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A proposal based on the criterion of homogeneous
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Which boundaries for a tourism destination?

A proposal based on the criterion of homogeneous reputation

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Abstract

This paper provides a procedure to delineate the boundaries of a tourism destination, based on the criterion of the homogeneity of reputation, in terms of both the geographical and the attributes' spaces. This procedure can be easily implemented with data usually available at public administrative offices, e.g. collected in a survey asking tourists about their degree of satisfaction with relevant facts of their holiday. To illustrate the procedure, an example using survey data on Summer tourists in the Aosta Valley in 2008 is provided. Our analysis can be of interest for policymakers involved in territorial marketing.

Keywords: tourism destination; territorial marketing; planning; reputation; satisfaction; Italy; ordered logit models; multilevel models.

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1 Introduction

In the 1990s, *re-scaling* and *re-territorialisation* issues entered the European agenda (Brenner, 1999; Swyngedouw, 2000), and an increasing number of scholars and practitioners began to think how strategic planning practices should be redesigned (Janin Rivolin, 2010). The most interesting proposals concerned new forms of governance, which involve horizontal and vertical partnerships, and are based on a system of contractual relations between private and public stakeholders (Armstrong and Taylor, 2000). In the 1999 reform of Structural Funds, the European Commission took into account the claims of a wider participation of territories in the political process, and strengthened the role of multilevel governance in any phase of the regional policy process.

In general, the EC proposals have stimulated interesting and differentiated responses by National States (Armstrong and Taylor, 2000). For instance, in Italy, a new class of sub-regional partnership-based collective actors has been introduced with the aim to enhance the effectiveness of public interventions (Barca, 2004). In Finland, re-territorialization has been realized with the creation of regional development zones (RDZs), established with the goal of responding to a set of political and societal demands, such as efficiency, equity and competitiveness, attention to geographical and environmental issues (including the improvement of transport system), and the development of territorial attractiveness with regarding to the placing of manufacturing and service activities (Jauhiainen and Moilanen, 2001).¹

Many EU programmes, such as LEADER, INTERREG, and Objectives 1, 2 and 3, funded by the European Regional Development Fund (ERDF), have recently encouraged the use of *integrated programs*, and the strengthening of network activities between regions.

Among the Member States, public authorities in charge of managing resources have developed different approaches for defining the appropriate scale and the proper boundaries of the planning areas. Take as an example the Objective 2 Programme 2000-2006 in Italy, where most of the involved authorities (i.e. administrative regions corresponding to NUTS 2 areas) have chosen to invest in local integrated programs with different scales of intervention. Some Regions (e.g. Lombardy) have opted for a bottom-up approach, leaving to municipalities the choice of the areas to associate with. Other Regions (e.g. Tuscany) have defined the boundaries based on larger administrative aggregates (i.e. the NUTS 3 areas). Recently, Janin Rivolin (2010) has stated that both the bottom-up approach, based on “spontaneous and autopoietic developments (p. 309)”, and the top-down approach have shown their weaknesses in terms of sustainability and of project capability. As Hooghe and Marks (2003) suggested, the multilevel governance approach appears to be promising for the identification and aggregation of territories, since it not conditioned by administrative partitions, and it is potentially more effective and efficient than the centralization approach. Nevertheless, the advantages of this new form of organization may be reduced if the partnership formation is based more on historical and political

¹Typically, an RDZ covers a rather large geographical area, and consists of several neighboring regions, possibly belonging to different countries. The recent literature has begun to refer to such areas as *soft spaces* or *fuzzy boundaries* (Allmendinger and Haughton, 2009 and 2010; Haughton et al., 2010; Jauhiainen and Moilanen, 2011).

convergence than on a real development project. In this connection, Dühr et al. (2010) noted that ‘fluid territories’ may find it difficult to reach a consensus, because of lack of statutory or democratic legitimacy. In addition, Pike et al. (2006) were of the opinion that a coordinating role of national or sub-national governments is needed in designing the re-scaling process and the multilevel governance, since an un-superintended process may lead to the risk of wasteful territorial competition.

In the last few decades, sub-national governments have gained ground as emerging centers of coordination of these planning and development efforts (Morgan, 2004; Zanon, 2010). In 1994, their role was strengthened by the European Commission with the creation of the Committee of Regions (COR), aiming to “herald the prospect that regional governments within member-states would have an explicit link to EU decision-making and policy formulation” (Deas and Lord, 2006: 1849).

In the wake of these changes, mostly led by the *European planning doctrine*, spatial planning and development programming documents in Italy have changed “from comprehensive institutional documents to a game in which a number of public and non-public actors intervene at different geographical scales, making use of a plurality of tools, in some cases even outside the statutory boundaries of local authorities” (Zanon, 2010). This transformation has also been favored by the positive experiences of industrial districts and local systems of production, as well as by a movement towards decentralization and a redesign of the relationships between Member States, local authorities and civil society (Governa and Salone, 2004). This process, which accelerated at the beginning of the 1990s, has also concerned tourism areas.

Although the Community has no direct tourism competence, tourism development has been amply supported through EU programs. A number of actions have contributed to building tourism destinations, strengthening regional identities, clustering tourist attractions, and creating tourism routes, transportation and knowledge sharing (Prokkola, 2008; Chang 2001). This process has been appropriately called by Prokkola (2008) the *tourist production of space*.

In addition to those actions which are co-financed by European funds, Italian regions have supported tourism initiatives (and in particular the development of tourism systems and districts) with specific activities. In 2001, the Local Tourism Systems (LTSs) were recognized at the national level by Article 5 in Law 135/2001.² Although the Law was variously interpreted by the different Regions, and in some cases criticized by practitioners (Capone, 2006), it has provided a legal framework for the creation of many local partnerships in the tourism sectors.

Despite the diffusion of such initiatives, there is lack of consensus on which methods and criteria are more effective and useful to identify the boundaries of an optimal area, and, in particular, of a tourist destination. As Governa (2008) pointed out, “the identification of the limits of the territories on which the programmes are implemented is, in itself, a problem that has no unique and clear solution [...] [M]any possible, different demarcations

²The LTS was regulated as a public-private system of territorial areas that can belong to different Regions, characterized by an integrated offer of cultural and environmental assets and tourism attractions, including typical products of agriculture and local handicrafts, or by the widespread presence of individual or associated tourism enterprises.

exist [...]”.

Following Governa (2008), the problem of demarcation can be tackled by two different approaches: the first approach relies on the interests of the local actors involved; and, the second is based on the criterion of homogeneity. Both approaches have pros and cons, which we briefly discuss in relation to the identification of optimal tourism destinations.

