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## **NUDGING TOURISTS IN PROTECTED AREAS: BREAKTHROUGH STRATEGY FOR DEVELOPING ECO-SUSTAINABLE GOODS AND SERVICES**

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### **Abstract**

The purpose of this paper is to examine to what extent and in what forms the nudge that can be implemented by protected area's management can be seen as a strategy for developing eco-sustainable goods and services. Therefore, the paper identifies the nudging measures applied by protected areas's managers to influence tourists behaviour in order to consume eco-sustainable goods and services. The paper relies on an exploratory case study of National Park of Sibillini Mountain, Italy. The empirical evidence was collected through secondary data, observation and interview with the manager of the park. We report that the National Park's management through nudge tools influence the tourist behaviors in order to make tourists act more responsibly and to consume eco-sustainable goods and services. Overall, this study contributes to literature by revealing the nudge tools that can be applied by natural protected area's managers in order to develop strategy for eco-sustainable consumption.

**Keywords:** sustainable consumption behavior; nudging measures; protected areas; eco-sustainable goods and services

**JEL Classification:** M1, M2, O1, Q5, Z3, Z32

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### **Introduction**

Of particular interest and complexity in behavioural sciences are issues regarding the understanding of human behaviour and factors influencing behavioural change and the developing of useful strategies in order to help policy makers for improving welfare and sustainable consumption (Berg, 2011; Schrader and Thøgersen, 2011).

Recent studies in behavioural sciences have focused on the less rational nature of humans and the importance of behaviour biases and the decision context - the environment in which individuals make choice.

Although considerable research has been devoted to choice architecture which refers to the informational and physical structure of the environment which influence the way in which choices are made, rather less attention has been paid to nudges which refer to focused changes in the choice architecture "that alters people's behaviour in a predictable way without forbidding any options and significantly changing their economic incentives"

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(Thaler and Sunstein 2008:8). The recent findings of Sunstein (2014a, 2104b) has led to the conclusion that nudge can be a strategic measure for encouraging sustainable consumption behaviours.

The purpose of this study is to review the nudging measures - simplification and framing of information; changes to the physical environment; changes to the default policy; the use of social norms - that can be implemented in protected areas in order to develop strategies for eco-sustainable goods and services, focussing on how the management of Sibillini Mountain National Park influence the behavior of tourists through nudging measures to determine them to consume eco-sustainable goods and services.

### **1. Literature review**

In the literature there are several examples of new strategies for behaviour change, but one will continue to draw the attention of the reserachers and policy makers in sustainable consumption: nudging. The role of choice architecture and nudge in inducing changes in context specific behaviour were first analyzed in 2008 by Richard Thaler and Cass Sunstain in the book *Nudge: Improving decisions about health, wealth and happiness*. According to Hall (2013) nudge influences social or physical environment's choice architecture in order to promote behaviour that is beneficial for individuals or society as a whole. Sunstain (2014a, b) argued that nudging is a tool to increase sustainable consumptions behaviour. In 2016, Matthias Lehner et al have reviewed this argue and reported that nudges might be possible salient measures in order to minimize the environmental impact in three sustainable consumption's domains: energy, food and transport.

In literature more authors highlight that the nudge comprises four types of tools: simplification and framing of information; changes to the physical environment; changes to the default policy, and use of social norms.

In 2016, Matthias Lehner et al. discussed that the nudge is based on not only the amount or accessibility of information, but also like the information is presented. For example, providing simplified information and signifiers - information that is added to a context to make information more salient - adapted to a particular choice situations increases the possibilities of influencing consumers. Viachaslau Filimonau et al (2017) found that clients base their choices, when dinning out, on a limited numbers of determinants and thus the salience of various determinants matters. Based on the customer survey conducted among visitors to a UK casual dining restaurant, they reported that next to price, the salience of detrminants as food provenance, nutritional value and food carbon values determined consumer choice when dining out. Therefeore, restaurants should design the menu as a customer nudging tool which can enable people to make choice more beneficial from the sustainability perspective. In his study, Wansink et al.(2001) used framing - concious phrasing of information - as an instrument that activates certain people's values and attitudes by renaming menu items in a school cafeteria through the descriptive informative (e.g. "succulent Italian seafood filet"), instead of using plainly informative "seafood filet". The study results shown an increase in sales by 27% by using descriptive label. Sunstain (2014a,b) has developed a nudge tool that is to simplify the information delivery to the users, highlighting the importance of certain characteristics or improving the level of convenience.

