way, policy-makers must pursue sustainable tourism through 'a rational distribution of tourism activity…without exceeding the saturation limits of each area…according to its vulnerability and characteristics' (Decleris, 2003, p.86).

In general, the concept of carrying capacity applied to the human species 'is foremost socially determined, rather than biologically fixed due to the important influence of human consumption patterns, technologies, infrastructure, and impacts on the environment or food availability' (Seidl & Tisdell, 1999). Applied to tourism, the TCC means that tourist economic growth has to be responsible towards local society and its cultural values, and compatible with the preservation and improvement of the local natural environment and with the conservation of the local traditional economic activities.

A tourist system is an integrated system constituted by different sub-systems, such as the ecological (biological and physical), social, cultural, infrastructural and management (institutional and economic) sub-systems (World Tourism Organization, 1998, 2004). Therefore the TCC is the result of the carrying capacities of all these sub-systems. The levels of these different carrying capacities may be in conflict; for example, mass tourism may be desirable from the economic point of view because it increases the local aggregate income, but from the social and ecological point of view it can be damaging if criminality increases and dunes are destroyed. This means that, in practice, policy-makers have to mediate between these different carrying capacities, also stimulating discussion about society values in order to change their plans and actions if necessary.

In this paper we focus on the social aspect of the carrying capacity. In literature, the social carrying capacity (SCC) is in general analysed both from the point of view of residents and from that of visitors. We consider mass tourism sites, because high-density recreational activities today are the predominant kind of tourism in Europe. Tourism is generally a seasonal economic activity and, on the most crowded days of the year, traffic, criminality, waiting time, and noise by day and by night are major causes of residents' discomfort, and the quality of the visitors' recreational experience deteriorates. Therefore, we present a joint analysis of these two aspects of the SCC in order to establish the site SCC by using a cost-benefit analysis (CBA) model based on the maximisation of individual preferences. Nevertheless, because sustainable tourism development means that real choices have to be made, we also highlight that a further criterion of choice is needed when preferences about crowding are unknown.

Section 2 briefly describes the CBA in order to measure the TCC as indicator of sustainable tourism. In section 3 the focus is on the site SCC as indicator of residents' and visitors' perception of crowding. We make particular reference to the case of conflict given by the situation in which the residents' SCC is lower than the visitors' SCC. Assuming that it is possible to measure the utility loss due to crowding, a solution of this conflict is described by a CBA model in which the policy-maker mediates between residents' and visitors' claims. Section 4, instead, focuses on the case in which the utility loss due to crowding cannot be estimated, and the voting criterion of the majority rule is applied. We present the conditions to be satisfied in order to make the optimum number of visitors obtained through a maximisation model equal to the MNV tolerated by the majority of voters.

2. Tourism Carrying Capacity and Cost-benefit Analysis

Different indicators are used for the TCC measurement because not only the number of visitors, tourist density and length of stay, but also visitors' life style and their impact on the natural environment, facilities, infrastructures and residents' life style have to be considered.

Nevertheless there continues to be the demand for representing the TCC with a single indicator. In economic literature the number of visitors is generally used (Fisher and Krutilla, 1972; Cicchetti and Smith, 1973; Canestrelli and Costa, 1991). Given the specific characteristics of tourism in the site considered, the TCC is defined as the maximum number of visitors (MNV) that can be contained in a tourist area. We make reference to the number of visitors present on a site per day.

In order to estimate a sustainable and efficient MNV, the CBA is applied. Economic efficiency states that tourist resources are rationally used if the difference between their benefits and costs is maximised; while sustainability requires social and environmental goods that the market does not evaluate to be considered in this computation. Therefore, by making reference to a CBA model the TCC is identified with the optimum number of visitors which maximises the social net benefit (Fisher and Krutilla, 1972). Let us consider the following very simple static model:

$$\max_{Q} \quad \Pi(Q) = NB(Q) - C_S(Q) - C_E(Q), \qquad (1)$$

where: $\Pi(Q)$ is the total net benefit from tourism activity, $NB(Q)$ the private net benefit from tourist production, $C_S(Q)$ the social costs (such as noise, pollution, stress from crowding, and so on), $C_E(Q)$ the value of environmental losses (a loss of biodiversity such as dune reduction, for example), and Q the number of visitors per day. It is, in general, assumed that the net marginal private benefit from tourism decreases with the number of visitors, while the social marginal cost and the environmental marginal cost increase. The optimum number of visitors Q^* has to satisfy the condition of equality between the net marginal benefit and the sum of the social and environmental marginal costs.