The first approach assigns the identification of the new territory to local actors. Their direct involvement is usually believed to lead positive coordination effects among the involved territories, and to favor their long-term attitude towards cooperation. However, the implementation of this approach is often difficult, mainly because of the frequent changes of leading actors and political representatives, and of potential rivalries among stakeholders. Moreover, due to potential heterogeneity in the tourist activities of merging territories, the identification of a coherent tourist supply and the design of an effective promotion strategy may be problematic.³

The second proposal requires the identification of the criterion of homogeneity to be utilized in the definition process and the provision of a detailed description of the steps to be followed for its implementation. To our best knowledge, scholars have not devoted much attention to this suggestion. As an alternative, methods such as SWOT analysis, are employed to define a tourism destination, using a *supply-driven* perspective. However, basing the analysis on territorial characteristics usually has the drawback of underestimating the market needs and overestimating the tourism function of areas.

In this paper, we stay close to the suggestion of Governa (2008), and propose a *demand-driven* procedure for the identification of the boundaries of a tourism destination.

Recognizing the difficulty of solving the problem of demarcation as a whole, we assume that there is an administrative entity (i.e. the Region) which covers a sufficiently large territory to include one or more potential tourism destinations, and propose a procedure based on the criterion of tourism reputation to define the boundaries of tourism destinations across geographical and attribute spaces.⁴

More precisely, a delineation of a homogeneous tourism destination is obtained by following four steps. We start by identifying the most important attributes of the tourism supply, and of the territorial units which could be included in a tourism destination. The second step is to create a map of the reputation of territorial units and attributes. In the third step, different scenarios are proposed, each of these containing the description of one or more potential tourism destinations. Finally, statistical tools are employed to facilitate the selection of the most-preferred scenario.

This procedure has important practical implications both for the construction of a system of tourist supply and for promotional activities. Moreover, it can be easily im-

³Furthermore, two main issues are critical for the identification of tourism destinations. Firstly, as already pointed out, both top-down and bottom-up approaches have their limits, since they are more oriented towards the maintenance of established political equilibriums than towards the creation of a strong public-private partnership based on a strategic vision of the territorial development. Secondly, spatial units are often conditioned by administrative partitions and political traditions, and programs and projects usually follow the rhetoric of the exploration of local resources, rather than taking into account the real status of the supply and the needs of the market.

⁴By ‘tourism reputation’, we mean visitors’ general perception of the quality of a territory’s tourism supply.

plemented using data usually available at public administrative offices, e.g. collected in a survey asking tourists about their satisfaction with relevant facts of their holiday. Indeed, in our analysis, we describe the way to delineate tourism areas, starting from a simple customer satisfaction survey. To clarify our proposal, we provide an application for the Aosta Valley, using survey data collected in 2008. It is worth noting that this procedure can be also applied to cross-regional, national or cross-national levels, given the availability of data. Before presenting the procedure, in the next section we clarify the concept of reputation and the reason for its use in the analysis.

2 Tourism reputation

Tourism goods (accommodation, food, transport, shopping, entertainment, etc.) are usually referred to as ‘experience goods’, i.e. products or services which have characteristics that can be evaluated only after consumption (Lertputtarak, 2012). As Shapiro (1983) noted “[t]he idea of reputation makes sense only in an imperfect information world. A firm has a good reputation if consumers believe its products to be of high quality. [...] When product attributes are difficult to observe prior to purchase, consumers may plausibly use the quality of products produced by the firm in the past as an indicator of present or future quality (p.659).”

Indeed, the nature of these goods makes it difficult for tourists to evaluate a potential destination without receiving information from formal (tourist guides or specialistic journals) and/or informal (opinions of friends and relatives who have already visited the place) sources. These variegated pieces of information on the characteristics of a place constitute the *tourism reputation* of that place. Although tourism reputation is difficult to measure in a survey, it is, however, possible to keep track of the main determinant of reputation, i.e. the satisfaction of visitors. This variable appears to be a good proxy for reputation if tourist tastes and supply attributes change slowly, as in mature markets. Since the satisfaction that a tourist obtains from visiting a place is the main determinant of the choice of the holiday destination and the decision to revisit (Yoon and Uysal, 2005), in the following analysis we use the concept of ‘tourism reputation’ as a criterion for the selection of the boundaries of a tourism destination.

Tourism reputation is the result of the assessment of tourists (and experts) on the places they have visited during previous vacations (or trips). The evaluation of visitors depends on their conjectures about and aspirations for the tourism offer, and on the capability of the place to meet these expectations.

Tourism reputation involves a plenty of products and services (supply attributes), from lodging structures to restaurants, from cultural industries to transportation, which are often mutually interconnected and generally provided by a multiplicity of actors (tourism entrepreneurs, the local community, the public authorities dealing with aspects such as accessibility, etc.). Therefore, although in many sectors reputation is usually associated with single products or company brands, in the case of the tourism sector, it perhaps more accurate to refer to the phenomenon as ‘*collective* reputation’ (Tirole, 1996).⁵

⁵For empirical works on collective reputation, see Landon and Smith, 1998; Combris, Lecocq and Visser,

3 Delineation of the boundaries of tourism destinations

We base our analysis on the the concept of collective tourism reputation to find out the degree of homogeneity among different territories and their attributes, which is then employed to delineate the boundaries of a tourism destination. We use the criterion of reputation homogeneity to combine territories and attributes which are more similar (i.e. with a similar levels of reputation). This choice is motivated by the fact that the inclusion of even a few territories or attributes with a lower evaluation may lead to a high loss in reputation for the whole tourist destination. Examples of the effects of a negative single evaluation on the overall reputation are abundant. For instance, Louisot (2004) provides evidence that “a reputation can be ruined overnight by an ill-managed event (p.38)”, and, in a similar way, Rose and Thomsen (2004) state that “a sudden negative event exposed in the media to the public could damage the corporation’s image and reputation (p. 202)”. In addition to this, reputation homogeneity is paramount, as it often contributes to the identity of a tourism destinations (Milne, 1998; Kneafsey, 2001; Dredge and Jenkins, 2010).

In order to identify the most appropriate scale and composition of tourism destinations, in terms of both the geographical and the attributes’ spaces, we propose a procedure in four steps:

1. Selection of tourism units and key attributes.
2. Production of a map of reputation across tourism units and attributes.
3. Identification of tourism units and attributes to be included in potential homogeneous tourism destinations.
4. Evaluation of the degree of homogeneity of potential tourist destinations and their selection.

In the following paragraphs each step is analyzed in detail. To clarify the discussion, we have presented the procedure as it could be used to delineate the boundaries of a tourism destination which is to be the object of a promotional activity, e.g. with a collective brand.

3.1 Selection of tourism units and key attributes

The first step of the procedure is the selection, for the Region of interest, of the territorial units in which tourist activities play significant role, and the selection of those attributes of the tourist supply that are more relevant for visitors.