Recently, Pucher and Buehler (2008) suggested that changing layouts and features of the environments is an valuable nudging tool to influence travel behaviour. Their studies results, based on national agregate data regarding cycling of a large and small cities form

Netherlands, Germany and Denmark, reported that significant tools for promoting cycling are the provision of separate cycling facilities along heavily traffic roads, supplemented by ample parking space for bikes and the integration of cycling with public transport, which recall urban planning soft policies, like nudging.

Consumers are significantly influenced by standard choices - defaults - that decide the results in case they don't take action. Consequently, authors like Egebark and Ekstrom (2013) considered changes to the default policy as a salient nudging tool: they reported, based on the natural field experiment, that the daily paper consumption at a large Swedish University has been reduced by 15 percent due to the change of the default on double sided option. They also reported that the default effect works through recommendation and depends positively on the choice set alternative's numbers.

According to Cialdini and Goldstein (2004) the social norm should be relevant, visible, for individuals in order to produce an impact on behavior. The social norm drawn attention of the authors like Goldstein et al (2008), which are using it as an nudging measure to change the reuse rates of towels in hotels. Based the results on two field experiments in well-known hotel chain they reported that descriptive norm message informing the tourist that a majority of other visitors participate in the towel reuse program (e.g., "the majority of guests reuse their towels") was more efficient than the standard message regarding the importance of environmental protection (e.g. "help save the environment by reusing your towels during your stay"). More, they reported that descriptive norm message were more efficient when describing group behavior that occurred in the setting that most closely matched individuals' immediate situational circumstances (e.g., "the majority of guests in this room reuse their towels").

## **2. Methodology**

This research aims to describe the nudging measures that can be applied in protected areas in order to develop strategies for eco-sustainable goods and services. Our interest is to see how nudging can be applied to encourage tourists to behave responsibly in protected areas. The most relevant research method in these circumstances is the case study. That is, we choose a particular national park in which to undertake the study and then propose measures for other comparable protected areas.

In view of our objective with regards to nudging, a qualitative research method is more appropriate. We opted for a case study which permits an „in-depth investigation of a contemporary phenomenon within its real-life context” (Pettigrew, 1973; Stake, 1995; Yin, 2003” cited in De Massis and Kotlar, 2014). Halinen and Tornroos (2005) also argue that the case study approach is a better choice when the research investigates a new phenomenon which is difficult to study out of the context in which it happens.

The research question is: How can the managers of protected areas influence the behavior of tourists through nudging measures to determine them to consume eco-sustainable goods and services? Therefore, the relevant type for this research is the exploratory case study which is to be used when the objective is to understand how a phenomenon occurs (De Massis and Kotlar, 2014). We attempt to broaden the understanding of nudging in protected area to give managers tools to make tourists act more responsibly.

The case to be studied is that of the National Park of Sibillini Mountain, Italy. This case was chosen because the authors had easy access to the national park's management and because the case offered an appropriate and relevant environment in which to study the matter under investigation.

Usually, the case study method requires a largely qualitative data gathering, with tools such as interviews, documentation review or observation (Soy, 1997). For this particular study, we chose to use secondary documents, observation and an interview with the director of the park. The secondary sources and observation enable the collection of general data about the National Park of Sibillini Mountain. The interview is the method that allows to produce multiple perspectives on a research topic (Jensen and Jankowski, 1991). Also, the interviews have the advantage of being more flexible than other methods. Last but not least, the director of the park is the most representative person in relation with the research topic and research question.