3. Social Carrying Capacity: the Maximisation Criterion

We cannot deal here with all the different aspects of the TCC. Our attention is devoted to the SCC computation in situations in which mass tourism determines crowding effects. Noise, criminality and waiting time represent social aspects of the TCC. Residents' quality of life and visitors' recreational experience can deteriorate as the number of visitors increases. As regards the optimal level of use from the ecological point of view, we assume that it is not a limiting factor. For example, natural resources used for recreational activities, such as numerous beaches, are very extensive, or the ecological aspect has greatly lost its importance because the natural environment has already been sacrificed heavily to tourist growth.

According to the CBA, the SCC of a tourist site can be in general defined as the optimum number of visitors per day to which the maximum social utility due to congestion corresponds. More specifically, in literature the SCC of a tourist area is defined from two different points of view. From the point of view of residents, the SCC represents the social interaction between residents and visitors, and it is the MNV tolerated by the host population without reducing their quality of life. From the point of view of visitors, the SCC describes the interaction between the visitors themselves, and is defined as the MNV tolerated by the visitors themselves without reducing the quality of the recreational experience or desiring to go to an alternative site or return home. These two aspects of the SCC may be in conflict, since the MNV tolerated by the visitors themselves may be different from the MNV tolerated by residents.

The shape of the individual utility curve highlights the psychological nature of the perception of overcrowding. In general, when an overcrowding sensation begins to be felt, the individual total utility U starts to reduce, the marginal utility becomes negative, and this means that the total number of visitors on the site exceeds the maximum number tolerated. In addition, different individuals (whether residents or visitors) may be sensitive to different level of crowding. Figure 1 shows, as an example, two different situations: curve (a) represents the total utility U of an individual whose satisfaction from the presence of visitors is quite low, and who is quite sensitive to crowding because the overcrowding sensation begins to occur to the right of the fairly low daily number of visitors Q_1; while curve (b) represents a person whose satisfaction is high and who becomes sensitive to crowding with large numbers of visitors (overcrowding begins at Q_2) (Clawson and Knetsch, 1978; Marzetti, 2003).

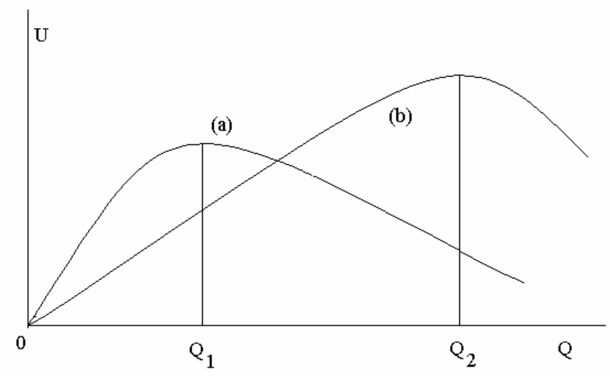

Figure 1: Residents' or visitors' utility

3.1 Measuring the utility loss due to crowding

Residents' and visitors' losses of welfare due to overcrowding are not generally evaluated by the market. Nevertheless, measuring the SCC through the CBA requires them to be estimated with a specific method.

The CVM is a technique conceived by economists to estimate in monetary terms those values which are not established by the market. It is based on the economic theory of demand (individual preferences) and its philosophy is: when the value of something is unknown, go to those who might value it and ask how much they evaluate it (Price, 2000). Through a survey by questionnaire the CVM creates a hypothetical market which permits respondents to elicit, according to their preferences, the value of the non-marketable consequences of a change in the number of visitors to a site. The value so elicited is contingent to the scenario created through the questionnaire. The CVM is generally applied in the willingness to pay version (WTP), where the respondent is asked how much s/he is willing to pay for a certain change in crowding (Cicchetti and Smith, 1973). More specifically the WTP, for a project which reduces crowding, represents the value of the avoided loss of utility due to overcrowding. Nevertheless it can also be applied in the value of enjoyment (VOE) version[2]. In this CVM version the evaluation question asks respondents the value of enjoyment (dissatisfaction) of a change in the daily number of visitors. Compared with the WTP version, the VOE version has

[2] The VOE method have been applied by Penning - Rowsell *et al*. (1992) for estimating the use value of British beaches. With the same purpose, in Italy this method has been used by Marzetti and Zanuttigh (2003), and Marzetti and Lamberti (2004).

the advantage that no payment vehicle, which might be unpopular, is specified; so the number of protest answers may be lower[3].

