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STATISTICAL ANALYSIS OF TOURISM DESTINATION COMPETITITIVENESS

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1. INTRODUCTION

The growing relevance of tourism industry for modern advanced economies has increased the interest in the statistical analysis of destination competitiveness among researchers (Ritchie and Crouch, 2003; Weelington and Faria, 2003; Enright and Newton, 2004; Jang, Lee S.W., Lee S. and Hong, 2007), policy makers and international organisations (OECD, 2001; World Economic Forum, 2008).

Academic research has defined the mainstream theoretical model of tourism destination competitiveness by means of statistical analysis of cross section and time series data. Data envelopment analysis has been used to model the relationships among multiple objectives and multiple resources in cross section data (Woeber and Fesenmaier, 2002) and factor analysis has pointed out the main factors underlying competitiveness. The estimation of structural time series models has shown how destination image and customer satisfaction affect destination competitiveness; econometrics demand models have shown the role of price competitiveness; time series analysis has emphasized the effects of unit source combined with seasonality; finally, co-integration analysis and the error correction representation has split long term trend from short term fluctuations in destination competitiveness (Han, Durbarry and Sinclair, 2006; Chi and Qu, 2008).

International institutions grounding on the results of these theoretical works have developed sector based measures of tourism competitiveness and have defined the competitiveness ranking of tourism destinations at world global level (OCSE, 2001; World Economic Forum, 2008).

Despite the large amount of competitiveness analysis and the detailed ranking of tourism destination competitiveness, the tourist decision process has not received suitable attention in the scientific literature; nonetheless the competitive position of each destination derives from those decisions and it seems interesting to go straight to the heart of the subject, analysing the consumer decision process which leads to the holiday destination choices.

This paper aims at evaluating the competitive position of tourist destinations in the Italian tourism market defining a model of destination choice which enlarges

previous works with a detailed analysis of the tourist decision process underlying the selection of holiday destinations. We concentrate on a model of destination choice which allows the evaluation of destination features both for the *ex ante* demand schedule and for the *ex post* effective holiday choices. Moreover, we extend previous studies focused on image or attributes (such as climate and scenery) by paying more attention to the perceived supply conditions for accommodation and recreation (museums, amusement parks, wellness centres, transport services, information services). Our model focuses on the tourism decision process which starts from a list of the tourist destinations known by the consumer, proceeds with the definition of the demand schedule and ends with the choice of a specific holiday destination. The demand schedule is a function of individual preferences and destination positioning, while the final decision is a function of the initial demand schedule and the information concerning services for accommodation and recreation in the selected destinations. Finally, we develop a statistical test of the model on sample data based on Italian tourist destination decisions and choices.

Modelling the selection process of holiday destination, we evaluate the role of the supply conditions (price, quality, connections facilities, etc.) and of the brand position of each destination in the consumer process decision making.

We have collected data on the destination decision process from a sample of 1.200 Italian tourists interviewed in 2007 (October - December); sample data describe the destination preferences of Italian tourists and define their demand schedule and their consumer decisions. Data analysis shows the connections between demand and supply into the Italian tourist market, enlightens the relations between domestic and international market (destinations have been aggregated at regional level for domestic demand and at country level for holidays abroad) and displays the competitive position of Italian tourism destinations in this context.

The differences between preferences and choices are modelled with a transition matrix which describes the stochastic short run adjustment process and the long run tourism market trend.

Finally, we test the model (using data collected from the sample) and evaluate the factors affecting the process with which consumers manage their tourism decisions, envisaging two main phases:

– identification of the Italian tourists demand schedule for the various holiday destinations;
– evaluation of the final holiday destination choice of Italian people classified by region (for those who choose domestic destinations) and by countries (for those who choose foreign holiday destinations).

2. A MODEL OF TOURISM DESTINATION POSITIONING AND COMPETITIVENESS

The basic model of competitive analysis maintains that success in international competition in a given industry depends on "factor conditions" or "drivers" of competitiveness (which are based on a set of business related features) and other

factors such as human resources and infrastructures (Porter, 1990; Peter and Olson, 1990; Bergen and Peteraf, 2002). For the tourism industry the main factor conditions are supposed to be climate, scenery and image position (Ritchie and Crouch, 2003).