Based on our research question and the goal of the study, we elaborated an interview guide (Table 1) with six questions regarding the measures used by the management of the National Park of Sibillini Mountain to influence the behavior of tourists while visiting the site.

**Table no. 1: Interview guide used in relation with the director of National Park of Sibillini Mountain, Italy**

Nr.	Question
1.	The information provided by the park management to tourists (through sites, web site, information point etc.) are streamlined/framed in such a way that each individual produces decisions alone without the help of an external support?
2.	The information provided by the park management to tourists generate knowledge or a framework on park eco-sustainable goods and services (e.g. granting ecotourism certification for accommodation facilities)?
3.	The park over the years has undergone physical or organizational changes (man made, e.g. the introduction of public transport or cycle paths) to influence the tourists behaviour? If yes, how?
4.	The park use default actions (e.g. introducing the guides or guided program to visit the park) to influence the tourists behaviour? If yes, how?
5.	During the years, have you changed the default actions?
6.	The application of law about eco-sustainable goods and services by the State and the European Union influence positively tourist behaviour?

After collecting the data from the secondary sources regarding the national park and from the manager's responses, we continued with the data interpretation. The transcript of the interview was used to analyse the nudging measures applied in this case and to respond to the research question.

**The case study of Sibillini National Park**

The Sibillini National Park, established in 1993 and managed by the Sibillini National Park organization with its operations centre in the municipality of Visso (MC), is a natural protected area that preserve the Sibillini Mountain. It is positioned in the Marche and Umbria regions and covering 71,437 hectares mainly mountainous terrain.

Glacial valleys, deep gorges and vast mountain meadows characterized the mountain environment. The highest peak is Vettore Mountain (2476m) and there are other mountains: Top of Redentore (2248 m), Peak Devil (2410 m), Priora Mount (2332), Peak Berro (2260), Porche Mount (2233), Argentella Mount (2201 m), Sibilla Mount (2173), Bove Mount (2169 m), Borghese Place (2119 m) and finally Peak Three Vescovi (2092 m).

The Park hydrography included rivers (Aso, Tenna, Ambro, Fluvione, Rio Sacro, Fistrone, Nera and Ussita), waterfall (Cascata Nascosta), artificial lake (Fiastra), natural glacial lakes (Palazzo Bergese, Pilato), and natural gorges (Infernaccio Gorges).

In the park, there are almost 2,000 species of flora (most important Genepi Apennines and Alpen Star Apennines) and over 200 species of vertebrates (wildcat, porcupine, roe deer and the Apennine chamois, golden eagle, goshawk, sparrow hawk, peregrine falcon, etc.).

Inside the Park there are Villages (Borghi) with old towels, churches, sanctuary and abbeys: Acquacanica, Arquata del Tronto, Bolognola, Castesantangelo sul Nera, Cessapalombo, Fiastra, Fiordimonte, Montefortino, Montegallo, Montemonaco, Norcia, Pievebovigliana, Preci, San Ginesio, Ussita, Visso.

In 2002, the park management has adhered to the European Charter of Sustainable Tourism (ECST) and elaborated the environmental interpretation plan in order to promote the sustainable tourism. The interpretation plan of National Park Sibillini Mountain is one of the key tools in order to protect, valorize and properly use of the natural resources, and promote social-economic and cultural characteristics of the protected area through the organic and complete management system.

The interpretation, which establish the planning and designing of accommodation facilities, media and business with precise information, education and cultural entertainment and tourist objectives, is connected with the conservation and management protected area and territory socio-economic development objectives. It is also based on the incentives and attendance principle of various areas that can be obtained not through restrictions or bans, but with the presence of alternative opportunities or strong attractions.

### **3. Results and discussion**

Our research programme explored the nudging measures that can be applied in protected areas in order to develop strategies for eco-sustainable goods and services and how nudge can be used as a breakthrough strategy to encourage tourists to behave responsibly in protected areas.

