Competition for domestic tourism in the COVID-19 pandemic: a characterization using a contest model*

Juan Antonio Duro
Universitat Rovira i Virgili and ECO-SOS

António Osório+
Universitat Rovira i Virgili and ECO-SOS

Alejandro Perez-Laborda
Universitat Rovira i Virgili and ECO-SOS

Abstract

The COVID-19 has caused a dramatic fall in international tourism demand. Destinations within countries have revised their promotion strategies, intensifying the competition for the domestic market, less affected by mobility restrictions. This paper proposes a contest theory model for characterizing this new context. Two types of destinations, coastal (sun and sand) and rural, compete for the existing demand in terms of promotion spending. The competition is driven by two main factors: the relative strategic advantage of each destination in the international and domestic markets and the strategic value given to each market. The pandemic has likely modified these factors, reducing the traditional advantage of coastal destinations and shifting the valuation towards the domestic market. According to the model, these changes may increase competition for the domestic market, with destinations rising promotion spending even in a context of reduced demand, which is consistent with the empirical evidence.

JEL Classification: Z31, L83, C72

Keywords: Touristic Destinations, tourism promotion, COVID-19 pandemics, contest models.

* Financial support from the GRODE, Generalitat de Catalunya Project SGR2021-00729, and the Spanish Ministry of Science and Innovation Project RTI2018-094733-B-I00 (AEI/FEDER, UE) and PID2019-105982GB-I00 is gratefully acknowledged. The usual caveat applies.
+ Corresponding author: António Osório, Department of Economics; Av. Universitat 1; 43204 – Reus, Spain (Email: antonio.osoriodacosta@urv.cat)

1. Introduction

The COVID pandemic has impacted enormously in the tourism market (Papatheodorou, 2021; Škare et al., 2021; Yang et al., 2020). The interruption of mobility has led to an unprecedented drop in the 2020 global tourism demand of about 74% (UNWTO, 2021a). The estimated decline in international tourism is equivalent to a loss of about 1 billion arrivals and US$ 1.1 trillion in international tourism receipts and an estimated economic loss of over US$ 2 trillion, more than 2% of the world's GDP (UNWTO, 2021b). Destinations have especially encouraged measures to retain/attract domestic tourism to compensate for the volume of international drop-offs (Gössling et al., 2021; Navarro-Jurado et al., 2020; Hall et al., 2020; Kreiner and Ram, 2020). The UNWTO (2020a, 2020b) highlights that domestic tourism is the basis for the recovery.

In this context, destinations inside countries have intensified the competition for national (and proximity) tourists, as the international mobility has been drastically reduced. The promotion spending in the domestic market has increased even in a context of overall demand reduction, which is somehow paradoxical because promotion spending tends to move together with demand. This phenomenon is evident in Southern European countries. In Spain, for example, the different destinations focused the 2020 summer campaign on the domestic market, starting a race to capture domestic tourists. This increasing competition led to an expanding promotion spending with the objective of positioning their brand on this market, which has been widely reported by the press.[1]

Simultaneously, the COVID-19 has also opened significant opportunities for rural tourism. Consumers are giving higher value to open spaces, less willing to visit typically crowded destinations such as coastal (sun and sand) or cities (UNWTO, 2020). In this way, the pandemic has produced a shift in consumer preferences, favoring less populated destinations, such as rural or ecotourism (Zenker and Kock, 2020; Maltseva and Li, 2020; Vashar and Štastná, 2020).

[1]https://www.turismo.gal/espazoinstitucional/actualidade/detallenova?langId=es_ES&content=nova_2135.html&ordRs=4. https://www.lavanguardia.com/vida/20200512/481122429423/granada-lanza-campana-turistica-para-ganar-posiciones-en-el-mercado-nacional.html.
https://www.lavanguardia.com/ocio/viajes/20200511/481089619987/la-junta-disena-una-campana-de-promocion-turistica-para-el-mercado-nacional.html.
https://www.larazon.es/cataluna/20200615/hikmukmbvjbbdenmii673buj6i.html.
https://www.malagahoy.es/provincia/Fuengirola-estrategias-promocion-turistica-nacionales_0_1537346745.html

The increasing importance of the domestic market and the change in the relative advantage of the different destination types may have broken the traditional competition dynamics, increasing competition in the domestic market in a context of a falling and demotivated demand. The question is how to explain these linkages from an analytical point of view, and providing a rationale for the strategic move towards the domestic market.

This paper addresses this question and builds a theoretical framework that can account for these empirical facts. Specifically, the paper proposes a game-theoretical model in which two different destination types within the same country (coastal vs. rural) compete in terms of promotion spending to attract the largest possible share of the domestic and international markets.[2] Destinations are characterized by two fundamental factors: their strategic advantage/disadvantage to attract demand and their strategic value of the domestic and international markets. The destination's market shares are captured by a Tullock's contest success function (Tullock, 1980), which depends on the destinations' promotion efforts, which is costly.

According to the model, the increase in promotion spending in the domestic market is explained by the change in the existing status quo generated by the COVID-19. First, the pandemic has decreased the traditional advantage of coastal destinations over the rural destinations, previously materialized in terms of infrastructures, sun and sand, socialization, and cultural activities (Maltseva and Li; 2020; Vashar and Štastná, 2020; Zenker and Kock, 2020). According to the model, this shift in consumer preferences has favored competition in the domestic market, inducing a “leveling the playing field effect”.[3] Intuitively, the rural destinations increase their spending to attract domestic demand that "would not have come" under other circumstances, even with higher promotion spending. In turn, the coastal destinations also increase promotion spending to retain the shifting domestic demand that "would have remained faithful" if the circumstances were other, even without increasing promotion.