The selection of the relevant territorial units is motivated by the fact that not all municipalities and territories have a tourism vocation, and thus areas with different vocations, i.e. industrial or commercial, could be excluded. Usually regional authorities have established their own criteria to identify tourism units. Alternatively, standard indicators concerning tourist flows or tourist accommodation and tourism services diffusion can be utilized.

As far as the selection of the key attributes is concerned, it is worth noting that the assessment of tourist supply is often variegated, some attributes being evaluated more positively than others. Although promotion strategies usually focus on appreciated aspects,

1997; Quagraine et al., 2003.

disregarding the unfavorable ones, we propose to select attributes on the basis of their relevance. Therefore, the choice of the attributes to be included in the analysis is based not on the appreciation of tourists for attributes but on the importance they assign to those attributes. The inclusion of relevant (although less positive) attributes is essential when regional authorities have the power to affect the tourism supply, e.g. being actively involved in improving their quality in some territorial units (transport, events, etc.).

In order to identify the most important attributes, administrations may consult experts, or use surveys. Although tourists can be asked directly for a ranking of attributes, many authors advise against this procedure, because interviewed persons usually provide biased responses.⁶

In order to avoid this risk, we suggest relying on econometric techniques that can be applied to detect the weight of different attributes when data on both the appraisal of the vacation and of specific aspects of it are available. Indeed, the attributes' importance can be pointed out by using econometric analysis, and regressing the overall satisfaction on the evaluations of the different aspects of the supply (Alderighi and Lorenzini, 2011). The magnitude and significance of the coefficients indicates the importance of the attributes.

A more sophisticated procedure can be developed to account for asymmetric effects, deriving from the fact that the impact of an attribute on the overall evaluation may vary when its quality is above or below the average (Füller et al., 2006; Mittal et al., 1998). In order to consider asymmetric effects, multiple regression models can be employed where dichotomized dummy variables are used to indicate the highest and lowest satisfaction levels (Füller and Matzler, 2008).

3.2 Mapping reputation across tourism units and attributes

The second step of the procedure is the evaluation of selected tourism units and attributes. A map of reputations can be created in order to ease the readability of the results. Figure 1 provides an example considering six tourism units and four attributes. In this case, researchers can also rely on the opinion of experts or on data coming from a customer satisfaction survey to assign to each cell of the table, a_{ij} , the corresponding evaluation.⁷

INSERT FIGURE 1 HERE

The map can help to identify the critical success factors which determine the higher or lower reputation of each tourism unit. This information will then be used in order to define, *prima facie*, homogeneous tourism destinations.

The map can be also used to verify the level of satisfaction of tourists with the different attributes and make destination managers aware of the need to improve the supply of those attributes or in those territorial units which receive lower evaluations. A direct

⁶For example, Packard (1957) noted that, when people are asked the reason why they buy a given product (a toothpaste), they usually respond with a vague general motivation (to keep their teeth clean) and not with their personal motivation (e.g. to reduce bad breath).

⁷Excluded territories or attributes may be also reported on the map to complement the analysis.

intervention in the weaker points of supply is particularly relevant since, as Butler (1980) noted, if some measures of consolidation are not undertaken, a tourist destination risks entering into a phase of decline.

It is worth noting that, although this procedure is mainly intended to identify tourism destinations, it is also useful to improve the knowledge of the territory. To facilitate the next steps of the analysis, territorial units which are more closely located and attributes which are more similar should be placed next to each other.

3.3 Identification of tourist units and attributes to be included in potentially homogeneous tourism destinations

The third step of the procedure consists of identifying tourism units and attributes to be included in potential homogeneous tourism destinations. Using the map prepared in Section 3.2, we start by aggregating the adjacent cells which present more similar values, until we obtain one or more tourism destinations covering all, or most of the, tourism units. Different scenarios can be proposed, and then evaluated, in the next and final step. Figure 2 provides an example in which a region hosts two tourism destinations. The first one consists of tourism units 1-4 and attributes 3-4, the second one of tourism units 5-6 and attributes 1-3.

INSERT FIGURE 2 HERE

The identification of territories and attributes that may constitute potential tourism destinations may be complex since, apart from the homogeneity criterion, many additional issues need to be taken into account.

First, there is number of tourism destinations to be created. Clearly, the larger the number of tourism destinations, the higher the homogeneity. However, it is necessary to find a balance between homogeneity and numerousness. Consider, for example, the promotional activities. They are usually characterized by economies of scale. By increasing the number of tourism destinations, there is a risk of lack of effectiveness of many promotional tools. On the other hand, if a tourism area is too heterogeneous, it will be difficult to offer a clear message to potential tourists, and, also in this case, the effectiveness of the promotional strategy is at risk. Furthermore, a problem of visibility may arise for destinations which are too small.

Second, in designing the boundaries of the tourism destinations, the proximity between territorial units to be included in the tourism destination should also be taken into account, as well as the vicinity of the attributes. It is difficult to build a tourism destination, where the territorial units involved are distributed in a haphazard/random fashion, or where some attributes are included while others, which are strongly connected to the first ones, are not.

Third, there are many ways in which different attributes and territorial units can be combined. The formation of tourism destinations should follow the homogeneity criterion but can also pay attention to cultural and political aspects. Among these, a critical

choice is whether it is necessary to cover all the tourism units, or, in the case of strong heterogeneity, to also consider scenarios where some of these are excluded. In this case, a list of scenarios including nested tourism areas can be prepared, and then tested in the final step.

Finally, the characteristics of the supply, social pressure, negative or positive economic trends, political interests, and strategic reasons may eventually influence the proposed different scenarios by identifying different priorities, each of which have pros and cons:

1. *Excellence* can be driven by competitiveness issues. Since the growing globalization of the markets, regions have to focus on the most attractive, charming, and exciting places. The higher the focus on excellence, the lower is the inclusion of territorial units and attributes in the system, the critical mass, and the political consensus. If the excellence criterion is preferred, however, the visibility of promotional campaigns could be warranted by the prestige of the destinations.
2. *Inclusiveness* can be motivated by political and social reasons. In general, the higher the number of territorial units included in the tourism system, the higher is the critical mass, the political consensus, and the visibility of promotional campaigns. However, a trade off is likely to exist between inclusiveness, specialization and excellence.
3. *Specialization* can be preferred for those territories where there are significant tourist flows, which are looking for high specialized supply (e.g. sports such as golf, climbing, spas, etc.) and are only marginally interested in other attractions. The higher the specialization of a destination, the higher the possibility of moving the system towards specific targets.
4. *Complementarity* services can be suggested when tourist interests are not focused. For instance, when a vacation has a cultural motivation, tourists may prefer to experience many different aspects of the supply in order to have a clearer perception of that place.