The first nudging measure that emerged from our interpretation was *the simplification and framing the information* provided by the park management to tourists (through sites, web site, information point etc.), in such a way that each tourists makes decisions alone without the help of an external support. According to Hornoiu (2015) tourism is one of the most powerful forces on the planet that can have a positive influence. The need to simplify and framing information in order to be presented more straightforward and in a way that fits the information decision-making process of the tourists was clearly articulated. "Yes, the park management has set up a web site where the tourist can find under the section "visiting the park" all the useful information to organize their own tourism program without external assistance. More, in the park are established the information points for tourists that want to have full information on all the possibilities for using the existing services and products of the territory, specifying and explaining what services and products contribute to the maintenance of high environmental quality." (Park director).

The findings regarding simplified information and signifier confirm the study results of Viachaslau Filimonau et al (2017) in which they proposed a menu restaurant - that includes next to price, food provenance, nutritional value - as a customer nudging tool which can enable clients to make choice more beneficial from the sustainability perspective. In our case study, the park management has introduced the Sibillini menu in order to promote the short distribution chain between agro food producers and restaurant park. Also, the park

management, through this menu, has developed a true "gastronomic itinerary" based on the flavours and local products - salami (coppe di testa, lonze, capocolli), hams, cheeses (pecorino, ricotta), apples, honey, truffles, marshmallow, chestnuts, chickpeas, flour-wheat, maize, bread baked in a wood oven, biscuits, liquor (mistrà) and boiled wine - discovery. The menu is a typical dishes collection based on local products which is advertised by all restaurants in order to raise awareness among tourists regarding local culinary traditions. The menu describes the basic ingredients of the dish proposed by each restaurant and provide information regarding the raw materials origin place, production methods and the agro and zootechnics local companies' contribution to biodiversity conservation. More, in each restaurant menu there is also a list of other restaurants of the network which are proposing Sibillini menu dishes, therefore the tourists can choose the next "stage of taste." The park director stated: "on the website is advertised... the production that ensures high environmental quality through farms who adhere to the Sibyl menu with a purpose of local dishes promotion and then of the products and raw materials with which the dishes are made."

*Changing physical environment* is other significant nudging tool that have impact on individual's choice. In this respect, we found evidence regarding the fact that park director used this nudging tool to enable tourists make choices from sustainability perspective: "Correct management of the visitors flow has been possible thanks to the interventions made over the years by creating and developing urban tourism infrastructure, like roads, and also hiking trails. The following routes were created in order to respond to the tourist demand but also taking into account the fragility and vulnerability of the park areas:

- The urban tourism infrastructure consists in a path of the Park Great Road (La Grande Via del Parco) and other six routes that covers a network of 450 km, developed on the existing roads, in order to visit all the territory attractions. The path of the Park Great Road (La Grande Via del Parco) is a 190 km itinerary, which can be developed in a couple of days by car, bike or camper. It is divided into four stages: from Visso to Fiastra, from Fiastra to Amandola, from Amandola to Arquata del Tronto, from Arquata del Tronto to Visso.

Instead, the hiking trails - The Sibillini Great Ring (Grande Anello dei Sibillini), natural, mountain bike and trekking trails, are designed and developed to enhance and promote the lesser-known areas.

- The Sibillini Great Ring is a 124 km hiking trail that turn around the all mountain range. It is divided into nine stages fully signalled which allows knowing the historical cultural heritage and landscape of the park, in the areas that are not environmental fragile, in order to conserve the fragile areas from Sibillini Park.

- The natural trails represent an extraordinary opportunity for discover the Sibillini Park even for less experienced hikers and begin from historical centres of the countryside and are intended to raise awareness of an important aspect of local realities: the fauna, flora, history, local traditions. Two of the 18 nature trails are accessible also for disabled tourists.

- Transhumance activities in Sibillini Mountains, over the years, have created a dense network of paths to higher altitudes, resulting 17 itineraries in order to discover the different landscapes and nature that the park preserves. For each itinerary, there are provided information regarding the time and the route description.