The CVM (in whichever version) permits an estimate of the value of the individual preferences about crowding, which depends on a number of variables. A model of resident's/visitor's satisfaction (dissatisfaction) is as follows:

$$U = r\,(Q, C, A, L, R, S, I), \qquad (2)$$

where: U = individual satisfaction (utility); Q = daily number of visitors; C = crowding consequences (advantages and disadvantages); A = a vector of site attributes, such as infrastructure capacity and facilities; L = factors representing individual quality of life; R = reactions to overcrowding; S = socio-economic attributes, such as total household income per year, sex, age, education, employment, marital status; I = survey influences, such as interviewer characteristics. Taking other variables as constant, it is expected that the resident or visitor relation between U and Q is represented by an individual utility curve such as one of those indicated in figure 1.

Guidelines for the specification of model (2) cannot be provided by the economic theory. Validity and reliability of the survey results are, in general, tested by correlation and regression analysis, and extensive literature exists on this topic (see Bateman and Willis, 1999, for example).

3.2. The site SCC: a maximisation model

The site SCC is obtained by comparing the visitors' SCC, which we indicate with Q^*, with the residents' SCC, indicated with Q^{**}. It may be the result of a compromise between these two carrying capacities, which is reached by the mediation of the local policy-maker responsible for the sustainable management of the site. In general, three situations are possible:

a) $Q^* = Q^{**}$, which is the ideal situation because it is a social equilibrium and only one indicator represents the SCC.

b) $Q^* < Q^{**}$, which indicates that visitors reach the maximum utility before residents. This can be the result of an inadequate quality of tourist services or a lack of adequate infrastructures and facilities. The policy-maker's action could be promoting the organisation of crowd-attracting activities, and building (or improving) infrastructures and facilities.

c) $Q^* > Q^{**}$, where residents reach the maximum utility before visitors. Our attention is on this last case. It represents a situation of congestion, quite frequent in mass tourism sites, which we model in the following way.

The task of policy-makers is pursuing social welfare. Local policy-makers are elected by residents not by visitors, and they identify the social welfare with residents' welfare. Therefore, in this essay we consider that in the local political context visitors' interests are represented by those residents who produce tourist services (the tourist offer)[4]. We distinguish three kinds of residents: i) those who are directly and wholly tourism-dependent (the local tourist sector), and who represent visitors' needs, ii) those who are in part indirectly tourism-dependent (such as those who benefit from the fact that a well developed tourist sector increases the local economic welfare), and iii) those who are totally independent from tourism (such as those who work in the public administration or pensioners). In addition, for simplicity, we suppose that residents who belong to category i) do not feel irritated by the presence of tourists; while those who belong to categories ii) and iii) suffer a loss of enjoyment in overcrowded situations due to tourism.

[3] In particular, if survey studies describe scenarios that respondents find unclear or unrealistic, or are based on relatively small samples, the estimates obtained could differ widely from the true value; therefore great attention has to be paid to these last two aspects.

[4] Canestrelli and Costa (1991, p. 298) highlight that the WTP of tourists 'can be easily translated' into the incomes of the 'tourist-dependent population'.

Supposing that valid and reliable estimates of the monetary value of the utility losses due to crowding are available, we specify two aggregated utility functions about residents: i) the utility function of residents wholly dependent on tourism; and ii) the utility function of partially or totally independent residents. Thus we suppose that the optimum number of visitors tolerated by fully dependent residents is obtained by maximising their aggregated utility curve. This optimum number represents not only their own SCC but also the visitors' SCC, and for simplicity we refer to it as the visitors' SCC. Instead, the residents' SCC is for simplicity assumed to be the optimum number of visitors which maximises the utility function of partially or wholly independent residents.

