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Sustainable Tourism Products Distribution: Optimal Pricing and Branding Strategies

This paper considers the issue of sustainable tourism products distribution by an intermediary, offering as well traditional, i.e. not necessarily environmentally friendly, products. Given the complexity of demand's heterogeneity and its characteristics, the intermediary faces multiple strategic choices. Considering the contributions of related literature, this paper's positioning is indicated. Then, in the third section the motivations of this study are presented, followed by the presentation of the model, in section 4 and, some of the first results in section 5. Finally, future developments are described in the concluding section, tending to indicate optimal pricing and branding strategies in different cases depending on demand's characteristics and forms.

Key words: sustainable tourism, demand heterogeneity, pricing, price discrimination

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Malgorzata Ogonowska is currently a PhD student and lecturer in economics at the University of Nice – Sophia Antipolis, at GREDEG Research Department, in France. This paper corresponds to the third chapter of the thesis, entitled "Re-intermediation and Pricing Strategies in e-Tourism", that is nearly completed. Her main research questions are pricing and distribution strategies of niche products in the e-tourism sector. Her emphasis has been placed on new methods of price discrimination implemented by tourism intermediaries.

Introduction

Tourism includes a wide range of economic activities that have an important impact on the environment and the local populations of the destinations. Environmental protection and awareness became the major issues in the 1990s when the concept of sustainable development was introduced in Our Common Future by the Brundtland Commission (World Commission on Environment and Development, 1987). Thus, tourists are more and more aware of environmental issues. Consequently a new segment of demand, desiring environmentally responsible products, has appeared. These new concerns modify tourists' perceptions of destinations, of accommodation brands and of intermediaries distributing tourism products (tour operators, on-line and off-line tourism agencies etc.). Thus, the intermediaries have to adapt their product range to those requirements. Sustainable tourism concepts were developed and became an important issue in tourism related literature. According to *Associazione Italiana Turismo Responsabile* (quoted by Cracolici, Cuffaro & Nijkamp, 2009), sustainable tourism is defined as "every tourism activity that preserves for a long time the local natural, cultural and social resources, contributing to the well-being of individuals living in those tourist areas".

Meanwhile, two segments of demand co-exist: consumers who are environmentally aware and search for sustainable tourism products, and those, who are more interested in other characteristics of the offered services (e.g. prices, luxury standards etc.). The issue of this paper is: may these different segments be served through the same market by the same intermediary and what distribution strategy should it implement in order to distribute different types of products? Given the demand characteristics should it create separate brands for this purpose?

In order to consider those questions, this paper is organised as follows. The second section presents the contributions of the literature on sustainable tourism and on pricing and

distribution strategies of tourism products. This literature review indicates the positioning of this paper – on the crossing of those two specific concerns. Then, in the third section the motivations of this study are presented, followed by the presentation of the model, in section 4 and, some of the first results in section 5. Finally, future developments are described in the concluding section.

Literature Review

Literature related to sustainable tourism questions is quite various and thus is interested in diverse economic aspects of those issues. In consequence it can be classified in several categories. The first identified category is founded on Bramwell's and Lane's definition of sustainable tourism (1993), that is "an economic development model conceived to improve the quality of life for the local community, and to facilitate for the visitor a high-quality experience of the environment, which both the host community as the visitors depends." In this point of view sustainable tourism ought to first of all assure the relationship between the local community and the tourists; in consequence, the local governments and administrations should develop appropriate policies (for more information on this issue see Accinelli, Brida & Carrera (2008); Caserta & Russo (2002)). Those policies should also focus on environmental protection by helping market actors implement measures and amenities that are ecologically responsible. This point was emphasized by Rivera (2002), Shen & Zheng (2010) and Weaver (2005). In order to smooth the progress of the environmental policies' implementation, there is a need to educate the market actors (hotel management, tourism agents, tour operators, administration), as well as, the whole population with the objective to adapt people's perceptions into this new long term vision (Nita & Agheorghiesei, 2010). The implementation and adjustment of the amenities and equipments in order to be more environmentally friendly can be impelled by demand's desires, which

represent the second identified category of the literature. The environmentally aware tourist segment may influence the service providers to invest in their facilities' modernisation to make them more ecological (Accinelli, Brida, Carrera & Pereyra, 2007; Brau, 2008; Claude & Zaccour, 2009; Minciu, Popescu, Padurean, Hornoiu & Baltaretu, 2010). In order to get the return on his investment, service providers may increase the prices of products including "green" amenities in comparison to traditional (more "polluting") products. Finally, price discrimination practices can be observed in natural reserves tickets pricing. Indeed local visitors (verified in the 3rd world countries) pay lower fees than the tourists (for more extensive analysis on this issue see Becker, 2009; and Walpole, Goodwin & Kari, 2001).