In this study we try to improve this approach in three directions:

1. introducing a new concept of *tourism destination* defined as a multiproduct firm *and* adding factors of competitiveness which reflect the heterogeneous supply structure of a tourism destination;
2. dividing the decision process in two phases: demand schedule and consumption choices;
3. testing the statistical significance of socio-demographic variables which are likely to affect preferences (demand schedule) and choices (tourism consumption).

Besides, we make this approach operative and obtain quantitative evaluations of destination positioning competitiveness in the different phases of the holiday decision process through the measurement of two main sets:

1. the consideration set of Italian tourists, that is the set of destinations which are considered eligible for their holidays;
2. the holiday set, that is the set of destination actually chosen for holidays.

Destinations evaluated during the selection process may be chosen more or less frequently for effective holidays; some tourism destinations are ruled out on the basis of information concerning accessibility, prices, connections facilities, marketing image, security and safety, while other may be appreciated during this process. Therefore, the destination market shares measured at the consideration set level (demand schedule) are generally different from the *ex post* market share (consumption decisions). The former are influenced mainly by the brand position of each destination, while the latter reflects also effective supply conditions of the considered destination (services quality, prices, trade channels, etc.). Some destinations have brand positions that are stronger than their effective tourism service supply and will lose customers during the decision process (mature destinations with declining market share) whereas other destinations have tourism products better than expected and will gain market share inside the decision process (emerging destinations with increasing market share).

Destinations in the global tourism market can be considered like firms which supply a large set of products (multiproduct firms); each destination product is identified by two sets of main attributes concerning the motivation and length of the trip.

The competitive position of each product/destination can be defined within four broad classes of competition (Ferrel *et al.*, 1998):

1. Brand Competitors (Weelington and Faria, 2003): products which share the same consumer target (for price and quality);
2. Product Competitors: destinations which differ in price and/or quality;

3. Generic Competitors: tourism services which satisfy the same needs;
4. Total budget competitors: very different products which can be competitive because of the tourist budget constraint only.

The four classes are characterized by increasing differences among products: from the brand competitors, which are similar and distinguished only by brand (e.g., Rimini and Viareggio beach), to budget competitors, which are quite different (wellness and amusement parks) and share the budget constraint only.

This approach allows to classify the products of a tourism destination in eight broad clusters (see table 1).

TABLE 1

Products of a tourism destination

Motivations of the trip	
Sun and sand	Sport
Amusement Park	Mountain, ski, etc.
City of art, culture and architecture	Meeting, convention, congress
Wellness	Fair exposition

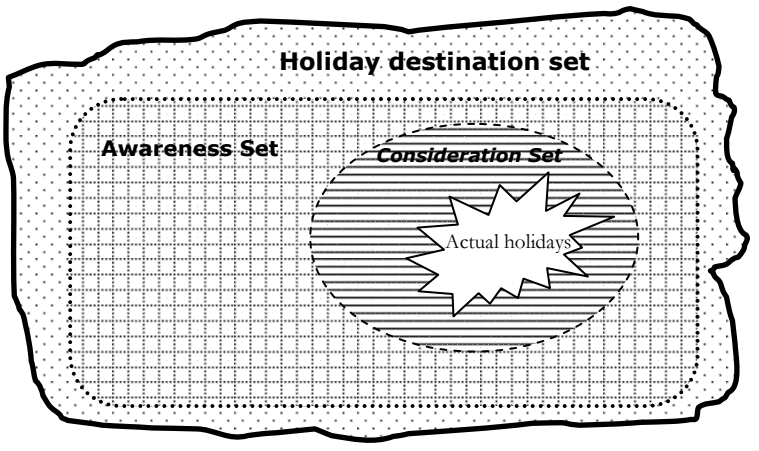
Within each cluster we distinguish long staying holidays (at least three nights) and short breaks (week end, less than 3 day night) and, for each cluster we consider two different products /wellness weekend and wellness long stay, for example).

Competitive analysis may be worked up measuring customer evaluation for each destination and mapping these data over the set of destinations in order to measure the probability of being chosen for each destination considered by tourists.

The choice of holiday destinations can be described by a four phase process:

– Definition of the set including all destinations recognised by the tourist as suppliers of (one or more) tourism products
– Collection of preliminary information concerning some of the destinations included in the previous set and identification of an information set relevant to the holiday decision process (awareness set).
– Selection of the destinations eligible for the final choice (consideration set).
– Final choice of the effective holiday destination.