[2] It makes sense to simplify and consider competition between two reference destinations topologies (coastal and rural) for two general markets (domestic and international). The reality and challenges faced by some seaside destinations due to the COVID-19 pandemic are similar to the reality faced by some crowded urban destinations.

[3] This effect has been reported in other contexts like affirmative action and discrimination (Holzer and Neumark, 2000; Mealem and Nitzan, 2016).

Second, the COVID-19 has raised the strategic value of the domestic market. Historically, coastal destinations have found higher strategic value on the international market because they could extract higher returns (Jafari, 1986; Jang and Chen, 2008; Sheldon and Dwyer, 2010). However, the mobility restriction imposed by the pandemic has shifted the strategic value towards the domestic market, less affected by mobility restrictions (Gössling et al., 2021; Hall et al., 2020; Kreiner and Ram, 2020; UNWTO, 2020a; 2020b). The increased strategic value of the domestic market has also induced higher competition for domestic tourists, complementing the decline of the strategic advantage of the coastal destinations. [4]

Overall, the proposed model shows that these two effects led to a competitive war for the domestic market, explaining the escalation in promotion spending in a context of reduced demand, consistent with the empirical evidence.

Up to our knowledge, this is the first study applying contests theory to address strategic competition between touristic destinations, and there are just a few examples of game theoretical approaches to study touristic markets involving promotion decisions (e.g., Tavares et al., 2015; Van Zyl, 2012). In this context, for instance, Zirulia (2011) considers a two-stage Cournot model of competition between and within touristic destinations with vertical and horizontal differentiation. It is found that an increase in competition induces competition for market share, which lowers profits. Our paper also studies competition between destinations, but in terms of promotion spending in a context of falling demand. Candela and Cellini (2006) consider a differential game of competition between destinations in terms of capacity to attract touristic flows. However, those flows are also detrimental to the quality of the destination. Their results guide strategic decisions like the choice between mass- vs. elite-tourism or the optimal degree of product differentiation. See Kuokkanen and Bouchon (2021) for a recent survey and discussion on game-theoretical approaches in the context of revenue management and touristic destinations.

Similarly, contest theory has been widely used to study economic, political, and social problems, but not tourism.[5] The paper offers a novel microeconomic perspective on how

[4] The benefits associated with the domestic market go beyond its anti-cyclical nature, such as distribution (personal and territorial). A helpful review of these aspects can be found in Arbulú et al. (2021).
[5] See Corchón (2007), Corchón and Serena (2018), Konrad (2009) and Vojnović (2015) for surveys of the contest literature.

destinations behave and adapt to a demand shock, such as the COVID-19 in strategic and competitive terms. Nonetheless, the proposed model is general and can be applied to the study of demand shocks other than the COVID-19.

The remaining of the paper is organized as follows. Section 2 describes the model and notation. Section 3 presents the theoretical results. A discussion of the model findings in terms of Southern European countries is presented in Section 4. Finally, Section 5 concludes.

2. Model Setup

Consider two touristic destinations within a country $i = 1,2$ competing for domestic and international tourists $j = D, I$ by spending promotion resources. Ceteris paribus, the destination that allocates the higher promotion spending x_{ij} obtains a higher market share. However, as becomes evident after, other aspects such as shocks may lead to a different outcome.

The distinction between two destinations (coastal vs rural) is made to distinguish between destinations that are clearly losing with the COVID-19 pandemic (which most of them are coastal and urban destinations) and the destinations that might be gaining (or at least not losing so much) with the COVID-19 pandemic (which most of them are rural destinations). In this context, our analysis to coastal destination applies also to urban destinations. In some sense, and with the necessary specificities, those are crowded destinations, which in greater or lesser extent are facing similar realities regarding COVID-19 restrictions.

The Tullock (1980) rent-seeking contest success function is the natural approach to capture this relationship.[6] In our context, the Tullock contest success function does not

[6] Contest theory has found large number of applications in economics and social sciences. For instance, Farmer and Pecorino (1999) consider the application to litigation, in which higher the effort spent by each litigant in argumentation, the greater the chances to win in trial. Similarly, Tullock (1980), Krueger (1974) and Becker (1983) consider rent seeking and lobbying, in which the higher the political lobbying for government benefits or subsidies, the higher the chances of obtain them or winning an election. In innovation, research and patent races, firms or other economic agents perform R&D investments under uncertainty in order to control a technology, gain market share or increase benefits (See Loury (1979), Lee and Wilde (1980) and Dasgupta and Stiglitz (1980) for early contributions). Other applications of contests have been considered in the literature like for example college admission, sports, advertising, war and conflict, etc. Corchón (2007) and Konrad (2009) survey this literature. Nonetheless, all those applications have in common the positive relation between effort, investment or spending and the likelihood of success.

have the usual probabilistic interpretation of success likelihood, but represents the share of destination i in market j:

$$s_{ij} = \frac{\alpha_{ij} x_{ij}}{\alpha_{ij} x_{ij} + \alpha_{-ij} x_{-ij}}, \quad (1)$$

where x_{ij} is promotion spending of destination i on market j, and α_{ij} captures the destination i **strategic advantage or disadvantage** over the other destination $-i$, in terms of the tourists' preferences for market $j = D, I$.