3.4 Evaluation of the degree of homogeneity and selection

The fourth step consists of the evaluation of the degree of homogeneity of different scenarios and the selection of the preferred one based on a more systematic analysis. A simple look at the different evaluations in Figure 1 can provide some indications of the degree of homogeneity. Indeed, Section 3.3 relies on the information provided in the map. Nevertheless, the information contained in Figure 1 is only partial since it provides average evaluations for each cell, without accounting for the heterogeneity within a cell. Multilevel models (Leckie, 2010a, 2010b; Steele, 2008, 2009) are a way to verify how the homogeneity of reputation varies across different scenarios. In other words, they can help to understand the homogeneity of the tourism destinations defined, following the indications provided in Section 3.3. More specifically, multilevel models are econometric tools to account for

within-group and between-group heterogeneity.⁸ In its simplest specification the multilevel model takes the form:

$$y_{ij} = \beta_0 + u_j + e_{ij}, \quad (1)$$

where y_{ij} is the evaluation of the individual i belonging to group j ; β_0 is the overall average evaluation across all groups; and $u_j + e_{ij}$ is the residual term, which is split into two components: the group level residual, u_j , and the individual level residual e_{ij} . The mean of y_{ij} for group j is $\beta_0 + u_j$, and the group effect is the difference between group j 's mean and the overall mean. Both u_j and e_{ij} are assumed to be normally-distributed, with mean 0 and variance σ_u^2 and σ_e^2 , respectively.

The comparison of the estimated variance $\hat{\sigma}_u^2$ and $\hat{\sigma}_e^2$ in the different scenarios may help to identify the spaces of homogeneity, and how much homogeneity the tourism destination loses when adding units and services to one or more high-reputation core destinations. If the homogeneity remains high, the numerousness of the tourism units in the same destination should be as high as possible, in order to take advantage of the critical mass for promotional purposes. The right mix between excellence, numerousness, specialization and complementarity depends on the characteristics of the tourism supply, as well as on the policy goals.

Furthermore, two tradeoffs should be taken into account. First, a tradeoff may arise between excellence (high homogeneous reputation) and the numerousness of units to be included in the tourism destination. The two extreme points are a unique tourism destination for the whole region against as many tourism destinations as tourism units. The maximum aggregation choice creates critical mass to the detriment of the higher quality, and vice versa. A second tradeoff is between specialization and complementarity. The two extremes are highly specialized tourism destinations (one for every area of specialization, such as golf, spas, culture, etc.) as against areas offering a plurality of services.

4 An example: the Aosta Valley

In this section, we apply the procedure presented in Section 3 in order to identify reputation homogeneous tourism destinations for the Aosta Valley, a small region in the North-West of Italy, sharing land borders with France and Switzerland.⁹

Thanks to its location in the heart of the Alps, the Aosta Valley is an important national and international destination for skiing in Winter and for excursions in Summer. Indeed, about 22% of the regional added value comes from the tourism sector.

In 2008 the regional government commissioned a survey in order to investigate the level of satisfaction experienced by the tourists visiting the Valley and to identify the levers necessary to improve the supply system for the Summer season. Among the various aspects investigated by the questionnaire, a central role was given to obtaining information on which activities tourists attend more and the evaluation of each activity, as well as of the

⁸In the following analysis, the group level is represented by the different cells in the map, i.e. the combination attribute/unit, and the individual level by the tourist.

⁹The Aosta Valley has 128,230 inhabitants and 74 municipalities. Its surface area is 3,263.25 square kilometers, and the per-capita income is €32,623 (2008).

whole vacation. Other sections aimed at gathering information on the booking channels, the means of transport, the composition of the party, and the performed activities, and a final section was devoted to the respondents' personal information. Data were collected at the tourists' lodgings and, to a lesser degree, at the Tourism Offices. The survey considered only those tourists who had spent one or more nights in a hotel or camping site of the Valley. For each party one questionnaire was distributed. In the case of incomplete or incoherent answers to questions, the questionnaires were discarded. Of 3,037 initial responses, 1,410 (46 percent) were considered.

Our data source come from this survey. The Aosta Valley destinations are assigned to 11 territorial units (Aosta; Cogne Gran Paradiso; Gran San Bernardo; Grand Paradis; La Thuile; La Porta della Vallè; Monte Bianco; Monte Cervino; Monte Rosa; Monte Rosa Walser; Saint Vincent).¹⁰ Data also contain information on the customer satisfaction for the overall vacation and for eight attributes of the tourism supply (open air activities, culture, entertainment, restaurant, tourist accomodation, hospitality of the local community, eno-gastronomy, sport). Tables 1 and 2 provide the descriptive statistics of the main variables taken into account in the analysis.

INSERT TABLES 1 AND 2 HERE

4.1 Selection of tourism units and key attributes

At the time of the survey the regional territory was divided in 11 tourism units, each assigned to a local tourism office called an AIAT (Azienda di Informazione e Accoglienza Turistica), responsible for destination management activities and assistance to visitors. We include all the 11 territorial units in the analysis because all these zones have a strong tourism function, as testified by the high number of visitors.

The selection of key attributes was done using a generalized logistic regression model for ordinal dependent variables. This procedure was preferred to a standard ordered logit, after controlling for the validity of the parallel regression assumption. In particular, firstly, an ordered logit model was run. Since the Brant test provided evidence that the parallel regression assumption was violated, a generalized logistic regression model for ordinal dependent variables was carried out, which estimated a *partial proportional odds model*, where the parallel lines constraint is only relaxed for those variables where it is not satisfied (Williams, 2006).¹¹ As a preliminary step, we reduced the levels of the response variable from five to three, gathering the lower levels into one as the number of responses in the first two levels was very low (2.39 percent), can be seen Table 2. For the same reasons, we also transformed the other categorical variables in a similar way. We regress the overall satisfaction of a visitor on his/her satisfaction with different attributes of the tourism

¹⁰In this analysis the 11 territorial units were renamed TU1–TU11 in order to maintain the confidentiality to the data. The ordering of labels respects the geographical proximity of territorial units. I.e. if two territories have consecutive numbers, it means that they are located next to each other.

¹¹We use the Stata command `gologit2`, option `autofit`.

supply. As explained in Section 3.1, the interpretation of the results is straightforward: the magnitude and significance of the coefficients indicates the importance of the attributes.

The results are provided in Table 3. All equations include controls for the origin and destination of tourists, their age, sex and title, and the composition of the party. Estimated coefficients can be interpreted as odds ratios as in a binary logit model. Column (1) shows the odds ratios of higher overall satisfaction for a unitary increase in the independent variables from a low level to a middle level of satisfaction, and column (2) from a middle level to a high level of satisfaction. All the coefficients are highly significant with the exception of SPORT (sport activities), CULT(culture) and GASTR (eno-gastronomic products).