An aggregation procedure assumes that all individuals are alike and have the sample mean characteristics, such as the sample mean income (Cicchetti and Smith, 1973). Let us assume, for simplicity, that the local tourist sector is a perfect competition market which offers a basket of tourist goods (such as recreational activities and accommodation) per visitor at the price p. The representative wholly tourism-dependent resident does not suffer from crowding and maximises her/his utility U_1. Utility depends on income y_1, and for simplicity we write $U_1(y_1) = y_1$. We consider $y_1 = pQ - C(Q)$, where $C(Q)$ is the production cost, Q the tourist production measured in number of visitors per day. The optimal problem of this representative wholly tourism-dependent resident is:

$$\max_{Q} \; [U_1(y_1) \equiv pQ - C(Q)]. \qquad (3)$$

The first order condition is:

$$p = C'(Q), \qquad (4)$$

where $C'(Q)$ is the first order derivative of $C(Q)$, which for simplicity we assume to increase with Q. The solution is the tourist offer:

$$Q^{*} = h\,(p). \qquad (5)$$

As regards the ii) and iii) categories of residents we use the following model. Their individual utility is $U_2(y_2) = y_2$, where income y_2 is equal to the sum of the non-tourism income y_0 and the tourism-dependent income $a(pQ - C(Q))$, where $0 \leq a < 1$. When $a=0$, it means that a resident is wholly tourism-independent. In addition, their social loss of utility due to crowding is $C_s(Q)$. Therefore, the optimal problem of the representative resident who partially depends on - or is wholly independent of - tourism is:

$$\max_{Q} \; [U_2(y_2) - C_s(Q) \equiv y_0 + a(pQ - C(Q)) - C_s(Q)]. \qquad (6)$$

The first order condition is:

$$p = C'(Q) + C_s'(Q)/a, \qquad (7)$$

where $C_s'(Q)$ is assumed to increase with Q[5]. The solution can be written:

$$Q^{**} = f\,(p). \qquad (8)$$

[5] The utility function U, described in figure 1, is consistent with the residents' utility here defined. In fact, by assuming the marginal costs to be linearly increasing, it follows that U is strictly convex since U'' is negative being $a > 0$. in the more general case, the requirement is that $C''_s(Q) > 0$ and $C''(Q) > 0$.

According to equation (5), given the price *p*, *Q* depends on the ratio between the marginal utility loss due to crowding and the coefficient of tourism benefit *a*. If there is no loss due to overcrowding, $C_s'(Q)/a = 0$, and Q^* is equal to Q^{**}; while when $C_s'(Q)/a > 0$, $Q^{**} < Q^*$. In other terms, when the utility loss $C_s'(Q)/a > 0$, the maximum number of visitors tolerated by partially or wholly tourism-independent residents is lower than that claimed by wholly tourism-dependent residents (or by visitors themselves). In this situation it is a policy-maker's task to mediate between them.

Let us assume that a policy-maker wants to know the number of visitors which maximises the social welfare, here intended as the sum of all residents' utilities:

$$\max_Q \{U_1(y_1) + U_2(y_2) - C_s(Q) \equiv (pQ - C(Q)) + [y_0 + a(pQ - C(Q)) - C_s(Q)]\}. \qquad (9)$$

The first order condition is:

$$p = C'(Q) + C_s'(Q)/ (1+ a), \qquad (10)$$

and we write

$$Q° = g(p). \qquad (11)$$

At the price *p*, $Q°$ represents the ideal site SCC. It is between Q* and Q** because $C_s'(Q)/(1+ a) < C_s'(Q)/a$, as shown in figure 2 (by assuming the marginal cost to be linear in *Q*).
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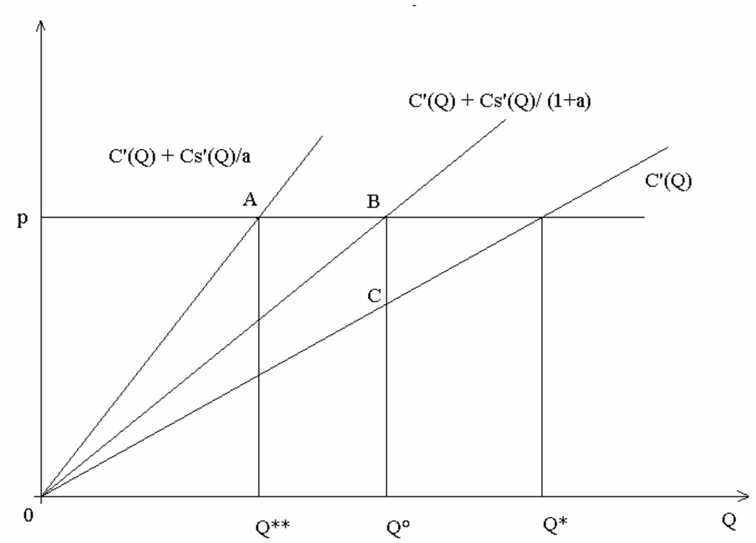

Figure 2: Site SCC

According to equation (10), the price *p* is the social price of the tourist basket because it is comprehensive of the social cost due to crowding.