None of the existing papers on sustainable tourism issues is concerned by the questions of pricing for "green" products (besides the literature on natural reserves tickets pricing) and the strategies of their distribution. For that reason this paper combines the contributions of the articles on sustainable tourism with the literature on tourism intermediaries' distribution and price discrimination strategies (Clemons, Hann & Hitt, 2002; Gallego & van Ryzin, 1994; Fay, 2008; Feng & Xiao, 2000; Fleishmann, Hall & Pyke, 2004; Fleishmann, Hall & Pyke, 2004; Shapiro & Shi, 2008; Stokey, 1979; Zhao & Zheng, 2000).

Motivations

An online intermediary (also called a firm in this paper) distributes two types of tourism products to two types of markets: a traditional tourism services market and sustainable tourism products market. To the first one, the firm offers a range of "polluting" (*i.e.* not ecological) products that are differentiated by their prices. To the second one, it offers the ability to search for products that will correspond to their environmental sensibility, although also to their propensity to pay. Subsequently, it should be noted that there are two types of demand heterogeneity. First, the consumers are differentiated by their propensity to

pay for a given product. This heterogeneity is the causal reason of demand segmentation and usually it justifies the application of traditional price discrimination. Nevertheless, a second type of heterogeneity is considered that concerns consumers' sensitivity to environmental issues. Accordingly, in the segment of consumers willing to purchase sustainable tourism products, the agents are differentiated by their preferences. They may search luxurious products that respect the environment or prefer to purchase simpler (less luxurious) "green travel" products. This double heterogeneity involves multiple strategic choices for the intermediary.

The model

This paper includes a game representing a firm facing a heterogeneous demand. The demand's heterogeneity is modelled *à la Hotelling* (Hotelling, 1929); assuming that the *n* agents are distributed in two subpopulations: *m* of them, uniformly distributed on a segment $[0,\bar{\alpha}]$, are concerned with environmental issues and are willing to purchase a sustainable tourism product and the remaining (*n*-*m*), also uniformly distributed on the same segment $[0,\bar{\alpha}]$, want to purchase the best quality product at the best price and are not considered with environmental concerns. Both subpopulations have the following choices. They can purchase a standard tourism product or purchase a sustainable tourism product. The consumer's choice depends on his utility function:

$u_{iT} = \alpha_i - P_T + \beta$, where α_i indicates the agent's position on the segment $[0,\bar{\alpha}]$, P_T – the price of traditional tourism product and β – the quality of this product.

$u_{iS} = \alpha_i - P_S + \gamma + g$, where α_i indicates the agent's position on the segment $[0, \overline{\alpha}]$, P_S – the price of sustainable tourism product, γ – the quality of this product and g – tourist's sensibility to environmental concerns, with $g = (0, \overline{g})$.

First Results

Considering different degrees of demand heterogeneity, the intermediary can develop three distributions strategies:

1. It can commercialise only the traditional product, while the demand heterogeneity is not too important and while the consumers are more price sensitive than concerned with environmental issues. Then, all consumers are willing to purchase traditional products and they are differentiated by their propensity to pay, probably because the sustainable product is relatively expensive and they are not enough sensible to environmental issues. In this case there are $\frac{n(P_T - \beta)}{\overline{\alpha}}$ agents on the market. Then, the intermediary distributes only the traditional products on the traditional market. In this case, the firm's profits are:

$$\Pi_1 = \frac{n}{\overline{\alpha}}\left[\overline{\alpha}\frac{(\overline{\alpha}+\beta)}{2} - \left(\frac{\overline{\alpha}+\beta}{2}\right)^2 + \beta\frac{(\overline{\alpha}+\beta)}{2}\right]$$

The profits increase when the quality of the product increases and the more consumers the intermediary serves, as illustrated on figure 1.