Note that the significance of the attribute and the evaluation are usually are positively correlated, but with some notable exceptions.

Next, we split the sample into the 11 tourist units and we have applied the same estimation technique. This second analysis confirms a certain homogeneity among tourism units. The variables referring to sports activities, cultural aspects, and eno-gastronomic products are significant in 4, 1, and 0 tourism units, respectively. We also split the sample into specific segments of tourists, and find that sports activities are highly significant for younger tourists (aged below 40), and the cultural attractions coefficient is statistically different from the 10% level for tourists with higher education. This is in line with the findings of Alderighi and Lorenzini (2011) on cultural attendance. Finally, although GASTR is weakly significant at the 10% level, we do not find evidence that it is an essential driver for satisfaction during vacation.¹²

INSERT TABLE 3 HERE

We also extend the analysis by considering asymmetric effects (See Section 3.1).¹³ Table 4 presents the results obtained from an ordered logit model.¹⁴

INSERT TABLE 4 HERE

As in the previous case, all the coefficients are highly significant, with the exception of SPORT (sport activities), CULT (culture) and GASTR (eno-gastronomic products). Open air activities, tourist accommodation, and cordiality of people odds ratios are higher than 1 for high levels of satisfaction, and lower than 1 for low levels. This means that such attributes contribute to strongly increase overall satisfaction when they receive a very

¹²Estimates are available upon request.

¹³Dummy variables for high and low levels of satisfaction are as follows. From Table 2 it emerges that the median value for each satisfaction variable is 3, and therefore we use the same threshold for each satisfaction variable. Therefore, the dummy for high satisfaction (H) scores 1 if satisfaction = 4, and 0 otherwise; the dummy for low satisfaction (L) scores 1 if satisfaction is <3; and 0 otherwise.

¹⁴The assumption of parallel regression is also violated in this case. An alternative would be to use gologit2, in this case, but the results would be difficult to interpret.

positive evaluation, while they have a negative impact on overall satisfaction when their evaluation is less positive. For two attributes, entertainment activities and restaurants, the estimated coefficients are significant for low levels but not for high ones: this means that people’s overall judgement of their vacation is strongly damaged by low levels of entertainment activities and restaurants, while it is weakly positively affected by high levels. In this case, we also split the sample for the 11 tourism units, and considered various tourist segments. The results confirm the previous analysis.

Combining the results presented in Tables 3 and 4, and the supplementary analysis based on geographical and socio-demographic disaggregation, we identify a first group of attributes that are strongly significant in all estimates (OPEN, ENTERT, RESTAUR, LODGING, PEOPLE), a second set (SPORT, CULT) that is weakly significant, and the attribute GASTR is not significant in most of the estimates.¹⁵ We therefore rely in the next step of the analysis on the first and second sets of attributes, excluding GASTR.¹⁶

4.2 Mapping reputation across tourist units and attributes

In this step, we map the satisfaction (reputation) levels for the 11 tourism units and the seven relevant attributes. Since a source of heterogeneity among evaluations comes from tourist heterogeneity, we compute the average satisfaction levels, controlling for the socio-demographic characteristics of tourists. In order to obtain the satisfaction levels we run the following regression:

$$y_{ita} = \delta_{ta} + \alpha C_i + \epsilon_{ita}, \quad (2)$$

where, i refers to visitors, t to the territorial unit, and a to the attribute; δ_{ta} is the territorial unit-attribute fixed effect (i.e. the satisfaction level of each cell); C_i is the vector of (standardized) controls, including the characteristics of the visitors such as his/her origin, age, sex, and title, and the composition of the party, and ϵ_{ita} is the random term. Moreover, to improve the readability of the data, we transform the scores to a 0-100 scale.

INSERT FIGURE 3 HERE

Figure 3 presents the satisfaction levels for the 11 tourism units and the seven relevant attributes, δ_{ta} . In the colored map deeper colors indicate higher satisfaction, while lighter colors correspond to lower satisfaction.

On average, the evaluation of all attributes is high, ranging from 60 to 94. We find a certain homogeneity among territorial units (TU) for the same attribute. The quality of the accommodation (LODGING) and hospitality of the local community (PEOPLE) receive very high scores. They are followed by sport activities (SPORT), cultural activities (CULT) and entertainment (ENTERT). There are some territorial units (e.g. TU2-TU4

¹⁵In recent years the Valle d’Aosta Region has invested in the valorization of typical gastronomic products promoting two quality brands, and spreading the diffusion of points-of-sale. An updated survey might then give different results with respect to the perception of the importance of this attribute.

¹⁶A robustness check of analysis considering all the attributes is available upon request. The main results do not change significantly.

and TU8-TU10), however, that present higher evaluations than others. The map shows that excellence is concentrated in a group of sub-regions and attributes.

4.3 Identification of tourism units and attributes to be included in potential homogeneous tourism destinations

In this step, we propose different combinations of tourism units and attributes in order to offer some proposals for potential tourism destinations (scenario). The choice is based on the reputation homogeneity criterion, after accounting for some constraints (e.g. the proximity of TUs and of characteristics) and priorities (specialization, excellence, inclusiveness, and complementarity). Using Figure 3, we select six scenarios, which are presented in Figure 4.

- **Scenario a.** Formed by two tourism destinations. Tourism destination a.1 includes three tourism units (TU2-TU4), and four attributes (PEOPLE, LODGING, RESTAUR, OPEN AIR). Tourism destination a.2 includes three tourism units TU8-TU10, and four attributes the same as in a.1.
- **Scenario b.** Formed by three tourism destinations. Tourism destination b.1 includes four tourism units (TU1-TU4), and four attributes (the same as in a.1). Tourism destination b.2 includes four tourism units (TU5-TU7), and four attributes (the same as in a.1). Tourism destination b.3 includes four tourism units (TU8-TU11) and four attributes (the same as in a.1).
- **Scenario c.** Formed by one tourism destination, which includes 11 tourism units (TU1-TU11), and four attributes (the same as in a.1)
- **Scenario d.** Formed by one tourism destination, which includes 11 tourism units (TU1-TU11), and five attributes (PEOPLE, LODGING, RESTAUR, OPEN AIR, SPORT)
- **Scenario e.** Formed by one tourism destination, which includes 11 tourism units (TU1-TU11), and six attributes (PEOPLE, LODGING, RESTAUR, OPEN AIR, SPORT, CULT)
- **Scenario f.** Formed by one tourism destination, which includes 11 tourism units (TU1-TU11), and seven attributes (PEOPLE, LODGING, RESTAUR, OPEN AIR, SPORT, CULT, ENTERT)

Scenario a selects the excellence and comprises the two tourism destinations with higher uniform reputation both for the TU's and the attributes' dimensions. In Scenario b, the proposal is to maintain three different tourism destinations: the territorial base is enlarged to cover the whole region. Incidentally, the Aosta Valley is usually geographically divided into three sub-areas called: *Alta Valle*, *Media Valle*, and *Bassa Valle*, which correspond to the partition presented in this scenario. In the next scenarios c, d, e and f, a unique tourism destination is identified, and the set of attributes are progressively expanded. Reasons of a

political (political alliances, linkages created by tradition and history, policies of inclusion of marginal regions etc.) or a technical nature (the reach of a critical mass, the need of adding complementary services etc.) could bring about an extension of the boundaries of the destinations, both for the geographical and the service space.