The subset in which a destination is included is an indicator of different grade of competitiveness. The mapping of empirical data over the four subsets in the graph represent the *ex ante* probability to be chosen by tourists; these probabilities are expected to be increasing from the destination set to the holiday set, but choices are influenced also by the information concerning effective supply conditions aknowledged inside the decision process; therefore the *ex post* probability may be different. The former are influenced mainly by brand position, whereas the latter (the *ex post* probability of choice) are the mixture of the *ex ante* probabil-



Graph 1 – Mapping of the tourism decision process.

ity (brand image) combined with the distinctive features of each destination realized by consumers within the decision process.

2.1 *Questionnaire design and sampling scheme*

In order to measure the positioning of destination this study uses the construct defined in the previous paragraph that describes the decision process concerning holiday destinations and translates this construct into a questionnaire filled by a sample of Italian tourists.

The survey questionnaire consisted of four major sections:

– Section 1: questions designed to collect holiday habits and preferences for each tourism product (see table 1);
– Section 2: questions designed to collect tourist demographic information.
– Section 3: questions designed to measure Italian tourism demand schedule for the main tourism destination around the world (the set of destination evaluated by Italian tourists before the final holiday decision).
– Section 4: questions designed to identify effective holiday choices and to measure overnight stays of Italian population in each tourist destination.

The target population was Italian tourist interested in marine holidays. A stratified sample was projected for this population with *strata* defined by Italian regions and by demographic features (age, education, occupation and gender) of the Italian population. Confidence interval approach was used to determine the sample size at the 95% confidence level (the estimated variability in the population has been estimated through the ISTAT data on Italian holidays).

A pilot test was conducted to judge the internal consistency of the questionnaire items. The first draft of the questionnaire was distributed to 100 Italian tourists, randomly selected from the telephone directory, belonging to four macro

Italian geographic areas (North-East regions; North West regions, Central regions, South regions and Isles). A total of 68 completed surveys were given back and reliability analysis showed the strength of the items with little exceptions that allowed the development of the final survey questionnaire (available on request of the author).

The survey questionnaire has been submitted to a stratified sample of 1.200 Italian tourists with sample *strata* defined by region and by demographic features.

The database generated by this survey allows the analysis of tourist preferences, the measurement of the demand schedule and the analysis of the differences in tourism demand by attributes (gender, education, age). Furthermore, data analysis shed light on the decision process by which Italian tourists review the set of destinations which meet their needs (consideration set), in order to achieve information concerning the destinations of interest and to choose the effective destination for their holidays.

3. MAIN RESULTS

3.1 *Holiday preferences structure: the Italian's demand schedule by type of destination*

Marine destinations are still the favourite of Italian tourists with a share higher than 60%. Mountain and art cities destinations follow with shares of 16.03% and 14.75% respectively. Other types of holiday destinations have smaller and quite negligible shares.

TABLE 2

Holiday preferences in world destinations

Destination typology	*Share*
Sea, sun and sand	62.13%
Culture and art cities	14.75%
Mountain	16.03%
Tour	3.97%
Cruise	0.71%
Wellness	0.99%
Other (religion, country and sport)	1.42%

In general, gender attributes are not important to explain the differences in marine holiday preferences; for all types of holiday they are only slightly statistically significant ($\chi 2=20{,}256$; p-value $=0{,}041$). Gender differences are relevant for mountain destinations which are strongly preferred by men (20.9% of share against 13.45% for women) and for art cities destinations which are preferred by women (16.5% against 12.54% for male). Marine destinations (sea sun and sand holidays) have the largest share both for men and women, without relevant gender differences.

TABLE 3

Holiday preferences by gender

	Preferred Holidays	
	Women	Man
Sea, sun and sand	62.17%	62.06%
Culture and art cities	16.50%	12.54%
Mountain	13.45%	20.90%
Tour	5.08%	2.57%
Cruise	1.02%	0.32%
Wellness	1.02%	0.96%
Other (religion, country and sport)	0.76%	0.64%

Analyzing holiday preferences by education we find relevant differences among tourists with different schooling levels: graduates have the smallest preference for sea holiday and the highest preference for culture and art cities holidays, while marine destinations are preferred mainly by primary school level tourists. The effect of education levels on holiday preferences is stronger for all types of holidays. In general the differences in holiday preferences classified by school levels are statistically significant (the null hypothesis is rejected with high probability level: $\chi^2 = 150{,}31$; p-value $= 2.9\ e^{-20}$).