In order to pursue a sustainable management of the tourist resort, let us finally assume that a policy-maker decides to internalise the social loss due to crowding by taxing the tourist sector. According to our model, we can write $\tau = C_s'(Q)/ (1+ a)$, where τ is a Pigouvian tax; so $\tau Q°$ is the total tax that the tourist sector should pay the policy-maker. In figure 2 the tax amount τ is equal to BC.

4. Social Carrying Capacity: the Voting Criterion

According to our model, the MNV which represents the ideal site SCC is obtained by maximising the local social welfare. From the practical point of view, if this model is to be useful, individual preferences have to be known. As regards the visitors' SCC, the optimum Q^* can be estimated because the economic variables p and a, and the $C'(Q)$ economic function are known to the policy-maker. Nevertheless, experience shows that a CVM survey is not always successful, and in this case the estimate of the actual preferences represented by the $C_s'(Q)$ social function is not always possible. More specifically, a respondent may declare that s/he is unable to reply to the valuation questions, or may behave like a "free-rider"[6]. If the number of no responses and protest answers is high, it is not possible to estimate the aggregated utility curve of residents[7], and it is not possible to estimate the site SCC through a CBA model. Therefore Q^{**} has to be estimated by some other method.

A different method for estimating Q^{**} is by directly asking residents, partially or wholly tourism-independent, the MNV tolerated on the site considered, by means of a survey by questionnaire. We call this method a MNV survey in order to distinguish it from a CVM survey. Experience shows that residents generally have no problem in establishing the MNV tolerated on the site considered (Severiades, 2000; Medoro, 2004-5). More specifically, through this method, no questions are asked about the monetary value of the respondent's satisfaction (dissatisfaction) due to crowding. Making reference to the most crowded days of the year, respondents are asked if they would prefer a daily number of visitors greater or lower than those present on the site so as not to feel irritated, or if they prefer the same number. In addition they are asked how comfortable (uncomfortable) they feel about the number of visitors present on the site considered, and their reaction to overcrowding.

The passage from the individual MNV tolerated to the SCC requires the specification of a criterion of social choice. The closest substitute for the maximisation criterion is a voting rule. Different voting rules exist for social deliberations. The majority rule[8] is generally used for social choices. In politics the majority rule is applied to results obtained by the universal suffrage; while here this rule is applied to the results of a less costly survey based on a representative random sample of the relevant population (Marzetti and Mosetti, 2004). In order to distinguish this method from that of the CBA, we call it the majority rule method (MRM).

As regards the general management of social goods, Bowen (1943, p.33) discusses - when preferences are unknown - the 'possible use of voting as a means of measuring or inferring marginal rates of substitution and hence of determining ideal output', and highlights the conditions under which the ideal or optimum output of a social good obtained by a maximisation utility model is equal to the output preferred by the majority of voters. As regards the specific social losses due to overcrowding we highlight that, if it is assumed that each resident, partially or wholly tourism-independent, declares as MNV tolerated the number corresponding to her/his maximum net satisfaction, the optimum number of visitors obtained by maximising their utility is equal to the MNV obtained with the MRM even if respondents are unable to establish the monetary value of their satisfaction.

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[6] Some respondents may give a false response or no response to the evaluation questions if they fear that they will be asked to pay for the good under evaluation, even when assured that no payment will be asked.

[7] In addition**,** even if a main survey of at least 500-600 interviews is carried out in order to estimate values with a confidence level of at least 95%, some coefficients – important from the economic point of view - may be statistically non-significant. Furthermore, even where most coefficients are statistically significant, the overall explanatory power of the relationship considered may be quite low. Finally, some simplifications might be needed for aggregating the individual preferences in a social utility function (Bowen, 1943; Cicchetti and Smith, 1973; Mueller, 1979).

[8] Rawls (1971, revised 1999, p.313) claims that the best available way of ensuring 'just and effective' choices is some form of majority rule.