4.4 Evaluation of the degree of homogeneity and selection

Although the graphical representation of Figure 4 is useful to delineate *potentially* homogeneous destinations, the use of multilevel models is recommended in order to provide a quantitative assessment of the reputation homogeneity of the different scenarios presented in Section 4.3.¹⁷

In this application, the dependent variable (y_{ij}) expresses the satisfaction of the individual i belonging to group j , i.e the evaluation of a single tourist for the combination TU/service (represented by a cell in the map). Since the original data are expressed in a 5-point Likert scale, we have chosen to employ both the linear and the logistic multilevel models. In this second case the outcome variable has been dichotomized, taking the value of 0 for original values of 0, 1 and 2, and the value of 1 otherwise.¹⁸ The estimated logit model will have the form:

$$\log \frac{\pi_{ij}}{1 - \pi_{ij}} = \beta_0 + \beta_1 X_{ij} + u_{ij}. \quad (3)$$

The model allows us to identify the impact of individual and group variables on individual satisfaction by calculating the variance partition coefficient (VPC). The VPC measures the proportion of total variance that is due to the differences between groups. It ranges from 0 (when there are no group differences) to 1 (in case of no within-group differences). This can be written as:

$$VPC = \frac{\sigma_u^2}{\sigma_u^2 + \sigma_e^2} \quad (4)$$

Table 5 shows how the VPCs change according to the different scenarios.

INSERT TABLE 5 HERE

Both linear and logit models provide similar results. The first scenario reports extremely low VPCs, demonstrating the high homogeneity of the two tourism destinations in the considered aspects. If units or services are added, the VPCs increase. However, it remains relatively low (under 5 percent both when the linear and the logistic models are employed) until the Scenario d, where one single destination is planned with the five attributes. Scenarios e and f (especially in the linear case) provide too much increase in

¹⁷The models are estimated in Stata using the xtmixed command for the linear model and the xtlogit command for the logistic model, implementing a maximum likelihood estimation procedure using adaptive quadrature.

¹⁸We limit our analysis to two levels to reduce its complexity.

heterogeneity. In order to realize the inclusiveness, the excellence, and the homogeneity criteria, a possible conclusion of this application is that the whole region can be considered as a homogeneous tourism destination. As far as the main aspects to be promoted are concerned, the most excellent ones should be considered, while entertainment and cultural activities should be improved and upgraded before becoming a factor of the system of supply. On the contrary, the inclusion of cultural and entertainment aspects without planning an enhancement of their quality and relevance risks lowering the collective reputation of the whole Aosta Valley destination.¹⁹

5 Discussion and concluding remarks

This work aims to contribute to the literature on new forms of partnerships not anchored to administrative boundaries. Despite the diffusion of these practices, especially in the wake of the European Funds, the debate on the optimal size of a planning and development area is still preliminary.

In this paper, we focus on how to delineate the boundaries of a tourism destination. We propose a four-step procedure based on the collective reputation of the territorial units eligible to form a tourism destination. The first step is devoted to the identification of the most important attributes of the tourism supply, and of the territorial units which could be included in a tourism destination. We, then, create a map of the reputation of territorial units and attributes. In the third step, different scenarios are proposed, each of which contains the description of one or more potential tourism destinations. Finally, mathematical tools are employed to facilitate the selection of the most-preferred scenario.

The procedure has been applied to the case of the Aosta Valley, and has proved to be useful in order to understand which territorial units and tourism services could be considered for inclusion in a tourism destination.

Defining tourism destinations which are homogeneous in terms of reputation over both the geographical and the service dimensions may have important practical implications for the construction of a system of supply, for destination management activities, and for promotion purposes.

We show that there is some degree of discretion in defining tourism destinations. The characteristics of the tourism supply, economic, social and political priorities and the information available to the decision maker affect all the steps of the procedure. Socioeconomic factors and the political context intervene especially in the fourth step, where the definition of the boundaries of the tourist destinations are drawn, taking into account the tradeoffs between excellence and inclusion, specialization and complementarity of territorial units and services.

Nevertheless, some guidelines can be suggested for the selection of the optimal boundaries. If the degree of homogeneity within the tourism destination remains high when we extend the geographical size and the set of attributes, the inclusion of these additional

¹⁹These results lend support to the conclusions presented in the Strategic Marketing Plan for the Aosta Valley, commissioned by the Tourism Department of the Region in 2009 to be undertaken by an independent marketing company (SL&A, 2009. Piano di Marketing Strategico della Valle d'Aosta. Aosta).

territories and services is the suggested strategy. Usually, bigger areas obtain higher visibility, and can exploit economies of scale in promotional activities better than smaller ones.

When heterogeneity among areas is large, the focus on excellence should be preferred even if socio-political factors can push toward an inclusion strategy and the constitution of a unique tourism destination. The latter choice is more appropriate when the empowered authority is going to improve the quality of supply in one or more key services and/or territories, which are particularly weak. A way to identify the key attributes is presented in the first step, and the evaluation is in the second step. A direct intervention in the weaker points of supply is particularly relevant since as Butler (1980) noted, if some measures of consolidation are not undertaken, a tourist destination risks entering into a phase of decline.

The characteristics of the tourist supply can help to induce a larger or smaller degree of specialization. Specialization can be preferred for those territories where there are significant tourist flows, which are looking for highly specialized supply (e.g. sports such as golf, climbing, spas, etc.), and are only marginally interested in other attractions. Complementarity services can be suggested if tourist interests are not focused (e.g. a vacation has a cultural motivation, tourists may prefer to experience many different aspects of the supply in order to have a clearer perception of that place).

Future research efforts should focus on the segmentation of different tourists in order to better identify specific market segments. In the case of the Aosta Valley, for instance, as noted in the Strategic Marketing Plan, alongside the traditional territorial attractions such as castles, monuments, mountains, some *motivational* products such as extreme sports, mountain biking, and wellness and spas have a mature system of supply and a consolidated niche market segment.²⁰ Once the different segments are identified by asking, in the questionnaire, the principal motivation for the holiday and the activities performed, the procedure can be used to delineate the boundaries of a tourism destination specifically addressed to a certain target audience, even crossing the regional boundaries.