TABLE 4

Holiday choices by schooling levels (world destinations)

	primary school	secondary school	university degree
Sea, sun and sand	64.79%	61.59%	59.82%
Culture and art cities	12.75%	11.26%	20.72%
Mountain	16.15%	20.33%	11.23%
Tour	3.25%	3.40%	5.38%
Cruise	0.40%	0.59%	1.17%
Wellness	1.42%	1.04%	0.48%
Other (religion, country and sport)	1.24%	1.80%	1.20%

3.2 *Preferences and choices: the effective Italian tourism demand*

Actual holidays choices do not always follow preferences: for some classes of destinations the gap between preferences and actual choices is positive (sea and mountain) while for other destinations (art cities, tour, culture, wellness, and religion the gap) is negative. Italian consumer spend less days than desired in marine and mountain destinations; art cities are the main recipient of this change in tourism demand.

The most important gap between preferences and choices concerns marine destinations which lose 10.21 percentage points of their potential demand for holidays in the decision process going from preferences to choices; art cities and tour have an opposite gap: for these types of holidays Italians buy more trips than desired (+5.38% and +3.54% respectively); also wellness and cruise benefit from the loss of marine destinations.

Destinations	Preferences	Choices	Gap
Sea, sun and sand	62.13%	51.92%	-10.21%
Culture and art cities	14.75%	20.13%	5.38%
Mountain	16.03%	14.54%	-1.49%
Tour	3.97%	7.51%	3.54%
Cruise	0.71%	2.56%	1.85%
Wellness	0.99%	2.08%	1.09%
Other (religion, country and sport)	1.42%	1.28%	-0.14%

The table shows only the net balance of the decision process, compensating in the statistical data cross flows of opposite sign; analysis of the collected data at the individual level reveal dynamics of noteworthy relevance regarding the theoretical structure previously outlined and generate strong differences between demand schedule and holiday choices. The differences between preferences and choices are much larger at individual level and damage mainly marine destinations. Shifts among different types of holiday in the process going from preferences to choices have strong relevance in the final phase (booking) of the holiday decision process.

In the following section, the most significant data of the transition matrix will be discussed and commented with reference to the transformation of the demand schedule in actual consumption choices.

3.3 *The transition matrix: from preferences to choices*

Analysing micro data we can define a transition matrix (preferences choices). The main diagonal of the matrix shows the percentage of tourists whose choices agree with their preferences (demand schedule), while the off diagonal elements identify tourists who changed their choice during the destination selection process.

These data point out the real flows from different types of holidays during the final phase of the decision process. Marine destination lose about 25% of their customers mainly in favour of art and culture cities (18,6%); the opposite flow is still more relevant: 32% of tourists who prefer culture holidays in art cities select a marine destination for their effective holidays; however the absolute dimension of these flows (overnights stay) is lower than that going from marine to art city destinations because of the lower share of culture and art cities demand schedule. Other significant flows concern cruise preferences (20,2% of cruise customers choose culture and art city destinations), country and sport holidays destinations that lose half of their customers in favour of art cities and marine destinations (25,1% and 25,4% respectively).

The coherence between preferences and choices is the greatest among cruise tourists (80%) and the lowest among culture and art cities destinations (61%).

TABLE 5

Effective choice destinations distribution for each preference class

	Holiday preferences					
	Cruise	Wellness	Culture...	Mountain	See, sun and sand	Other
Holiday choices						
Cruise	79.8	0	3.13	4.2	2.1	9.3
Wellness		72.4	0.54	1.4	1.0	
Culture, art cities tour	20.2	0.00	61.52	22.9	18.6	25.1
Mountain	0	9.2	2.69	38.1	2.1	0
See, Sun and sand		0	31.98	32.0	75.3	25.4
Other (religion, country and sport)		18.4	0.15	1.4	1.0	40.2
Total	100	100	100	100	100	100

The gap between demand schedule and actual holidays choices is affected by the information gained during the booking phase regarding prices, security, commercial channels, accessibility (airport and route connections) and supply structure of the destination (vertical integration *versus* specialized firms). The organisation of hospitality services inside the destination is an important factor in this process: vertical integration of the tourism sector, at least at the commercial level (holiday package), could support choices in the booking phase, while holiday destinations organised by separate specialised firms supplying accommodation, restoration, leisure and auxiliary services (beach umbrella and deckchair for marine holidays and ski lift for mountain holidays) are penalized in the transformation of the demand schedule in effective choices. Marine holidays are the most damaged in this process. The price factor is relevant not only for its level, but also for the pricing model (all inclusive *versus* multiple pricing for the different services) which is connected to the organisation of the firm inside the destination.[1]

