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The Economics of Local Tourist Systems

Summary

In this paper we analyse the Local Tourist System (LTS) as a particular case of Marshallian Industrial District. The LTS allows the identification of more effective policy tools for managing tourism. First, through the concept of LTS, the policy maker can take into account the complexity of tourism, characterised by a strong heterogeneity of goods, services and subjects involved; second, LTS helps promote a stronger co-ordination between the public and the private sector, by identifying a homogeneous territory and recognising its importance in tourists' decisions; third, through the LTS the policymaker can analyze the externalities and promotes the idea of collaborating networks in a context of local development. In the LTS framework, the *anticommon* problem can be analysed and contrasted. As the tourist has to buy different but intertwined goods which compose the holiday package, the failure in one of the markets can lead to the overall failure of the package. A LTS policy has to: i) co-ordinate the price policy of the different firms supplying “single components” of the tourist product; ii) fix the price of the whole product; iii) impute a price to each component. We demonstrate that, through price policy co-ordination and under general conditions, the LTS can increase the size of tourism and the firms’ profits, thereby reaching a more effective and efficient target in tourism policy. The recent introduction of LTS in the Italian legislation can be seen as a positive attempt of improving co-ordination in a complex sector such as tourism.

Keywords: Local tourist systems, Tourism policy

JEL Classification: L83, Q26

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1. Introduction

The theoretical approach to Tourism Economics is based on the systemic nature of tourism, stemming both from the heterogeneity of the tourist package, and from the existing complex interactions among firms, tourists and residents. The tourist product is composed by several heterogeneous but complementary goods and services supplied by firms belonging to different industries which are mainly, but not exclusively, located in the tourist destination.

Recently, this systemic nature has also been recognised by the Italian legislation (*Legge Quadro sul Turismo*, No. 135/2001) by means of the creation of an economic policy instrument, namely *Local Tourist System*:

> "We call local tourist systems, homogeneous or integrated tourist environments, which comprise territories also belonging to different regions, and which are characterized by the integrated supply of cultural, environmental goods and tourist attractions, including typical agricultural and local handicraft products, or those characterised by a widespread presence of individual or associated tourist firms" (National Tourist Law Reform, *Law 29 March 2001 No. 135*, Our Translation).

Moving from the assumption that a tourist firm has some specific characteristics which distinguish it from other typologies of firm, on one hand such a public intervention in the tourist sector assures support and development to tourist firms but, on the other hand, opens up potential consequences on market competition and equilibrium.

The systemic nature of tourism and the identification with its geographical representation, that is, the destination, calls for the introduction of what we can call *Local Tourist System* (LTS). The LTS, as a matter of fact, highlights a potential *trade-off* problem: on one hand they potentially increase effectiveness of the "tourist system" as a whole, by raising their competitiveness with respect to other tourist destinations; on the other hand, they bring about a possible increase in prices and a fall in demand. These consequences are due to the fact that the LTS shares some similarities to both the *Industrial District* (ID) model, that complies with firms' tendency of localizing in the same region,[1] and the *Cultural District* (CD) model based on the integration in the same region (that can be of very different sizes, from metropolitan to neighbourhoods) of artistic and cultural activities that, given the territorial identification, acquire their own idiosyncrasy.[2]

Each type of district aims to increase the efficiency of production and promotes the overall development of the local territory[3] (wherein the territory can be identified with the municipality, the county or the region); however – as it will be shown – although there are common goals, there are relevant differences, too.

Therefore, for the theoretical analysis, a model which allows to emphasize the differences and the similarities between LTS, ID and CD has to be introduced. This will be done in the Section 2, where these three different forms of district are introduced and analyzed in terms of prices, profits

[1] Among the several works on industrial districts, see Becattini (1989 and 2000). Industrial districts are very relevant to the Italian economy, whose industrial organisation, particularly in the Centre-North, is characterised by a high number of small and medium size firms which are geographically located in limited and hyper-specialised territories. Such a characteristic is considered one of the successful features of the Italian economic development of the last decades. Among the most known industrial districts, footwear in the Marche region, Sassuolo and Carpi pottery, Prato textiles, iron rods of Brescia, furniture factory in Brianza, eyeglasses in Cadore have to be mentioned as few of the many examples.

[2] On this point see Cuccia and Santagata (2003), and Santagata (2004). The development of the cultural *filière* as a possible (economic) specialisation of a geographical area is due to the Greater London Council case, based upon the integration between cultural activities and relevant sectors of the tourist system. The birth of CD may be a spontaneous process, as in the West End of London, the Greenwich Village in New York or the Rive Gauche in Paris; else, they may be the result of a development program or an urban refurbishment, as in Glasgow or in the Museum Quarter of Vienna (see Candela and Scorcu, 2004).