- The Sibillini Great Ring (Grande Anello dei Sibillini) mountain bike itinerary, which is not included in the "classic" itineraries can be easy made in four or five days and it allows to discover the park suggestive attractions. The itinerary starts from Visso and crosses four municipality: Fiastra, Amandola, Montegallo and Norcia."

Therefore, through the entire management system, the park administrators direct the tourist flows in less sensitive areas or otherwise restrict access to sensitive areas, not through the prohibitions system, but through a incentives system, so when they propose the certain routes, rather than others, they advertise as marked routes and viable autonomously, in complete safety, even without accompaniment. The park management, through information regarding tourist behaviour code in the park and the tourist attractions, on one side increase the offer indirectly through various tourist routes and on the other side direct tourist flows towards a particular areas.

We report also that we found evidence regarding *changing to the default policy* as a nudging measure applied by the park management to influence visitors' choice. For example, one way to nudge tourists into visiting sensitive areas was by offering guided tours instead of advertising tours without accompaniment." The most fragile paths to significant attractions, which are maintained less accessible by park management, but not prohibited, e.g. Pilate Lake (Lago di Pilato) can be visited with the park guides in order to monitor tourism activities, raise awareness and provide information about the tourists behaviour code (e.g. forbidden dogs and lighting fires, waste management etc.). " (Park director). The park management has trained its own park guides as environmental interpreters, which already are certificated as montain guides or have specific professionals qualifications, in order to be the interface between the park territory and tourists. They are providing information and raising awareness activities, transferring an educational message designed to involve, empower tourists and residents of the park, to take favorable attitudes towards the environment. "Therefore, environmental interpreter is a 'mediator' who, on the one hand makes the visit an unforgettable experience by revealing the secret aspects, less visible in the area, regarding not only landscaped or morphological aspects, but also cultural, traditional aspects etc. and, on the other hand, transmits an educational message, trying to create an empathy with the visitor, in order to demonstrate that his attitude towards the visited area is a responsible one. Environmental education, through interpretation or other techniques plays a fundamental role for the park in order to develop responsible attitudes towards the visited area." (Park director)

According to Hornoiu (2015) the staff of protected areas is formed by rangers, wildlife specialists, managers who must be able to effectively interact and work with the local communities' members and tourism organizations.

Using the *descriptive social norms* was another nudging measure that park management applied to influence tourists' consumption behaviour. We found evidence that they informed tourists that the majority of other tourists are consuming eco certified products and services of the park:" In my opinion, undoubtedly the tourists rely to all that is certified, for example, the agri-food products, brands like DOC (Denominazione di origine controlata), IGP (Indicazione geografica protetta) etc., are very well known and recognized and informing tourists that the majority of other tourists consumed this kind of certified products influence enough the behavior and the tourists consumption willingness." (Park director)

We can say, as a general rule, that tourists consumption behaviour is positively influenced by the presence of eco certified products and services which confirm the statement made by Olander and Thøgersen (2014) that considered eco-labels as part of the choice architecture and considered them to be nudges.

### Conclusions

The aim of this article was to examine that the nudging measures implemented by protected areas' park management can be seen as a breakthrough strategy for developing eco-sustainable goods and services. For this, we opted for case study of Sibillini Mountain Park as qualitative research method, because we investigated a new phenomenon - nudging measures used by managers in protected areas to determine tourists to consume eco-sustainable goods and services - which is difficult to study out of context in which it happens. Based on the secondary documents, observation and the interview with park director, we found that the park management is using nudging measures - *simplification and framing of information; changes to the physical environment; changes to the default policy; the use of social norms* - to influence the tourist behaviors in order to make tourists act more responsibly and to consume eco-sustainable goods and services. The results of this study contribute to literature by revealing the nudge tools that can be applied by natural protected area's managers in order to develop strategy for eco-sustainable consumption.

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