3.4 *Consideration set of Italian tourists*

The differences existing between preferences and choices highlighted in the previous section may be understood better by a detailed analysis of the decision process of Italian tourists through the identification of the consideration set which includes all the destinations that Italian tourists consider eligible for their holidays; those destinations are evaluated in the selection process and can be selected for effective holidays or ruled out in favour of other destinations.

The survey questionnaire has explored the three main destinations evaluated by Italian tourists before the final decision. Therefore, the database of the project allows the identification of the consideration set and allows the comparison between the effective holiday destination and the set of the alternative destinations considered before the final choice (consideration set).

[1] Pricing model does not depend directly from the productive structure: a system of small firms specialized in accommodation, restoration, leisure, and auxiliary services, may be linked at the commercial level and could therefore be able to propose package holidays structurally competitive with those of the vertical integrated firms.

Global consideration set (Italian regions and foreign countries)	
	Share
Spagna	9.49%
Sardegna	8.10%
Trentino	6.60%
Sicilia	6.16%
Emilia-Romagna	5.77%
Puglia	4.73%
Toscana	4.54%
Francia	3.91%
Liguria	3.71%
Greece	3.60%
Total top ten	56.61%
Regno Un	3.50%
Lazio	2.83%
Campania	2.59%
Veneto	2.47%
Croazia	2.23%
Calabria	2.17%
Marche	2.13%
Egitto	2.00%
Oland	1.60%
USA	1.60%
Total top twenty	79.34%

This analysis answers to some interesting questions. Which destinations are considered in the holiday destination selection process by Italian tourists (consideration set)? Is the frequency of inclusion in the consideration set a correct measure of the probability of being selected for holiday? The frequency of inclusion in the consideration set can be a proxy of the potential demand for a holiday destination? Which process can explain the transition from the consideration set to the destination set (randomness *versus* causality)? And, in the causality hypothesis, which factors determine the selection of the effective holiday destination among those eligible (destinations included in the consideration set)?

The set of destinations which Italian tourists consider eligible for holiday frequently includes foreign cities. Spanish (9.49%), French (3.91%) and Greek (3.60%) destinations have the largest shares. Some Italian regions are well positioned too in this ranking of potential holiday destinations: Sardinia (8.10%), Veneto (6.6%), Sicily (6.16%) and Emilia Romagna (5.77%). Globally, foreign cities have a share of 56.2% among Italian tourists, while the share of domestic destination is 43.8%. Focusing on the top ten destinations in the consideration set, Italian destinations have a share of 69,9% and foreign cities have a share of 30,1%.

This picture shows that foreign destinations are globally very relevant in the consideration set, but each one has a thin share. In the consideration of Italian tourists the preferences for domestic destination are more concentrated than those for foreign destination; foreign destinations have a total share of 43% but each foreign city has a tiny part of Italian tourists. In the top ten destinations, Italian Cities have a large majority, whereas considering all destinations, foreign cities prevail. This aspect is relevant for the selection process, because destina-

tions with a large share in this phase act as catalyst and move together other tourists.

The transition from the consideration set to the destination set (effective cities chosen for holiday by Italian tourists) shows that foreign destinations are more frequently discarded in favour of Italian destinations. Foreign destinations (holidays abroad) are chosen only by 16.8% of Italian tourists while the remaining 83.2% spend their holidays in Italian cities. The three most important Italian regions which benefit from this process are Tuscany (+4.44%), Emilia Romagna (+2.46%) and Liguria (+1.36%).

Among the top ten destinations there are many Tuscany cities with shares larger than those emerging from the consideration set; Emilia Romagna and Liguria too have a share of effective tourism demand larger than the share of preferences. Foreign destinations have an opposite situation: Spanish destinations are considered by 9.49% of Italian tourists, but only 2.08% do effective holidays in Spain destinations.

	consideration set (preferences of Italian tourists))	destination set* (effective tourism demand)	***differences***
Spain	9.49%	2.08%	*-7.41%*
Veneto	6.60%	5.82%	*-0.78%*
Emilia-Romagna	5.77%	8.23%	*+2.46%*
Tuscany	4.54%	8.98%	*+4.44%*
France	3.91%	2.94%	*-0.97%*
Liguria	3.71%	5.07%	*+1.36%*
Greece	3.60%	1.26%	*-2.34%*

Source: ISTAT (2007).