[3] Someone calls them "territorial policies" and especially "territorial policies for tourism" (Costa *et al.*, 2001), pp. 38-39.

and local population welfare – will be outlined. In Section 3, the reasons for State intervention in LTS will be analyzed. The focus will be, in particular, on coordination failures since, due to the systemic nature of the tourist good, an *anticommon* puzzle, similar but specular to the *common* one, arises. Section 4 outlines the economic policy discussion.

2 A simplified model of districts

2.1 Definitions and symbols

In order to study the theoretical aspects of industrial districts (ID), cultural districts (CD) and Local Tourist Systems (LTS), a simplified model with two regions, $k = 1, 2$, and two goods, $j = x, y$, has to be introduced. Moreover, two working hypothesis as regards geographical organisation of production, has to be considered:

a) *non systemic production*: Region 1 only produces good x, with $y_1 = 0$, while region 2 only produces good y, with $x_2 = 0$;

b) *system*: the whole Region (1,2) produces both goods, and it is defined a system.

Assuming that every externality of production is being internalized by the local policy maker, the group of firms, which coincides with the region itself, can be considered a regional monopolist.

The local demand for goods x and y, approximated in a linear and separable form, in the case of non systemic production, is:

$x = f(p_x) \approx a - bp_x$ demand for good x, with price p_x [1a]

$y = g(p_y) \approx m - np_y$ demand for good y, with price p_y. [1b]

Three district typologies previously are introduced.

A) *The Industrial District*. In the ID constituted by the whole Region (1,2), demand functions for goods x and y – which are represented by eqs. [1] – do not change. However, an effect occurs with respect to costs; namely, *externalities* due to Marshallian agglomeration economies are internalised into the cost function of both goods. Hence, total costs $C_j(.)$ of firms pertaining to a sector also depend on the production level of firms of the other sector, as in eq. [2] that we assume for both goods x and y in these particular specifications:

$C_x = H(x, y) \approx x^2 - y^2$ [2a]

$C_y = K(x, y) \approx y^2 - x^2$ [2b]

B) *The Cultural district*. On the contrary, if Regions (1,2) constitutes a CD, there is a change in demand for goods x and y with respect to case of separation between Regions 1 and 2. This is due to the idiosyncratic effect stemming from the quality surplus identified into the cultural good. Effects on the cost side, on the contrary, can be ignored since externalities are a typical industrial effect, not a characteristic of cultural production; by promoting the comparison and competition among artists, the CD increases quality and creativity of its own artistic good, but it would not necessarily increase productivity. Therefore, it follows that eqs. [1] can be augmented with by a parameter θ in the consumer's reserve price, as in eqs. [3]:

$x = f'(p_x ; \theta) \approx \theta a - bp_x$ [3a]

$y = g'(p_y ; \theta) \approx \theta m - np_y$ [3b]

where we assume that the effect $\theta > 1$ is common and equal for both goods characterizing the CD.

Since we assumed that interaction does not produce any effect on the production side, cost functions in CD are separated, as in [4] that we assume for both goods *x* and *y* in these particular specifications:

$$C_x = H(x) \approx x^2 \quad [4a]$$
$$C_y = K(y) \approx y^2 \quad [4b]$$

C) *The Local Tourist System*. Tourist demand can be represented by the quantity of goods demanded in the destination by tourists, function of *N*, for example the number of nights (or stays) spent in the destination. Of course, if there are two separate regions, tourists will have at their disposal a tourist good "monotonous" in each region, while the tourist product in LTS will include both goods offered, becoming *heterogeneous*. According to these different hypotheses, we have:

a) tourist demand in Region 1 is: $N_x = A - Bv_1$, with $v_1 = hp_x$, since the region offers in its tourist product just *h* unity of good *x* per night spent;

b) tourist demand in Region 2 is: $N_y = A - Bv_2$, with $v_2 = kp_y$, since the region offers in its tourist product just *k* unity of good *y* per night spent;

c) tourist demand in the LTS composed of Region (1, 2) is: $N_x^{LTS} = \sigma A - Bv_1$ and $N_y^{LTS} = \sigma A - Bv_2$.