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²⁰While traditional territorial products relate to the question: “Where do you go on holiday?”, *motivational products* relate to the question: “Why do you go on holiday?”.

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Figures and Tables

	TU1	TU2	TU3	TU4	TU5	TU6
ATTR1	a_{11}	a_{12}	a_{13}	a_{14}	a_{15}	a_{16}
ATTR2	a_{21}	a_{22}	a_{23}	a_{24}	a_{25}	a_{26}
ATTR3	a_{31}	a_{32}	a_{33}	a_{34}	a_{35}	a_{36}
ATTR4	a_{41}	a_{42}	a_{43}	a_{44}	a_{45}	a_{46}

Figure 1: Map of reputation

	TU1	TU2	TU3	TU4	TU5	TU6
ATTR1					Tourism Destin- ation 2	
ATTR2						
ATTR3	Tourism Destination 1					
ATTR4						

Figure 2: Tourism destinations

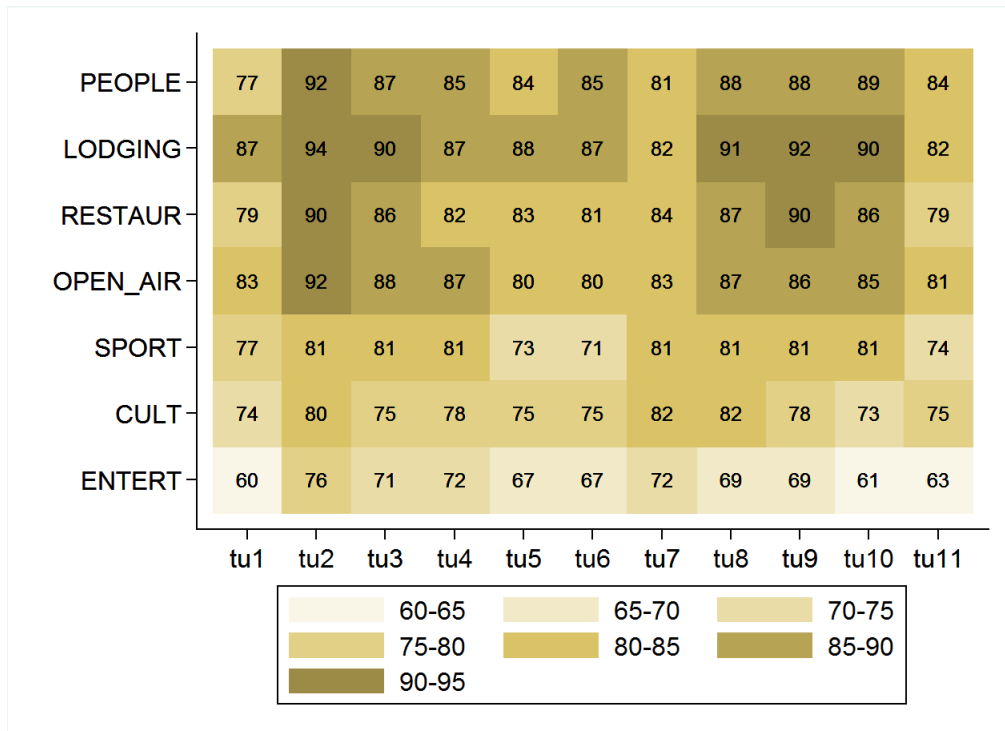
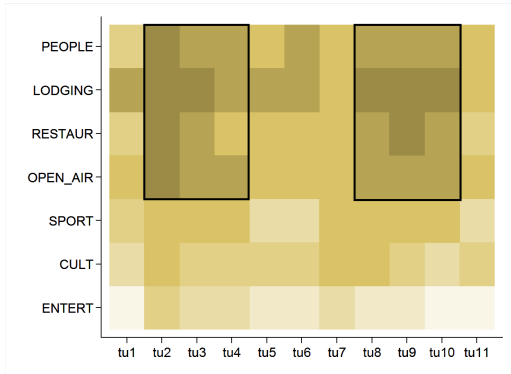
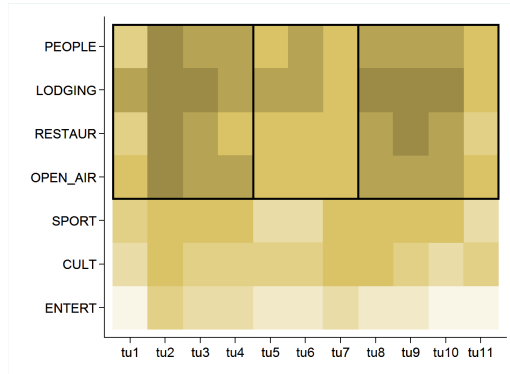


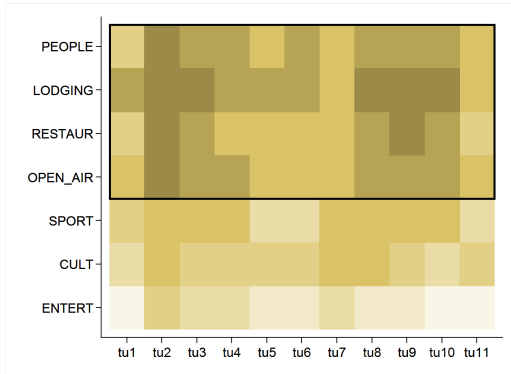
Figure 3: Customer evaluation of tourism units and attributes



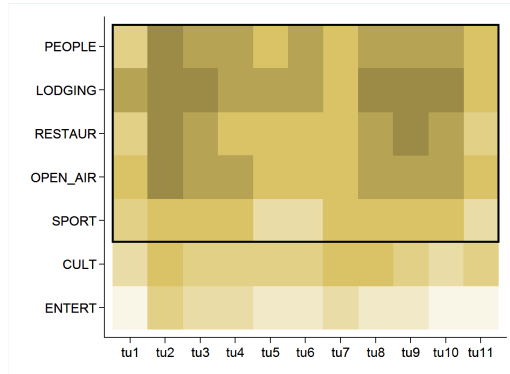
(a) 2 tourism destinations and 4 attributes



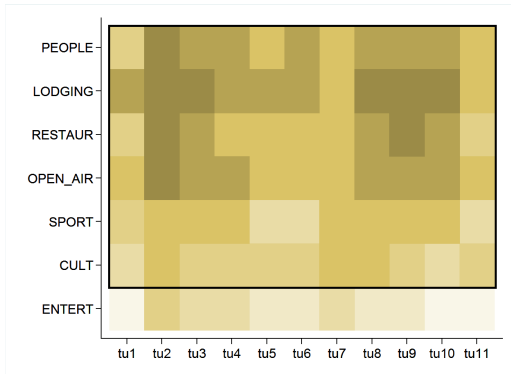
(b) 3 tourism destinations and 4 attributes