The intuition in the contest success function is that, all the rest constant, the higher the destination i promotion spending, the larger destination i market share. However, the higher the other destination promotion spending, the lower is the destination i market share, and vice versa.[7]

Without loss of generality, let us assume that $\alpha_{ij} \in (0,1)$ and $\alpha_{ij} = 1 - \alpha_{-ij}$ for $j = D, I$.[8] Consequently, if $\alpha_{ij} = 1/2$, no destination has a strategic advantage over the other, while if α_{ij} is larger than ½, destination i has a strategic advantage over destination j (or destination j has a strategic disadvantage over destination i). Analogously, if α_{ij} is smaller than ½, then destination i has a strategic disadvantage over destination j.

Destinations may place different **strategic value** in the domestic and the international market, i.e., $v_{ij} \neq v_{-ij}$ for all j. This possibility increases generality and adds more realism to the model. For instance, destination i might be able to extract a higher return from international tourism than destination j, or it might be that it focuses on the international market for historical or any other reason. For instance, most coastal destinations in the south of Europe find the international market strategically more valuable than the domestic market. On the contrary, rural destinations have historically seen the domestic market strategically more valuable in relative terms.

[7] The same intuition applies to the strategic advantage. All the rest constant, the destination with the largest strategic advantage has the largest market share.

[8] The strategic advantage would emerge from the competitiveness factors of the destinations that, for example, the WEF (2019) elaborates operatively. In this sense, the strategic advantage would depend on the factor endowments and their weights.

Let $v_{iD} \in (0,1)$ and $v_{iD} = 1 - v_{iI}$ for $i = 1,2$. The analysis is made in relative terms, in the sense that if one market has more strategic value, then it is because the other market has less strategic value, and vice versa. Consequently, if v_{iD} is larger than ½, then the domestic tourists market has a higher strategic value than the international tourists' market for destination i. Analogously, if v_{iD} is smaller than ½, then the domestic tourists market has a lower strategic value than the international tourists' market for destination i. If $v_{iD} = 1/2$ both markets have the same strategic value for destination i.

To summarize, α_{ij} measures the relative strategic advantages between touristic destinations, while v_{ij} quantifies the differences in terms of strategic value between tourist markets. Altogether, the **strategic interest** of destination i in market j is the composite of the strategic advantage/disadvantage and the strategic value, i.e., $\alpha_{ij}v_{ij}$ for $i = 1,2$ and $j = D, I$.

We further assume that touristic destinations are not budget-constrained and spend their funding rationally.[9] In this context, destination i objective is to maximize the expected payoff with respect to $x_{iD} \geq 0$ and $x_{iI} \geq 0$, i.e.:

$$\pi_i = s_{iD}v_{iD}M_D + s_{iI}v_{iI}M_I - c_{iD}x_{iD} - c_{iI}x_{iI}, \qquad (2)$$

for $i = 1,2$, where M_j captures the size of market j in absolute terms (or for example the market j tourists' willingness to pay), s_{ij} is given by expression (1) and c_{ij} is the destination i unit cost of promotion in market j.[10]

Note that promotion spending typically has two effects: a market stealing effect from competitors and a market enlarging effect, which may add a positive spillover effect. In this paper, we focus on the market stealing effect and the associated competition between destinations.

[9] The possibility that touristic destinations are budget-constrained in terms of funding and that different destinations might have different budgets requires adding the budget constraint $x_{iD} + x_{iI} = x_i$ to the maximization problem, where x_i is the promotion budget of destination i. However, the results and the message in this paper remain unchanged.

[10] In this paper, the destinations' promotion spending is carried out by the public administration regions, and the competition is between destinations, which in a broad sense are public institutions. In our context, this seems to be the most reasonable and general assumption. Nonetheless, we could have considered that promotion spending is individually carried out by private companies (or even at national level), which might be the case in some situations. In those cases, the analysis would have to consider the firms profit functions and the existence of positive externalities or spillovers from promotion spending, in a different and potentially more complex framework.

Finally, to simplify the analysis, we assume that the two destinations face the same cost of promotion in market j, i.e., $c_{ij} = c_{-ij} = c_j$. This is a natural assumption, as it can be expected that promotion and advertising campaigns in the same market cost the same to both destinations.

3. Model Analysis

After having presented the theoretical model, in this section, we try to understand how a shock like the COVID-19 pandemic affect the destinations' promotion and attraction strategies. In this context, we start by characterizing the obtained equilibrium. Then, in the following section, we integrate the theoretical analysis into the South of Europe reality, using Spain as an example.[11]

In this paper, we look at the COVID-19 pandemic demand shock in more detail. Nonetheless, the proposed model is more general and can be applied to the study other types of demand shocks.

The solution of the system of four first-order conditions resulting from the touristic destinations maximization of expression (2) with respect to the promotion spending in the domestic and international markets, i.e., x_{ij} for $i \in 1,2$ and $j \in D, I$, is given by the following result, written in the most compact and general form.[12]

Proposition 1: *The unique Nash equilibrium solution of the problem (2) is given by:*

$$x_{ij} = \frac{\alpha_{-ij}\alpha_{ij}v_{-ij}v_{ij}^2 M_j}{c_j\left(\alpha_{ij}v_{ij} + \alpha_{-ij}v_{-ij}\right)^2}, \tag{3}$$

[11] We use the south European reality as a reference and to motivate our results. Nonetheless, the proposed model approach is general and can be applied to study the touristic market in other regions of the globe and study shock other than the COVID-19 pandemic.