Since the region offers a tourist product of higher quality compared to the one supplied by the two separate regions, one can assume that:

$$\sigma > 1 \quad [5]$$

Since LTS firms produce goods (*x* and *y*) that enter into the tourist product, respectively for the amount of *h* and *k*,[4] total demand for each good is the sum of indigenous and tourist demands, which we assume independents.[5] Therefore, the overall demand for goods *x* and *y*, in Regions 1 and 2 respectively, are the following:

$$X = x + hN_1 = f(p_x) + hN_1 = (a + hA_1) - (b + h^2B)p_x \quad [6]$$
$$Y = y + kN_2 = g(p_y) + kN_2 = (m + kA_2) - (n + k^2B)p_y \quad [7]$$

In the LTS composed by the Region (1,2), because of the higher quality hypothesis, local plus tourist demands are:

$$X = x + hN_x^{LTS} = f(p_x) + hN_x^{LTS} = (a + h\sigma A) - (b + h^2B)p_x \quad [6a]$$
$$Y = y + kN_y^{LTS} = g(p_y) + kN_y^{LTS} = (m + k\sigma A) - (n + k^2B)p_y \quad [7a]$$

Obviously, since the tourist product is a combination of different goods, local firms enjoy Marshallian agglomeration economies; hence, the positive externality effect on production costs occurs in the LTS, as well as within the ID. Therefore, total production costs of firms of one sector also depend on the production of the other sector, confirming for the LTS the same cost structure [2a] and [2b] of the ID, for which we assume the same specification:

[4] An example might illustrate this assumption. If the good *x* is the "board", p_x is the price of daily board price and includes two meals a day. We can assume that tourists consume one meal per day in a restaurant (for instance, in case of a "half-board" stay, because the other meal is already included in the lodging): the demand $N_1 = A_1 - Bv_1$, with $v_1 = hp_x$, takes on, in that case, the value $h = ½$. The overall demand $X = x + hN$ is consequently made up by a local component (*x*) and by the tourist component given by nights spent *N* weighted for $h = 1/2$ taking into consideration that tourists consume just one meal per day and not two meals.

[5] That is, we leave out externalities between tourists and residents (see Candela, Castellani and Dieci, 2004).

$H = x^2 - y^2$; $K = y^2 - x^2$.

All the key elements to assess the optimal policy of ID, CD and LTS are at a glance, since regions can be considered as monopolistic firms where the policy maker aims at maximising the overall profit. Moreover, we can also assess the welfare effect on the local community of each of the three cases considered. The simplest way to do so it is to introduce the *i-th* representative agent's utility function, a Cobb-Douglas, defined on both goods *x* and *y*:

$$U_i = \Theta_i x_i^{\alpha} y_i^{1-\alpha} \qquad [8]$$

where $0 < \alpha < 1$, and $\Theta_i > 0$ is a quality parameter which measures the satisfaction that the *i-th* agent gets from the goods. Given disposable income Y_i and prices p_x and p_y, the consumer maximises eq. [8] by allocating a fixed share of his own income to each good, according to the elasticity of the utility function:[6]

$$U_i = \Theta_i(\alpha Y_i / p_x)^{\alpha}[(1-\alpha)Y_i / p_y]^{1-\alpha} = \Theta_i Y_i (\alpha / p_x)^{\alpha} [(1-\alpha) / p_y)^{1-\alpha}$$

To estimate the change in welfare for the *i-th* agent, we compute the total differential of the U_i:

$$dU_i = (U_i / \Theta_i)d\Theta_i + (U_i / Y_i)dY_i - \alpha(U_i / p_x)dp_x - (1-\alpha)(U_i / p_y)dp_y \qquad [9]$$

2.2 Industrial regions and industrial district

Let us consider model A of previous section, for industrial regions, organised or not as industrial districts, and compute market equilibria and welfare of the local population in the different cases.

Referring to the more general case of an *Industrial district (1,2) producing goods x and y*, production goal for the ID coincides with the joint profit maximisation of both firms which, being a district, avoid the market failure by internalizing the externality effect:

$$\max_{px,py} \Pi_{12} = xf(p_x) + yg(p_y) - H(x, y) - K(x, y) = \\ = ap_x - bp_x^2 + mp_y - np_y^2 - (x^2 - y^2) - (y^2 - x^2) \qquad [10]$$

If *Region 1 produces only good x* (for $y \equiv 0$, $K(.) \equiv 0$) the production goal for Region 1 reduces to the profit maximisation of firms producing good *x*:

$$\max_{px} \Pi_1 = ap_x - bp_x^2 - x^2 \qquad [10a]$$

If *Region 2 produces only good y* (for $x \equiv 0$, $H(.) \equiv 0$) the production goal for Region 2 reduces to the profit maximisation of firms producing good *y*

$$\max_{py} \Pi_2 = mp_y - np_y^2 - y^2 \qquad [10b]$$

From the first order conditions of eqs [10] we obtain the prices of regions:

- in Region 1: $p_x = a / 2b + x$
- in Region 2: $p_y = m / 2n + y$
- in the ID (1, 2): $p_x^{ID} = a / 2b$ and $p_y^{ID} = m / 2n$

[6] The Cobb-Douglas has constant utility elasticities therefore the consumer spends for each good a constant income share.