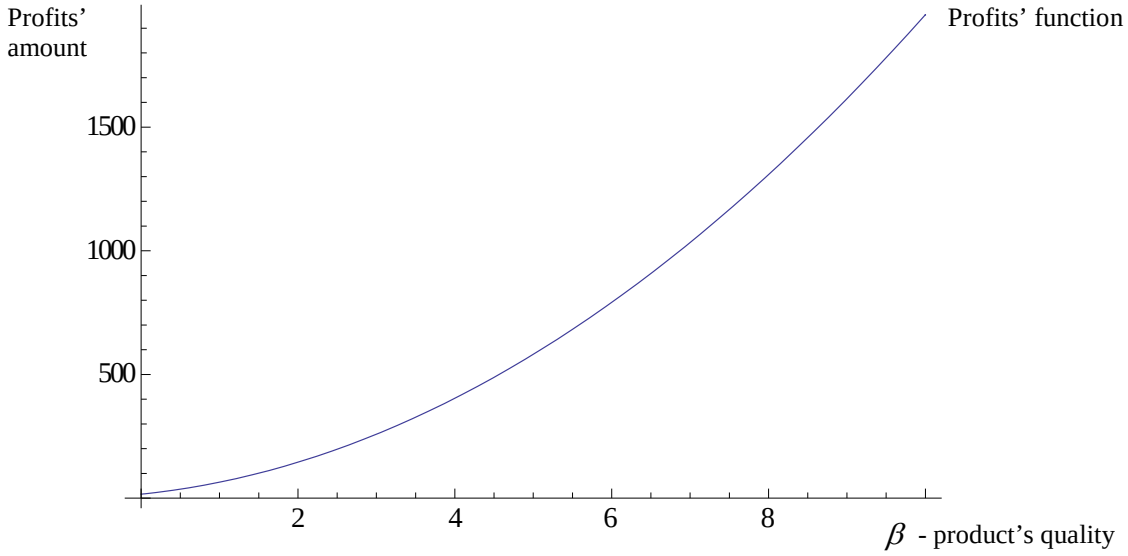

Figure 1: Intermediary's profits in the first case

2. In the second case, $\frac{(n-m)(P_T-\beta)}{\overline{\alpha}}$ consumers are willing to purchase traditional products. There are also $\frac{m(P_s-\gamma-g)}{\overline{\alpha}}$ agents who are sensible to environmental issues and are interested in purchasing sustainable tourism products. Subsequently the intermediary distributes both types of services on two types of markets.

In this case the firm's profits are:

$\Pi_2 = \frac{(n-m)}{\overline{\alpha}}\left[\overline{\alpha}P_T - P_T^2 + \beta P_T\right] + \frac{m}{\overline{\alpha}}\left[\overline{\alpha}P_S - P_S{}^2 + \gamma P_S + gP_s - c\gamma^2\right]$ where c is an additional cost of sustainable tourism product corresponding to investment in maintaining the ecological quality standards. Considering this cost and sustainable product's quality level two following situations are possible.

If $\beta > \gamma$, the quality of traditional product is higher, then the quality of the sustainable one. This case corresponds to the simpler less luxurious "green" product.

If $\beta < \gamma$, the quality of sustainable tourism product is higher than the quality of traditional one, because beside luxury standards it corresponds to ecological

standards. In this case, a "high quality" luxurious ecologically responsible product is considered and it will probably be more expensive than the traditional product, because of the required investments in amenities. But, if the price of sustainable product is too high, some of environmentally concerned agents (or even all of them) might decide to purchase a traditional, "polluting" but less expensive product.

3. In this last case the demand heterogeneity is low. Let us consider that all of the agents are interested in purchasing the sustainable tourism product, probably because they are all concerned with environmental issues. There are $\frac{n(P_s - \gamma - g)}{\overline{\alpha}}$ agents in the market. In this case, the firm's profits are: $\Pi_3 = \frac{n(\overline{\alpha}P_S - P_S^2 + \gamma P_S + gP_S - c\gamma^2)}{\overline{\alpha}}$.

The profits increase when the number of consumers increases, as well as their sensibility to environmental issues. The profits decrease while the costs increase. Considering the quality of the product, an optimal level, maximising the profits, must be determined.

Conclusion and future research

First, the research intends to find the optimal distribution, pricing and branding strategy for online travel intermediaries. The results depend on the form and the characteristics of the demand function. If the demand's heterogeneity is low, the firm serves only one of the segments, thus it will develop only one brand. Otherwise, with high demand heterogeneity the firm tends to serve both of the segments and consequently, according to our intuition, it will develop two separate brands (distributed on the separate websites) in order to operate on both types of markets – the sustainable tourism market and the traditional one. Although, if environmentally aware tourists appreciate that the firm offers "green" products and while they can purchase them, they do not bother that the same retailer distributes also traditional not necessarily environment respective products, the firm will develop only one brand and

will distribute both types of products, as complementary offers, on the same website. Otherwise, when the tourists are very sensible to environmental issue, they do not accept that the same intermediary distributes sustainable tourism products while offering also "polluting" ones, then the firm has to create two separate brands in order to serve two types of demand. This double branding strategy includes additional costs for the intermediary corresponding to the creation of a new "ecologically responsible" brand and to maintaining its quality and confidentiality of its parent company in order to preserve its reputation. It has to be mentioned, that these last results are still at the state of intuition. Further research is being conducted in order to validate the reputation effects on the intermediary's strategic choices.

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