[12] The second order conditions for the maximum are satisfied.

for $i \in 1,2$, *where* $\alpha_{ij} \in (0,1)$ *and* $\alpha_{-ij} = 1 - \alpha_{ij}$ *are the destination* i *and* $-i$ *strategic advantage/disadvantage in markets* $j \in D, I$, *respectively, and* $v_{ij} \in (0,1)$ *and* $v_{i-j} = 1 - v_{ij}$ *are the destination* $i \in 1,2$ *strategic values for market* j *and* $-j$, *respectively.*

Ceteris paribus, the promotion spending increases with the absolute value of the market (M_j) and decreases with the cost of promotion (c_j). As discussed in the introduction, the most immediate impact of the COVID-19 pandemic was a substantial decline in international demand (M_I) (UNWTO, 2021a; 2021b). The domestic demand (M_D) also decreases, but to a considerably lower extent. These declines have triggered a chain of effects in other market parameters (Papatheodorou, 2021; Škare et al., 2021; Yang et al., 2020), which we will consider in more detail in Propositions 2 to 4.

Proposition 1 also implies that, in terms of promotion spending, the touristic destinations treat the domestic and international markets as if they were independent, except when there are variations in the strategic value v_{ij}. In this case, both markets are interconnected, and the promotion spending may flow from one market to the other because $v_{ij} = 1 - v_{i-j}$.

The following proposition studies the equilibrium in promotion spending when *strategic advantage* changes. The *strategic advantage* captures, to a great extent, the consumer's preferences. COVID-19 pandemic may have reduced the advantage of the coastal sun and sand destinations over rural, making both destination types more even in terms of consumers preferences (Maltseva and Li, 2020; Vashar and Štastná, 2020; Zenker and Kock, 2020).

Proposition 2: *In equilibrium, the destination's* $i = 1,2$ *promotion spending on the market* $j \in D, I$ *(*x_{ij}*) increases when the strategy advantage raises (*α_{ij}*) if* $\alpha_{ij} v_{ij}$ *approaches* $\alpha_{-ij} v_{-ij}$, *and vice versa.*

Recall that the destination i has a strategic advantage over the other destination $-i$ in the market j when $\alpha_{ij} > 1/2$, and disadvantage when $\alpha_{ij} < 1/2$. Moreover, if destination i strategic advantage on the market j increases, the advantage of the other destination in the same market because $\alpha_{ij} \in (0,1)$ and $\alpha_{ij} = 1 - \alpha_{-ij}$ for $j = D, I$.

Consequently, the result states that a change in the relative strategic advantage of one destination in a market raises the promotion spending of the two destinations if the change

makes the destinations more equal in strategic terms. For example, consider that destinations have the same value for market j, i.e., $v_{ij} = v_{-ij}$. As long as a change in α_{ij} places this parameter closer to 1/2 (either from above or from below), the two destinations increase the promotion spending in market j (recall that if $\alpha_{ij} = 1/2$ no destination has a strategic advantage over the other in market j).

Intuitively, there is a *"leveling the playing field effect"* that increases competition between destinations. The disadvantageous destination increases the promotion spending because it feels that now it can attract tourists that "would not come", even if its promotion spending would have been higher. Simultaneously, the relatively advantaged destination, which now sees its comparative advantage to go down, also increases its spending to retain the demand that otherwise "would remain faithful", even without increasing promotion. Thus, the model predicts a competitive war for consumers in terms of promotion efforts if a shock makes the two destinations more even in terms of strategic interest for that market.

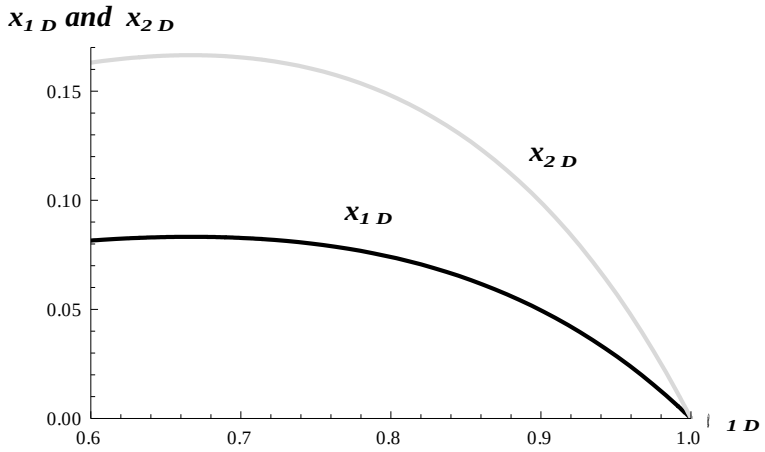

Figure 1: Illustration of Proposition 2. The figure shows the increase in the promotion spending of the two destinations in the domestic market as the strategic advantage of the two destinations in that market become close to each other (i.e., when it falls from 1 to 2/3).

Figure 1 illustrates Proposition 2. The figure depicts the promotion spending of the two destinations in the domestic market as a function of their strategic advantage. The destination 1 is in the black line and destination 2 is in the grey line. The figure represents the case where $v_{1D} = 1/3$ and $v_{2D} = 2/3$, i.e., the touristic destination 1 has a lower

strategic value for the domestic tourists' market than destination 2, and it assumes that $M_D = M_I = c_D = c_I$ and $\alpha_{1I} = \alpha_{2I} = 1/2$ for illustrative purposes (these specific values are not relevant for the point made in the figure).