Obviously the emergence of the ID brings a reduction in prices with respect to the non systemic production; $p_x > p_x^{ID}$ e $p_y > p_y^{ID}$, and hence an increase in the quantity of the two goods supplied by the market.

Such results are due to the positive *externality effect on both production costs* stemming from geographical agglomeration, an effect that can not be internalised if the two industrial regions are separated and independent.

With respect to the welfare effect, eq. [9] shows that consumers always gain by the emergence of the ID, since the lower prices and the consequent increase in quantity is a sufficient condition bringing to (with $d\Theta_i = dY_i = 0$) an increase in the consumer indirect utility level, $dU_i > 0$.

2.3 Cultural regions and cultural district

Let us consider model B of section 2.1, for regions which can be either organised or not as cultural districts, and compute market equilibrium and welfare of the local population in the different cases.

In the case of the *Cultural district (*1,2*) producing goods x and y under the same brand*, the production goal for the CD is the joint profit maximisation of (cultural) firms, which discount a positive quality effect θ on their respective products, recognised as parts of the same cultural package:

$$\text{Max}_{px,\,py}\ \Pi_{12} = xf'(p_x) + yg'(p_y) - H(x) - K(y) = \theta a p_x - b p_x^2 + \theta m p_y - n p_y^2 - x^2 - y^2 \qquad [11]$$

If *Region 1 specializes in cultural cultural good x* (for $y \equiv 0$, $K(.) \equiv 0$ and $\theta = 1$) the previous expression reduced to:

$$\max_{px}\ \Pi_1 = a p_x - b p_x^2 - x^2 \qquad [11a]$$

whereas if *Region 2 specializes in good y* (for $x \equiv 0$, $H(.) \equiv 0$ and $\theta = 1$) the corresponding expression is:

$$\max_{py}\ \Pi_2 = m p_y - n p_y^2 - y^2 \qquad [11b]$$

From the first order conditions of eqs [11] we obtain the prices of regions and CD:

- in Region 1: $p_x = a / 2b + x$
- in Region 2: $p_y = m / 2n + y$
- in the CD (1, 2): $p_x^{CD} = \theta a / 2b + x$ and $p_y^{DC} = \theta m / 2n + y$

In this case the emergence of the CD brings about an increase in prices with respect to the non systemic production, $p_x < p_x^{CD}$ e $p_y < p_y^{CD}$, due to *the idiosyncratic effect recognised for cultural goods of the district*. In the CD, prices increase as a result of the quality improvement, $dp_x > 0$ e $dp_y > 0$, hence bringing about a reduction in the consumer's utility. However, the quality improvement brings about an increase in utility, $d\Theta_i > 0$. Then, in case income remains unchanged, $dY_i = 0$, consumers gain from CD only if the following condition is verified:

$$(U_i / \Theta_i)\, d\Theta_i > \alpha (U_i / p_x)\, dp_x + (1 - \alpha)(U_i / p_y)\, dp_y \qquad [12]$$

Nevertheless, [12] is often the expected outcome, since it is the micro-economic precondition supporting the assumption that the CD "protects" the market for cultural goods. If [12] is not verified, the representative consumer would "reject" the district organisation and demand functions

[3a] and [3b] would show $\theta < 1$. Therefore, the existence of a CD is likely to be related to an higher consumer's welfare.