4. CONCLUSIONS

The analysis of Italian tourist preferences and choices underline two main results:

1. the transition from the demand schedule to the effective holiday choices is a process that is relevant for the competitiveness of destinations;
2. the selection process of the holiday destination inside the destination set is not random but it is managed by the information acquired before or during the booking phase.

The distance between the *ex ante* demand schedule (pointed out by the consideration set) and the *ex post* data concerning effective holidays (synthesis of demand and supply) is influenced by a lot of factors, but the most relevant are the katalizing effect, which transfers customers towards the destinations with a larger market share, and the organization effect, which suppors vertical integrated destinations.

Besides, data analysis has also shown other results: the evidence coming from the transition matrix proves the existence of disequilibrium situations inside the tourist market. A large disequilibrium level regards foreign demand of Italian tourists: Italian domestic tourists market embodies a demand for foreign holidays currently unsatisfied. In the near future the potential demand for foreign holiday

could become actual demand with relevant negative effect for Italian destinations. Advance in globalization and low fare air connections could speed up the process. Italian destinations should modify their brand image, and their competitive position to avoid progressive cuts of their market share linked to the fulfillment of the preferences shown by preferences analysis.

In general, the differences between the consideration set and the destination set reflect three sets of phenomena:

1. the stochastic short run process, described by the transition matrix;
2. the long run equilibrium position defined by the overlapping of preferences and choices;
3. the inconsistency of actual domestic supply (positioning and competitiveness) in comparison to consumer preferences. Moreover, there is a propensity to increase foreign holidays which is not yet satisfied.

The probability of being selected for effective holidays is not proportional to the share of inclusion in the consideration set of each destination, because the selection process among the eligible destination is driven (not randomly) by two factors:

1. the information concerning supply conditions of each destination acquired during the decision process (holiday prices, firms structure, destination organization, connections facilities, security and safety perception);
2. the cumulative (snow ball) effect which determines a collective convergence toward the dominating destinations (destinations with large share cannibalize those preferred by small groups of tourists).

The need for holidays abroad of Italian tourists does not yet convert in effective foreign demand because the snow ball effect minimizes the transformation of intentions into choices. At the present time, this process supports Italian firms and mainly the destinations located in the northern Italian regions, but the outlook points out a risk of market share reduction for the whole Italian tourism system in the global market.

Disequilibrium of Italian marine destinations tourism supply has two opposite aspects; on the one hand, their organization missing vertical integration and price coordination of tourism services points out a relevant loss of potential customers, on the other, the snow ball effect supports these destinations because of their large market share. The net effect is negative because the former is stronger and determines a substantial loss of potential customers: overnights stay are lower than expected on the basis of the demand schedule.

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SUMMARY

Statistical analysis of tourism destination competitiveness

The growing relevance of tourism industry for modern advanced economies has increased the interest among researchers and policy makers in the statistical analysis of destination competitiveness. In this paper we outline a new model of destination competi-

tiveness based on sound theoretical grounds and we develop a statistical test of the model on sample data based on Italian tourist destination decisions and choices. Our model focuses on the tourism decision process which starts from the demand schedule for holidays and ends with the choice of a specific holiday destination. The demand schedule is a function of individual preferences and of destination positioning, while the final decision is a function of the initial demand schedule and the information concerning services for accommodation and recreation in the selected destinations. Moreover, we extend previous studies that focused on image or attributes (such as climate and scenery) by paying more attention to the services for accommodation and recreation in the holiday destinations. We test the proposed model using empirical data collected from a sample of 1.200 Italian tourists interviewed in 2007 (October - December). Data analysis shows that the selection probability for the destination included in the consideration set is not proportional to the share of inclusion because the share of inclusion is determined by the brand image, while the selection of the effective holiday destination is influenced by the real supply conditions. The analysis of Italian tourists preferences underline the existence of a latent demand for foreign holidays which points out a risk of market share reduction for Italian tourism system in the global market. We also find a snow ball effect which helps the most popular destinations, mainly in the northern Italian regions.