Now, suppose that α_{1D} falls from 1 to 2/3 (i.e., the strategic advantage of destination 1 over destination 2 decreases). In this interval, we observe that both touristic destinations promotion spending increase as α_{1D} moves from 1 to 2/3 from above as stated in Proposition 2. Below this point their promotion spending falls again because their strategic interests separate again. Note that in this example, the destination 2 promotion spending is higher because it has a higher strategic value for the domestic tourists' market than destination 1.

The COVID-19 pandemic has introduced flight and mobility restrictions, which may have reduced the strategic value of the international market relative to the domestic (Gössling et al., 2021; Hall et al., 2020; Kreiner and Ram, 2020; UNWTO, 2020a; 2020b). In the following result studies the touristic destinations equilibrium promotion spending when the strategic value of the markets changes.

Proposition 3: *In equilibrium, the touristic destination $i = 1,2$ promotion spending in the market $j \in D, I$ (x_{ij}) increases when the own strategic value for market j increases (v_{ij}).*

This result states that as the strategic value of destination i for market j increases, the destination i increases its investment in promotion in that market. There is a positive relation between strategic value and promotion spending.

Proposition 3 also helps explain the apparent paradox that promotion spending in the domestic market has increased in the context of falling demand. Although the magnitude of the domestic market has decreased due to the pandemic, its strategic value *relative* to the international market has increased, and thus the amount spent in promotion in the domestic market.

The last proposition (Proposition 4) indicates that the destination's promotion spending in each market is not independent of the other destinations' strategic value.

Proposition 4: *In equilibrium, the touristic destination* $i = 1,2$ *promotion spending in the market* $j \in D, I$ (x_{ij}) *increases when the other destination* $-i$ *strategic value for market* j *increases* (v_{-ij}) *if* $\alpha_{-ij} v_{-ij}$ *approaches* $\alpha_{ij} v_{ij}$*, and vice versa.*

This result implies that destination i promotion spending is not independent from the other destination $-i$ strategic value. This proposition shares some similarity with Proposition 2, but the result is driven by changes in the strategic value of the other touristic destinations (v_{-ij}) instead of the strategic advantage. [13]

For instance, ceteris paribus, if no destination has a strategic advantage over the other in market j, i.e., $\alpha_{ij} = \alpha_{-ij} = 1/2$, then as v_{-ij} approaches ½, either from above or from below, the competition between both touristic destinations in terms of promotion spending increases. In other words, as the strategic value of the destination with lower strategic value approach the other destination strategic value from below (or the strategic value of the destination with higher strategic value approach the other destination strategic value from above), the competition between destinations in terms of promotion spending increases. The reason is that destinations become more similar in terms of strategic interest for that market.

Figure 2 illustrates Propositions 3 and 4. As before, the destination 1 is in the black line and destination 2 is in the grey line. Without loss of generality, let $M_D = M_I = c_D = c_I$ and $\alpha_{1I} = \alpha_{2I} = 1/2$ (these values ease calculations and are not relevant for the point made in the figure).

[13] Note that, unlike α_{ij}, v_{ij} is independent of v_{-ij} and vice versa, because $v_{ij} = 1 - v_{i-j} \in (0,1)$.

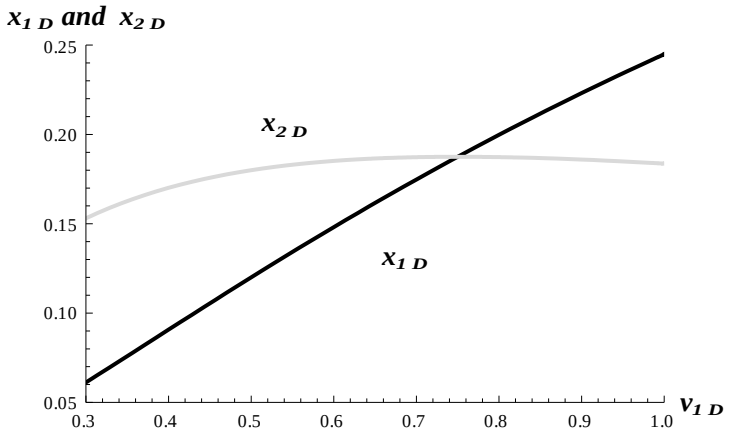

Figure 2: Illustration of Propositions 3 and 4. An increase in the strategic value of Destination 1 in the domestic market increases the promotion spending of Destination 1 in this market, as stated in Proposition 3. Destination 2 promotion spending raises only if the increase makes the strategic interest of the two destinations on this market closer to each other because of Proposition 4.

Suppose also that no destination holds a strategic advantage for the domestic market over the other, i.e., $\alpha_{1D} = \alpha_{2D} = 1/2$, but that destination 2 places larger strategic value on the domestic market (e.g. $v_{1D} = 1/3$ and $v_{2D} = 3/4$). In this case, destination 2 has a higher strategic interest in the domestic market and promotes this market more than destination 1. Now, suppose that destination 1 strategic value in the domestic market v_{1D} increases from 1/3 to 3/4, and as a result, its strategic interest in this market also rises. Consequently, as v_{1D} approaches to 3/4 from below, the strategic interest that both destinations place in the domestic market gets closer to each other, and their promotion spending in this market increases, as stated in Propositions 3 and 4. After this point, the promotion spending of Destination 1 keeps increasing, as stated in Proposition 3, because its strategic value on the domestic market keeps rising. However, as stated in Proposition 4, the promotion spending of Destination 2 starts to decrease because both destinations are becoming more distant in strategic terms.