2.4 Tourist-industrial destinations and Local Tourist Systems

Consider now model C in section 2.1, for regions which can be either organised or not as Local Tourist Systems. The goal of *Local Tourist System (*1,2*)* is profit maximisation of the joint production of goods *x* and *y*, supplied to both tourists and residents:

$$\max_{px,py} \Pi_{12} = Xp_x + Yp_y - H(X, Y) - K(X, Y) =$$
$$= (a + h\sigma A)p_x - (b + h^2B)p_x^2 + (m + k\sigma A)p_y - (n + k^2B)p_y^2 - X^2 + Y^2 - Y^2 + X^2 \qquad [13]$$

If we have the *Tourist-industrial region* 1 ($Y \equiv 0$, $K(.) \equiv 0$) the overall goal for Region 1 is profit maximisation from the production of good *x*, supplied to tourists and residents:

$$\max_{px} \Pi_1 = (a + hA)p_x - (b + h^2B)p_x^2 - X^2 \qquad [13a]$$

whereas in the *Tourist-industrial region* 2 ($X \equiv 0$, $H(.) \equiv 0$) the overall goal is profit maximisation from the production of good *y*, supplied to tourists and residents:

$$\max_{py} \Pi_2 = (m + kA)p_y - (n + k^2B)p_y^2 - Y^2 \qquad [13b]$$

From the first order conditions of eqs [13] we obtain the prices of tourist-industrial regions and LTS:

- in Tourist-industrial region 1: $p_x = [(a + hA) / 2(b + h^2B)] + X$
- in Tourist-industrial region 2: $p_y = [(m + kA) / 2(n + k^2B)] + Y$
- in the LTS (1, 2): $p_x^{LTS} = (a + h\sigma A) / 2(b + h^2B)$ and $p_y^{LTS} = (m + k\sigma A) / 2(n + k^2B)$

In this case the LTS does not produce any certain effect on prices, with respect to the two independent destinations. In fact, the following differences are not univoquely defined:

$$p_x^{LTS} - p_x = hA(\sigma - 1) / 2(b + h^2B) - X$$
$$p_y^{LTS} - p_y = kA(\sigma - 1) / 2(n + k^2B) - Y$$

since, for eq. [5], $\sigma > 1$. This conclusion stems from a twofold effect of LTS: on one hand, agglomeration economies reduce the average cost of goods; on the other hand, the *quality improvement in the tourist product brought about by its completion* increases tourist demand.

Therefore, the LTS shows similarities to both ID (the tourist good is a bundle of goods that enjoys the advantages of external returns to scale) and CD (the tourist good can be assimilated to a cultural good and hence it takes profit from the idiosyncratic image of the destination).[7] The LTS is therefore a complex system: it is not only an ID, since the territorial aggregation also has an effect on the demand side; it is not only a CD, since the aggregation also has an effect on the average costs of production. Therefore, the LTS does not provide neither a unique result on the price system, nor – as we now highlight – on total welfare of local population.

In principle, we have to distinguish two cases: if the LTS brings about a price reduction, the local consumer – as in the ID case – surely takes advantage of it. But if prices increases, the change in utility of the agent *i* depends on whether or not she takes part in the distribution of profits generated by tourism itself; in fact if we assume that resident *i.th* of the destination, which demands

[7] Nevertheless, unlike industrial districts, tourism districts need a widespread supply also of cultural and environmental goods, as well as tourist attractions, typical crafts and agricultural products, etc.

are [1a] and [1b], do not consume the local tourist product, she do not take advantage from its quality improvement, $d\Theta_i = 0$.

Alternatively, if the representative agent receives income from the Local Tourist System, $dY_i > 0$, she will have an increase in her own indirect utility if:

$$(U_i / R_i)dY_i > \alpha(U_i / p_x)dp_x + (1 - \alpha)(U_i / p_y)dp_y \qquad [14]$$

Otherwise, if the resident gets a job in some other sector and does not get any income from the Local Tourist System, $dY_i = 0$, there exists not such a condition to make eq. [9] positive: the local consumer who does not take part in the distribution of income generated by tourism – or who receives an insignificant share such that eq. [14] would not be fulfilled – does not get any improvement from the LTS and suffers a reduction in his welfare, $dU_i < 0$.

To sum up, while in our framework ID increases consumer's welfare, and while we may suppose that CD is likely to produce an increase in welfare, with respect to LTS the answer is not clear. When LTS is associated with an increase in prices, the welfare change is not uniquely defined and *local families' gains depend on the way income, generated from extra-tourism attracted by the better quality of the tourist product in the destination organised as a LTS,*[8] *is distributed*.

3. The state role in LTS: coordination of tourist firms

3.1 The role of the destination authority

Public intervention in the tourist sector is needed for two fundamental reasons: i) to finance tourist public goods: those structures and infrastructures needed to complete the tourist product and to increase the competitiveness of the whole destination and for which the private market fails;[9] ii) to solve a potential coordination problem arising when private firms supply different goods and services, that compose the whole tourist product. This latter issue, which can be considered an *anticommon* problem, is analysed in this section, with particular reference to the role that the public authority of the tourist destination may play.