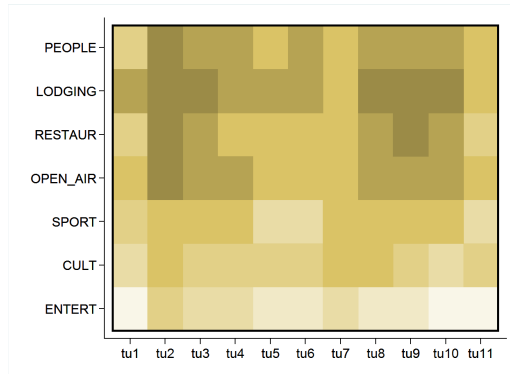
(c) 1 tourism destination and 4 attributes



(d) 1 tourism destination and 5 attributes



(e) 1 tourism destination and 6 attributes



(f) 1 tourism destination and 7 attributes

Figure 4: The six scenarios

Table 1: Descriptive statistics. Socio-demographic variables

Variable	Freq.	Percent	Cum.
Age			
18 – 21	69	4.89	4.89
21 – 30	200	14.18	19.08
31 – 40	406	28.79	47.87
41 – 50	378	26.81	74.68
51 – 65	279	19.79	94.47
> 65	78	5.53	100.00
Gender			
male	610	43.26	
female	800	56.74	
Education			
primary school	29	2.06	2.06
secondary school	173	12.27	14.33
high school	600	42.55	56.88
undergraduate	298	21.13	78.01
graduate	185	13.12	91.13
post-graduate	125	8.87	100.00
Origin			
North-West Italy	655	46.45	46.45
Rest of Italy	494	35.04	81.49
France	89	6.31	87.80
Rest of the world	172	12.20	100.00
Territorial units			
TU1	167	11.84	
TU2	168	11.91	
TU3	138	9.79	
TU4	261	18.51	
TU5	120	8.51	
TU6	108	7.66	
TU7	109	7.73	
TU8	85	6.03	
TU9	123	8.72	
TU10	79	5.60	
TU11	52	3.69	

Table 2: Descriptive statistics. Satisfaction variables

Variable	Description	level	Freq.	Percent	Cum.
HOLIDAY	Overall holiday	0	9	0.64	0.64
		1	10	0.71	1.35
		2	138	9.79	11.13
		3	744	52.77	63.90
		4	509	36.10	100.00
OPEN	Open air activities	0	6	0.43	0.43
		1	28	1.99	2.41
		2	206	14.61	17.02
		3	691	49.01	66.03
		4	479	33.97	100.00
SPORT	Sports activities	0	9	0.64	0.64
		1	35	2.48	3.12
		2	400	28.37	31.49
		3	641	45.46	76.95
		4	325	23.05	100.00
CULTURE	Cultural activities	0	10	0.71	0.71
		1	42	2.98	3.69
		2	398	28.23	31.91
		3	689	48.87	80.78
		4	271	19.22	100.00
ENTERT	Entertainment	0	37	2.62	2.62
		1	177	12.55	15.18
		2	482	34.18	49.36
		3	519	36.81	86.17
		4	195	13.83	100.00
GASTR	Eno-gastronomy	0	7	0.50	0.50
		1	29	2.06	2.55
		2	265	18.79	21.35
		3	646	45.82	67.16
		4	463	32.84	100.00
RESTAUR	Restaurant	0	7	0.50	0.50
		1	36	2.55	3.05
		2	223	15.82	18.87
		3	638	45.25	64.11
		4	506	35.89	100.00
LODGING	Lodging	0	6	0.43	0.43
		1	11	0.78	1.21
		2	187	13.26	14.47
		3	590	41.84	56.31
		4	616	43.69	100.00
PEOPLE	Cordiality of People	0	18	1.28	1.28
		1	45	3.19	4.47
		2	225	15.96	20.43
		3	533	37.80	58.23
		4	589	41.77	100.00

Table 3: Generalized logistic regression model for ordinal dependent variables, odds ratios

VARIABLES	(1)	(2)
OPEN	2.829*** (0.555)	2.658*** (0.368)
SPORT	1.325 (0.270)	1.154 (0.146)
ENTERT	1.186 (0.278)	1.592*** (0.207)
CULT	1.427* (0.301)	1.138 (0.147)
RESTAUR	1.469* (0.300)	1.564*** (0.225)
LODGING	1.780*** (0.319)	1.943*** (0.291)
PEOPLE	1.786*** (0.295)	2.062*** (0.261)
GASTR	1.285 (0.266)	1.244 (0.169)
Obs.	1,410	1,410

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All equations include controls for the origin and destination of tourists, their age, sex, title, and the composition of the party.

Table 4: Ordered logit model for asymmetric effects, odds ratio

VARIABLES	(HIGH)	(LOW)
OPEN	3.004*** (0.519)	0.423*** (0.081)
SPORT	1.042 (0.208)	0.768 (0.124)
ENTERT	1.090 (0.285)	0.597*** (0.090)
CULT	1.267 (0.268)	0.818 (0.126)
RESTAUR	1.325 (0.252)	0.544*** (0.104)
LODGING	1.909*** (0.333)	0.531*** (0.112)
PEOPLE	2.422*** (0.384)	0.685** (0.130)
GASTR	1.363* (0.252)	0.872 (0.158)
Obs.	1,410	

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All equations include controls for the origin and destination of tourists, their age, sex, title, and the composition of the party.

Table 5: Variance partition coefficients for the different scenarios. Linear and logistic regressions (in percentages).

logistic regression				
Scenario	TD1	TD2	TD3	mean
a	0.42	1.02		0.72
b	3.81	2.66	1.58	2.69
c	2.79			2.79
d	4.85			4.85
e	4.85			4.85
f	9.66			9.66

linear regression				
Scenario	TD1	TD2	TD3	mean
a	1.00	1.68		1.34
b	5.42	2.77	1.09	3.09
c	3.50			3.50
d	3.50			3.50
e	5.99			5.99
f	12.90			12.90

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1. Resmini, L., Siedschlag, I., Is Foreign Direct Investment in China Crowding Out the Foreign Direct Investment in other Countries? , Settembre 2012.
2. Crespi, G. P., Ginchev, I., Rocca, M., Robunov, A., Convex along lines functions and abstract convexity. Part II , Ottobre 2012.
3. Alderighi, M., Lorenzini, E. Which boundaries for a tourism destination? A proposal based on the criterion of homogeneous reputation, Ottobre 2012.



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