4. Model Predictions and Empirical Evidence

In this section, we integrate our model in the context of the South Europe evidence, taking mainly Spain as an example for convenience (access of recent data and knowledge of the case). In fact, Spain received in 2019 84 millions of international tourist arrivals, located

in the second position of the world's top destinations (after France). We use this case to motivate and improve the understanding of our results. Nonetheless, the model is general and can be applied to study demand shock in the touristic market in other regions of the globe, and in particular, for instance, in other relevant Southern Mediterranean countries (like France, Italy, or Greece, for instance). In this sense, the demand shock induced by the COVID-19 pandemic is just one more application.

Let us start by characterizing the situation before the COVID-19 pandemic. After, we will discuss the changes that the pandemic has produced. Let $i = 1$ represents a coastal destination (or other type of crowded destination) and $i = 2$ represents a rural destination.

Before the pandemic, Spanish coastal touristic destinations enjoyed a strategic advantage over rural destinations in the domestic and the international market. In terms of the model of the previous section, this situation can be represented by a parametrization where α_{1D} and α_{1I} are well above 1/2. For example, according to Exceltur (2019), the Spanish regions whose competitiveness indices were higher, were typically those specialized in sun and beach and with the highest production density (five out of the first seven destinations in the ranking are regions with the highest demand and all are by the sea).

Moreover, coastal destinations had a higher strategic value for the international market than for the domestic market, i.e., v_{1I} was above 1/2, while rural destination had a higher strategic value for the domestic market ($v_{2D} > 1/2$). As a result, coastal destinations had a higher strategic interest in the international market, while rural destinations in the domestic market, i.e., $\alpha_{1I}v_{1I} > \alpha_{1D}v_{1D}$ and $\alpha_{2D}v_{2D} > \alpha_{2I}v_{2I}$. The coastal destination strategic advantage was such that $\alpha_{1D}v_{1D} \geq \alpha_{2D}v_{2D}$.

Finally, the international tourists market demand was much larger than the domestic, i.e., M_I was above M_D. For example, based on hotel overnight stays in 2019, taken from the Spanish National Statistical Institute, international stays were 65% of the total stays.

The COVID-19 pandemic has introduced profound changes in the tourism market (Papatheodorou, 2021; Škare et al., 2021; Yang et al., 2020). Those changes can be translated in shifts in model parameters. In particular, M_I has fallen enormously due to mobility restrictions (international hotel demand in Spain has lost around 82%). The domestic market has also reduced but to a considerably lesser extent (domestic hotel demand in Spain has lost around 58%).

However, the pandemic has also introduced other profound changes in the tourism market (Papatheodorou, 2021; Škare et al., 2021; Yang et al., 2020). These changes translate to shifts in the structural parameters of the model and account for the observed increase in domestic market promotion spending in a context of declining demand. Specifically, the fall in the coastal destinations strategic advantage and the shift in the strategic value towards the domestic market.

As noted earlier, the COVID-19 has produced a reduction of the relative competitive advantage of coastal destinations because consumers are less willing to visit crowded destinations or gather in large groups (Maltseva and Li, 2020; Vashar and Štastná, 2020; Zenker and Kock, 2020). [14] The reduction in α_{1D} makes the two destination types more equal in terms of competitive interest for the domestic market. According to Proposition 2, this leads to a "*leveling the playing field effect"* in which the two destinations increase promotion in the domestic market, as represented in Figure 1.

In addition, the competition for the domestic market and the promotion spending may have increased because after the pandemic the strategic value that destinations place on the domestic market has increased, as stated in Proposition 3 and represented in Figure 2. The increase in the domestic market promotion spending is due to the increase in the strategic interest for this market might be higher for coastal destinations. The reason is twofold. First, these destinations were placing higher strategic value on the international market before the pandemic, and now they had to shift. Second, the increase in strategic value may had an indirect cross-effect according to Proposition 4. Thus, larger the strategic value that rural destinations place into the domestic market, further it increases the promotion spending of coastal destinations, because the strategic interest of both destinations become similar.

Overall, our model is compatible with the empirical evidence. The fall in the coastal destination's strategic advantage and the shift in the strategic value towards the domestic tourists' markets may have compensated for the decrease in demand, leading to increased competition in the domestic market and higher spending in promotion. The prediction holds even if we assume that the strategic value of the domestic market has remained unchanged instead of increasing, as the "*leveling the playing field effect"* resulting from

[14] Thus, in terms of the competitiveness indices type WEF (2019), the components associated with open spaces and rural tourism would have gained weight.

the decrease in the strategic advantage of the coastal destinations is likely to have been strong enough to compensate for the demand reduction.[15]

The "leveling the playing field effect" between destinations and the increased value of the domestic market can also explain the increased competition of the domestic market in other parts of the world (UNWTO, 2020a; 2020b). Finally, notice that the effects discussed in this paper are not restricted to the COVID-19 crisis period, as it is likely that the changes in the competitive advantages and the strategic value of the domestic market might be prolonged in time due to the fears of future pandemics and of traveling to distant places may likely to have persistent effects (Arbulú et al., 2021).