We develop a very simple model. In the destination there are just two types of firms: hotels, offering accommodation but any board, and restaurants, offering board, but which are not in a position to offer accommodation. Under these conditions, tourists intending to spend a holiday in the destination have to buy services from both firms, which can individually exclude the tourists by denying them board or accommodation. In the tourism sector, whose product combines heterogeneous goods supplied by various and different firms, this situation easily occurs. This condition is known as *anticommon*, a situation in which there is property fragmentation[10] – opposed to the *common* condition, characterised by the lack of property rights.[11]

[8] This rationale leads to the issue of tourist *enclaves* and to the income distribution of local communities in developing countries specialized in tourism. We know that these communities do not enjoy the advantages of the tourist multiplier, but we have now demonstrated that they may also suffer a damage from the increase in prices due to tourist arrivals. Nevertheless, this effect may also occur in developed country destinations: families of local workers employed in sectors which are not connected to tourism do not get any additional income; on the contrary, they may suffer the increase in prices of, for example, real estates and building lands. Hence, the LTS leads us directly to the inequality issue and, from here, to the problem of social sustainability of the development model based on tourist specialization.

[9] See Candela and Figini (2005), chap. 11.

[10] Obviously, this problem arises to where different firms produce "components" which contribute to the production of the final good.

[11] The *anticommon* concept has been introduced by Michelman (1982) and has been developed by Heller (1998 and 1999). See Parisi *et al.* (2000) and Parisi *et al.* (2004). The *common* good is a good for which property rights are not precisely defined, being this way at everyone's disposable (Hardin 1968).

If p_a and p_b are respectively the accommodation and the board price, the tourist product, composed by one unit of each service per day, will have the price v equal to $v = p_a + p_b$. Tourist demand is expressed by the number of nights spent N and, in this case, can be considered equal to:

$$N = a - v = a - p_a - p_b$$

If we assume, by the sake of simplification, that production costs are null, the profit maximisation problem for the accommodation and restaurant firms are, respectively:

$$\max_{pa} \pi_a = p_a N = p_a(a - p_a - p_b) \quad [15]$$
$$\max_{pb} \pi_b = p_b N = p_b(a - p_a - p_b) \quad [15a]$$

and the corresponding first order conditions from which we get the accommodation equilibrium and the board equilibrium prices are:

$$p_a = (a - p_b) / 2 \quad [16]$$
$$p_b = (a - p_a) / 2 \quad [16a]$$

We can solve system [16] and [16a] by substitution and, in the specification of our example, we get the following equilibrium prices:

$$p_b^* = p_a^* = a / 3 \quad [17]$$

Therefore, a tourist demanding the tourist product N supplied by the destination, and composed by one unit of accomodation and board per day, pays a total price v equal to:

$$v^* = 2a / 3 \quad [18]$$

which implies a quantity level of equilibrium equal to $N^* = a / 3$. In this situation, firms get the following profits:

$$\pi_a^* = \pi_b^* = (a / 3)(a / 3) = a^2 / 9 \quad [19]$$

Can there be any improvement from this situation? Let us assume now that there is a unique firm offering board and accommodation at the same time, eventually coordinated by a destination authority, that assume the role of a policy maker for tourism sector. That is as much as to say that the supply problem can be analysed focussing on the profit maximisation of the whole destination. By considering the same demand function $N = a - v$ we get:

$$\max_v \pi = vN = v(a - v) \quad [20]$$

and from the first order condition we get the equilibrium price for the destination is:

$$v^{**} = a / 2 \quad [21]$$

Comparing eq. [21] with eq. [18], we note that $v^* > v^{**}$ whereas $N^{**} = a / 2 > a / 3 = N^*$. Therefore, *without the coordination of the destination authority, the price of the tourist product is as a whole too high* and consequently tourist nights spent in the destination are too low.

Since we assume that both hotels and restaurants of this example are symmetric as regards costs (both null), the policy maker of the destination can decide the optimal structure of prices for

both accommodation and board, $p_a^{**} = p_b^{**} = a / 4$. These *posted prices* imply, by means of eqs. [15], that profits for both firms are:

$$\pi_a^{**} = \pi_b^{**} = (a / 4)(a / 2) = a^2 / 8 \qquad [22]$$

Profits shown in eq. [22] are obviously higher that those in eq. [19] since $a^2 / 8 > a^2 / 9$; we can conclude that in the LTS, when the local government solves the coordination problem by imposing (or proposing) the optimal price structure, both the accommodation and the catering firms increase their profits, together with a positive effect on tourists, who can gain from lower prices.