Therefore, in order to establish the site SCC, when $Q^* > Q^{**}$ and $C_s'(Q)$ cannot be estimated through a CVM survey, a policy-maker - aiming to internalise the residents' social loss caused by the tourist sector - is rationally limited by the fact that the monetary values of the utility loss due to crowding is unknown. More specifically, as regards the social function $C'(Q) + C_s'(Q)/a$, only the point A in figure 2 is known because Q^{**} is obtained through the MRM. In the case of linearly increasing marginal costs, as assumed in the model presented in section 3.2 it is easy to show that the ideal site SCC $Q°$ and the optimal amount of the Pigouvian tax τ can be computed.

6. Conclusions

In this essay two methods for measuring the SCC are presented: the cost-benefit analysis and the voting rule method. They are based on two different criteria of choice of the MNV tolerated in crowded situations. The CBA is based on the maximisation criterion, and the SCC is computed by considering the individual preferences. The voting rule method is based on the majority voting rule as procedure for obtaining a social preference when individual preferences cannot be estimated. The use of one method rather than the other depends on the data available about the individual preferences.

Assuming that individual preferences about crowding are known, and that the residents' SCC is the limiting factor, we have presented a CBA model in which the site SCC is the result of a compromise between the residents' and visitors' SCCs. In order to internalise the social losses due to crowding, this model permits the computation of the Pigouvian tax.

The ideal situation is to know the monetary value of the individual preferences. Nevertheless experience shows that, if residents generally have no problem in establishing the MNV tolerated on the site, many of them instead may be incapable of eliciting a monetary value for the correspondent utility. In this case, the MNV tolerated is established by applying the MRM. Through this method, partially or wholly tourism-independent residents are directly asked the MNV tolerated, and the residents' SCC is the MNV tolerated by the majority of them. When marginal social costs are linearly increasing and under certain conditions, the optimum number of visitors, obtained through a maximisation model, is equal to the MNV tolerated by the majority of voters.

References

Bateman I.J. and Willis K.G. (1999), *Valuing Environmental Preferences: Theory and Practice of the Contingent Valuation Method in the US, EU and Developing Countries*, Oxford University Press, Oxford.

Bowen H.R. (1943), The Interpretation of voting in the allocation of economic resources, *The Quarterly Journal of Economics*, 58, pp. 27-48.

Clawson M. and Knetsch J.L. (1978), *Economics of Outdoor Recreation*, John Hopkins University Press, London.

Cicchetti and Smith (1973), 'Congestion, Quality Deterioration and optimal Use', *Social Science Research*, n.2, pp.15-31.

Decleris M. (2003), *The law of Sustainable Development, General Principles*, European Commission, Luxemburg.

De Ruyck, M.C., Soares & A.G., McLachlan, A (1997), Social carrying capacity as a management tool for sandy beaches, *Journal of Coastal Research*, 13(3), pp. 822-830.

Fisher A. C. and Krutilla J. V. (1972), Determination of Optimal Capacity of Resources-based Recreation Facilities, *Natural Resources Journal*, vol. 12, pp. 417-44.

Marzetti Dall'Aste Brandolini S.(2003), *Microeconomia. Un'applicazione al settore turistico*, CLUEB, Bologna.
Marzetti Dall'Aste Brandolini S. and Zanuttigh B. (2003), Economic and Social Valuation of Beach Protection in Lido di Dante (Italy), *Proceedings of the Sixth International Conference on the Mediterranean Coastal Environment*, 2003, Ozhan E. (ed.), vol. I, Ankara, pp. 319-29.
Marzetti Dall'Aste Brandolini S. and Lamberti, (2004), Evaluation of the Recreational Use of Barcola Beach in Trieste (Italy), in Pineda F.D. and Brebbia C.A. (eds.), *Sustainable Tourism*, WIT PRESS, Southampton, pp. 221-30.
Marzetti Dall'Aste Brandolini S. and Mosetti R. (2004), Sustainable Tourism Development and Social Carrying Capacity: a Case-study on the North-Western Adriatic Sea, in Pineda F.D. and Brebbia C.A. (eds.), *Sustainable Tourism*, WIT PRESS, Southampton, pp. 211-20.
Medoro Manuela (2004-5), Sviluppo sostenibile e capacità di carico turistica: un caso di studio, Laurea thesis, co-ordinator Prof. Marzetti S., University of Bologna.
Mueller D.C. (1979), Public Choice, Cambridge University Press, Cambridge.
O'Reilly A.M. (1986), Tourism carrying capacity. Concept and issues, *Tourism Management*, December, pp. 254-258.
Penning-Rowsell E.C., Green C.H., Thompson P.M., Coker A.M, Tunstall S.M., Richards C. and Parker D.J. (1992), "The Economics of Coastal Management: a Manual of Benefit Assessment Techniques" (Yellow Manual), Belhaven Press, London.
Price C. (2000), Valuing of Unpriced Products: Contingent Valuation, Cost-benefit Analysis and Participatory Democracy, *Land Use Policy*, 17, pp. 187-96.
Rawls J. (1971, revised 1999), *A Theory of Justice. Revised edition*, Oxford University Press, Oxford.
Saveriades A. (2000), Establishing the Social Carrying Capacity for the Tourist Resorts of the East Coast of the Republic of Cyprus, *Tourism Management*, 21, pp. 147-156.
Seidl I. and Tisdell C. A. (1999), Carrying capacity reconsidered: from Malthus' population theory to cultural carrying capacity, *Ecological Economics*, 31, pp. 395-408.
Vitali E. (2002-3), Turismo sostenibile: le conseguenze economiche dell'affollamento a Marina di Ravenna.
World Tourism Organisation (1998), *Guide for Local Authorities on Developing Sustainable Tourism*, A Tourism and Environment Publication, World Tourism Organization.
- (2004), *Indicators of Sustainable Development for Tourism Destinations. A Guidebook*, World Tourism Organisation, Madrid.