5. Conclusion

This paper proposes a game-theoretical model that considers various destinations within the same country by assuming two typologies, coastal (sun and sand) and rural. The model characterizes the destinations promotion strategies on two fundamental factors, which have substantially changed due to the COVID 19 pandemic, namely, the competitive (strategic) advantage of the destinations and the strategic value attributed to the domestic and international markets. The model rationalizes the destination current strategic behaviors and provides a theoretical framework consistent with the recent evidence.

In particular, the model predicts an increase in promotion spending even in contexts of falling demand, such as the current one, consistent with the empirical evidence on the Southern European countries' destinations, such as Spain. Thus, the pandemic might have substantially reduced the strategic advantages of crowded Southern European destinations, such as coastal destinations, and shifted strategic value towards the domestic market, less affected by the pandemic. Altogether, the model supports the existence of a competitive war for the domestic market between destinations within the same country,

[15] A similar increase in competition for the domestic tourists' market seems to be observed in the coastal and crowded urban destinations of the North of Europe, yet with weaker effects in terms of competition intensity. Notice that their strategic advantage over the rural has never been as strong as in the South of Europe.

which has led to an increase in promotion spending, despite the fall in the aggregate demand.

This competitive war is mainly justified by the "leveling the playing field effect" generated by the change in consumer preferences towards open spaces, which is favoring rural destinations, and decreasing the competitive (strategic) advantage that coastal destinations had before the pandemic. On the one hand, rural destinations increased their promotion spending because they felt that they could attract a demand that under the usual circumstances "would not come", even with high promotion spending. On the other hand, coastal destinations increased their promotion spending to retain the shifting demand that under the usual circumstances "would remain faithful". Moreover, the increase in the strategic value of the domestic market produced by the COVID-19 pandemic might have also contributed to the increased competition, according to the model.

Our approach and findings may open new avenues of further research for the study of demand shocks in touristic markets, but they are by no means the last word on the subject. In particular, in order to obtain more granular predictions, it could be interesting to add more destinations types and model the behavior of other economic agents like firms or consumers, or even consider that promotion spending may produce a market enlarging effect and positive spillovers. Regarding those agents, there are different types of touristic operators and tourists (distinct by age group, country of origin, preferences, etc.). In this paper, the promotion spending is carried out at the regional level (i.e., by destinations). However, promotion spending carried out at national or at firm level are also a possibility. For instance, if a centralized authority would decide the promotional spending, and the objective function is the total profit of the two destinations, there would be a corner solution, in which the promotional investment is made in favor of the destination which creates more value. In our context, it could be also interesting to integrate the increasingly important risk dimension in the analysis and to study potentially emerging new post COVID-19 trends in the touristic markets.

Finally, the analysis presented in the current study is important because the COVID-19 effects on tourism markets are likely to be persistence or even permanent (Papatheodorou, 2021; Škare et al., 2021; Wut et al., 2021; Yang et al., 2020). Nevertheless, the model is general enough and can help researchers and policymakers to better understand tourism

market competition in the presence of shocks affecting the demand and the touristic destinations in asymmetric ways, even after the COVID-19.

References

Arbulú, I., Razumova, M., Rey-Maquieira, J., and Sastre, F., (2021). Can domestic tourism relieve the COVID-19 tourist industry crisis? The case of Spain. Journal of Destination Marketing and Management, 20, 100568.

Becker, G. (1983). A Theory of Competition Among Pressure Groups for Political Influence. The Quarterly Journal of Economics, 98(3), 371-400.

Blake, A., Sinclair, M. T., and Sugiyarto, G. (2003). Quantifying the impact of foot and mouth disease on tourism and the UK economy. Tourism Economics, 9(4), 449-465.

Candela, G., and Cellini, R. (2006). Investment in tourism market: a dynamic model of differentiated oligopoly. Environmental and Resource Economics, 35(1), 41.

Corchón, L. C. (2007). The theory of contests: a survey. Review of Economic Design, 11(2), 69-100.

Corchón, L. C., and Serena, M. (2018). "Contest theory". In Handbook of Game Theory and Industrial Organization, Volume II. Cheltenham, UK: Edward Elgar Publishing.

Cró, S., and Martins, A. (2017). Structural breaks in international tourism demand: Are they caused by crises or disasters? Tourism Management, 63, 3–9.

Dasgupta, P., and Stiglitz, J. (1980). Industrial structure and the nature of innovative activity. Economic Journal, 90(358), 266–293.

Exceltur (2019). Principales indicadores del monitor de competitividad turística de los destinos por CCAA 2018 (MONITUR).

Farmer, A. and Pecorino, P. (1999). Legal expenditures as a rent-seeking game. Public Choice, 100, 271-288.

Gössling, S., Scott, D. and Hall, C.M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. Journal of Sustainable Tourism, 29(1), 1-20.

Hall, C.M., Scott, D. and Gössling, S. (2020). Pandemics, transformations and tourism: Be careful what you wish for. Tourism Geographies, 22 (3), 577-598.

Holzer, H., and Neumark, D. (2000). Assessing affirmative action. Journal of Economic literature, 38(3), 483-568.

Jafari, J. (1986). On domestic tourism. Annals of Tourism Research, 13(3), 491-496.