Therefore, in the LTS, the policymaker should: i) coordinate firms producing the goods which enter the tourist package; ii) fix the price of the whole product; iii) impute the price for each component of the tourist product, such as to suggest a coordination of posted prices. Coordination is needed since the tourist product turn out to be an *anticommon*, in which property is shared among several firms supplying different parts of the final good. In other words, there is an excess of property rights in the economic sense. Coordination intervention by the policy maker leads to both an increase in profits for all firms, and to a greater number of nights spent by tourists.

3.2 The role of the tour operator between the destination authority and the tourist firm

The positive role in solving the coordination problem is not an exclusive prerequisite of the public authority: if the policy maker refuses the coordination responsibility, the *anticommon* problem could find a solution in the establishment of a "centralised" tourist firm: the *tour operator*.[12]

The *tour operator* offers to local firms a "vuoto per pieno" contract at the discounted price $(p_j - d)$, with the same discount d applied to both tourist firms. The "full board" package is offered directly by the tour operator at price v. The non-coordinated equilibrium price constitutes a constraint for the tour operator in determining the contract, which must be accepted by the local tourist firm. Its program is therefore:[13]

$$\max_{v,d} \pi_{to} = vN - (p_a - d)N - (p_b - d)N = (v - p_a - p_b + 2d)N \qquad [23]$$

s.c.

$N = a - v$

$(p_a - d)N \geq a^2 / 9$ participation constraint for the accommodation firm

$(p_b - d)N \geq a^2 / 9$ participation constraint for the restaurant

as $a^2 / 9$ is the profit which the firms will gain in the case of a direct offer to the tourists, without intermediation (and in the case of rent of their full production capacity).

Without the tour operator, the equilibrium price [17] will be $p_a = p_d = a / 3$ and the two different participation constraints collapse into the same inequality. As usual in the agency models, if we assume that the principal gives the agency the minimum acceptable profit, from the constraints we get the (provisional) value of d:

$$d = a / 3 - a^2 / 9(a - v) \qquad [24]$$

Having substitute [24] in the *tour operator* profit function, we obtain:

[12] The *tour operator* signs "insurance" contracts with hotels, restaurants, air companies, etc., which accept a lower but certain price by transferring risk to the tour operator (see Mussoni (2004), Castellani and Mussoni (2004)). Firms accept the coordination role of the tour operator if, although accepting a lower price, they end up with equal or higher profits. Therefore, also the *tour operator* can play a positive role in the LTS, by imposing a private solution – automatic and with no public intervention – to the *anticommon* failure. The analogy with the case of common goods, which " tragedy" may be avoided by giving property rights to either public or private monopoly, is therefore complete.

[13] On the optimal tourist contract in stochastic environment, see Mussoni (2004) and Castellani and Mussoni (2004).

$$\max_v \pi_{to} = v(a - v) - 2a^2 / 9 \qquad [25]$$

The first order condition [25] defines the solution $v_{to} = a / 2 = v^{**}$, the same optimal offer selected by the policymaker (see [21]). However, even if the *tour operator* solution mimics the social optimum, the profit for the two firm is different: by construction the *tour operator* reaps of the whole increase in profits:[14]

$$\pi_a = \pi_b = a^2 / 9 \quad \text{and} \quad \pi_{to} = 5a^2 / 9 \quad \text{being } d = 2a / 9$$

Obviously, several intermediate solutions are possible, but always arises a distributive conflict between the local tourist firm and the tour operator, as this latter agent tries to fill the gap left by the policymaker.

4 Conclusion

Industrial, Cultural and Local Tourist Systems all emerge for one reason: to create an economic advantage due to a geographical integration. Nevertheless, the simple models presented in this paper demonstrate that these common objectives should not hide crucial differences with regard to characteristics, effects and strategies.[15]

The ID arises as a consequence of important positive externalities, in terms of reduction of the average costs enjoyed by firms located in the same area. Firms perceive the advantage of a common localisation, cost reduction and profit increase: economic rationality leads firms to such industrial agglomeration. In the Marshallian perspective, public intervention is unnecessary to manage industrial districts, since congestion and decay of the territory (external diseconomies) would replace economies, making unprofitable the over- localisation in an ID. As ID allow firms to access more efficient production organisations and techniques, they also advantage consumers, who share the average cost reduction by means of a price reduction.