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(lxvii) This paper has been presented at the international conference on “Tourism and Sustainable Economic Development – Macro and Micro Economic Issues” jointly organised by CRENoS (Università di Cagliari e Sassari, Italy) and Fondazione Eni Enrico Mattei, and supported by the World Bank, Sardinia, September 19-20, 2003

(lxviii) This paper was presented at the ENGIME Workshop on “Governance and Policies in Multicultural Cities”, Rome, June 5-6, 2003

(lxix) This paper was presented at the Fourth EEP Plenary Workshop and EEP Conference “The Future of Climate Policy”, Cagliari, Italy, 27-28 March 2003

(lxx) This paper was presented at the 9th Coalition Theory Workshop on "Collective Decisions and Institutional Design" organised by the Universitat Autònoma de Barcelona and held in Barcelona, Spain, January 30-31, 2004

(lxxi) This paper was presented at the EuroConference on “Auctions and Market Design: Theory, Evidence and Applications”, organised by Fondazione Eni Enrico Mattei and Consip and sponsored by the EU, Rome, September 23-25, 2004

(lxxii) This paper was presented at the 10th Coalition Theory Network Workshop held in Paris, France on 28-29 January 2005 and organised by EUREQua.

(lxxiii) This paper was presented at the 2nd Workshop on "Inclusive Wealth and Accounting Prices" held in Trieste, Italy on 13-15 April 2005 and organised by the Ecological and Environmental Economics - EEE Programme, a joint three-year programme of ICTP - The Abdus Salam International Centre for Theoretical Physics, FEEM - Fondazione Eni Enrico Mattei, and The Beijer International Institute of Ecological Economics

(lxxiv) This paper was presented at the ENGIME Workshop on “Trust and social capital in multicultural cities” Athens, January 19-20, 2004

(lxxv) This paper was presented at the ENGIME Workshop on “Diversity as a source of growth” Rome November 18-19, 2004

(lxxvi) This paper was presented at the 3rd Workshop on Spatial-Dynamic Models of Economics and Ecosystems held in Trieste on 11-13 April 2005 and organised by the Ecological and Environmental Economics - EEE Programme, a joint three-year programme of ICTP - The Abdus Salam International Centre for Theoretical Physics, FEEM - Fondazione Eni Enrico Mattei, and The Beijer International Institute of Ecological Economics

(lxxvii) This paper was presented at the Workshop on Infectious Diseases: Ecological and Economic Approaches held in Trieste on 13-15 April 2005 and organised by the Ecological and Environmental Economics - EEE Programme, a joint three-year programme of ICTP - The Abdus Salam International Centre for Theoretical Physics, FEEM - Fondazione Eni Enrico Mattei, and The Beijer International Institute of Ecological Economics.

(lxxviii) This paper was presented at the Second International Conference on "Tourism and Sustainable Economic Development - Macro and Micro Economic Issues" jointly organised by CRENoS (Università di Cagliari and Sassari, Italy) and Fondazione Eni Enrico Mattei, Italy, and supported by the World Bank, Chia, Italy, 16-17 September 2005.

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