Jang, S. S., and Chen, M. H. (2008). Financial portfolio approach to optimal tourist market mixes. Tourism management, 29(4), 761-770.

Konrad, K. (2009). Strategy and dynamics in contests. OUP Catalogue.

Kozak, M., and Kim, S. (2019). Revisiting choice sets for overseas pleasure vacations: Comparison of short-haul and long-haul destinations. Journal of Destination Marketing and Management, 14, 100388.

Kreiner, N.C., and Ram, Y. (2020). National tourism strategies during the COVID-19 pandemic. Annals of Tourism Research, 103076.

Krueger, A. (1974). The Political Economy of the Rent-Seeking Society. American Economic Review, 64(3), 291-303.

Kuo, H. I., Chen, C. C., Tseng, W. C., Ju, L. F., and Huang, B. W. (2008). Assessing impacts of SARS and Avian Flu on international tourism demand to Asia. Tourism Management, 29(5), 917-928.

Kuokkanen, H., and Bouchon, F. (2021). When team play matters: Building revenue management in tourism destinations. Tourism Economics, 27(2), 379-397.

Lee, T., and Wilde, L. (1980). Market structure and innovation: A reformulation. Quarterly Journal of Economics, 94(2), 429–436.

Loury, G. (1979). Market Structure and Innovation. The Quarterly Journal of Economics, 93(3), 395–410.

Maltseva, Y.A. and Li, H. (2020). Transformation of Chinese tourist consumer behavior as a consequence of the COVID-19 pandemic. Advances in Social Sciences, Education and Humanities Research, 486, 284-288.

McAleer, M., Huang, B. W., Kuo, H. I., Chen, C. C., and Chang, C. L. (2010). An econometric analysis of SARS and Avian Flu on international tourist arrivals to Asia. Environmental Modelling and Software, 25(1), 100-106.

Mealem, Y., and Nitzan, S. (2016). Discrimination in contests: a survey. Review of Economic Design, 20(2), 145-172.

Navarro, E., Ortega, G., and Torres, E. (2020). Propuestas de reflexión desde el turismo frente a coivd-19. Incertidumbre, impacto y recuperación, Universidad de Málaga.

Papatheodorou, A. (2021). A review of research into air transport and tourism: Launching the Annals of Tourism Research Curated Collection on Air Transport and Tourism. Annals of Tourism Research, 87, 103151.

Ritchie, B. W., and Jiang, Y. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. Annals of Tourism Research, 79, 102812.

Rosselló, J., Santana-Gallego, M., and Awan, W. (2017). Infectious disease risk and international tourism demand. Health policy and planning, 32(4), 538-548.

Sheldon, P., and Dwyer, L. (2010). The global financial crisis and tourism: Perspectives of the Academy. Journal of Travel Research, 49(1), 3-4.

Škare, M., Soriano, D. R., and Porada-Rochoń, M. (2021). Impact of COVID-19 on the travel and tourism industry. Technological Forecasting and Social Change, 163, 120469.

Tavares, J. M., de Vargas Mores, G., and Tomazzoni, E. L. (2015). Where to invest in touristic promotion? Game theory as a decision instrument for the public sector. Tourism Economics, 21(4), 775-789.

Tullock, G. (1980). Efficient rent-seeking. In J.M. Buchanan, R.D. Tollison and G. Tullock (Eds.), Toward a theory of the rent-seeking society, 97–112. College Station: Texas A&M University Press.

UNWTO (2020a). Understanding Domestic Tourism and Seizing its Opportunities. Madrid: UNWTO.

UNWTO (2020b). UNWTO Recommendations on Tourism and Rural Development: A Guide to Making Tourism an Effective Tool for Rural Development. Madrid: UNWTO.

UNWTO (2021a). UNWTO Tourism Data Dashboard. Madrid: UNWTO.

UNWTO (2021b). Impact assessment of the COVID-19 outbreak on international tourism. https://www.unwto.org/impact-assessment-of-the-COVID-19-outbreak-on-international-tourism. (Accessed 27 April 2021).

Van Zyl, C. (2012). Tourism marketing: a game theory tool for application in arts festivals. Tourism Economics, 18(1), 43-57.

Vashar, A., and Šťastná, M. (2020). Impact of the COVID-19 pandemic on rural tourism in Czechia: Preliminary considerations. Current Issues in Tourism, 1-5.

Vojnović, M. (2015). Contest theory: Incentive mechanisms and ranking methods. Cambridge University Press.

WEF (2019). The Travel and Tourism Competitiveness Report 2019, World Economic Forum.

Wut, T. M., Xu, J. B., and Wong, S. M. (2021). Crisis management research (1985–2020) in the hospitality and tourism industry: A review and research agenda. Tourism Management, 85, 104307.

Yang, Y., Zhang, H., and Chen, X. (2020). Coronavirus pandemic and tourism: Dynamic stochastic general equilibrium modeling of infectious disease outbreak. Annals of Tourism Research, 83, 102913.

Zeng, B., Carter, R. W., and De Lacy, T. (2005). Short-term perturbations and tourism effects: The case of SARS in China. Current Issues in Tourism, 8(4), 306-322.

Zenker, S., and Kock, F. (2020). The coronavirus pandemic – A critical discussion of a tourism research agenda. Tourism Management, 81, 104164.

Zirulia L. (2011). Competition Between and Within Tourist Destinations. In: Matias Á., Nijkamp P., Sarmento M. (eds) Tourism Economics. Physica-Verlag HD.