CD, on the contrary, arise from the need of cultural identification of the territory; consequently the territory recognises a idiosyncratic aspect in its cultural product; the CD goal is to make the product promptly recognizable (and certified) by connoisseurs and cultural consumers, therefore increasing their reservation price.[16]

> "One of the institutional conditions that favoured the economic growth of highly integrated territories, has been the assignment of collective property rights on local resources. Collective *property rights* (territorial, product, as well as cultural labels, etc.) are a way to offer efficient economic incentives and better development perspectives to local producers. Furthermore, these collective rights protect from counterfacting and dumping. In the end, they represent a great contribution to the construction of the public perception of the site" (Santagata *et al*., 2004, p. 60. Our own translation).

Nevertheless, the establishment of a CD does not automatically break out as in the ID case. Actually, the CD develops a territorial brand from which all local cultural firms wish to be covered, with the risk of "playing down", through overproduction, the image itself of the cultural district: the

[14] In the more general case the solution requires the Khun-Tucker approach..

[15] The previous quantitative results are not robust, being dependent upon very specific (and ad hoc) assumptions. (separability, specific functional forms,…). A natural extension of this framework should be the computation of a GE model, grounded on strong microeconomic principles. Most of our qualitative results, however, should remain unaffected.

[16] See Candela and Scorcu (2004).

CD typically presents a *common* problem.[17] From this point of view, CD needs public intervention to deal with the distribution of rights to enjoy product brand (Cuccia and Santagata 2003). In the end, CD, if successful, leads to an increase in the consumer surplus, since the positive change in utility induced by a better quality more than compensate for the sacrifice of higher prices.

The LTS comes out from the observation that the tourist product is composed by a bundle of heterogeneous different goods and services, complementing to each other in the tourist destination; hence, the LTS solves production coordination and completion. Compared to other industries, coordination rules are needed in tourism since "no activity is more difficult than the tourist one". However, as shown in this paper, such a combination may not automatically develop, since tourist production presents an *anticommon* problem and the policy maker intervention is needed: LTS needs intervention for its definition and implementation, although also a private intervention by a *tour operator* could solve the problem.

In a LTS the role of the public authority is twofold: coordinate interaction among firms, and complete the tourist product by supplying the infrastructures and services needed.

Since the ultimate effect of LTS on prices – pushed down by agglomeration externalities but pushed up by extra demand in tourism due to higher quality – is not uniquely defined, it may happen that total welfare in the destination depends on the way revenue from tourism is locally distributed.

Table 1 sums up our conclusions; it can be argued that there are more diversities than similarities among the three models of local production organization presented in this paper.

Table 1 – A Comparison of industrial, cultural and Local Tourist Systems

Type of district	Reasons for the birth	Need for public intervention	Rationale for public intervention	Local community welfare
Industrial district	Externalities	No	---	Welfare increases
Cultural district	Product idiosyncrasy	Yes	Remedy to the problem of *commons*	Welfare increases in case of success
Local Tourist System	Goods and services combination	Yes	Remedy to the problem of *anticommons*	Uncertain result depending on the income distribution

ID and CD importance in real world economies has been widely recognised for a long time, but also LTS are gaining importance and highlight the relevance of a policy approach based on the destination. In Italy, a sort of LTS has been introduced by the law, explicitly denominated *Sistema Turistico Locale* (STL) in the National Tourist Act (No. 135 of 2001). STLs represent a policy tool aimed at favouring the integrated development of tourism, by taking into consideration the heterogeneity and complexity of the phenomenon, and by favouring firms aggregation and the public and private linkages.

STLs represent a new way to conceive and administrate the territory aiming at overcoming the existing fragmentations of the Italian territory, enhancing the integration between tourism and other industries, and by looking endogenously for the optimal size of the destination. In opting for the institutional introduction of the STL, the policymaker aims at stimulate the development of tourism even to the detriment of possible drawbacks on competition or, rather, competition between STL is favoured to the detriment of competition between single tourist firms.

[18] Common goods (Hardin, 1968) risk depletion if access is not regulated. To investigate this issue see Balducci *et al.* (2001).

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(lxv) This paper was presented at the EuroConference on “Auctions and Market Design: Theory, Evidence and Applications” organised by Fondazione Eni Enrico Mattei and sponsored by the EU, Milan, September 25-27, 2003
(lxvi) This paper has been presented at the 4th BioEcon Workshop on “Economic Analysis of Policies for Biodiversity Conservation” organised on behalf of the BIOECON Network by Fondazione Eni Enrico Mattei, Venice International University (VIU) and University College London (UCL) , Venice, August 28-29, 2003
(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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