



CONTEMPORARY APPROACHES FOR CONSUMER SEGMENTATION ACCORDING TO THE LEVEL OF ECOLOGICAL RESPONSIBILITY: THE CASE OF REPUBLIC OF MACEDONIA

*Katerina BOJKOVSKA¹, Trajan DOJCHINOVSKI¹, Nikolche JANKULOVSKI¹, Elena JOSHEVSKA¹, Blagojche NAJDOVSKI¹

¹Faculty of biotechnical sciences - Bitola, University „St. Kliment Ohridski” - Bitola
Partizanska bb, Bitola, Republic of Macedonia,
katerina.bojkovska@uklo.edu.mk

*Corresponding author

Received 15th April 2016, accepted 25th June 2016

Abstract: *The management and protection of the environment is a problem and companion to the development of human civilization, but in the recent decades is becoming more popular. The European Union supports the development of ecologically adapted and competitive economy, which aims to achieve the objectives of the concept of sustainable development.*

The ecological awareness today is a planetary phenomenon because it comes as an expression of knowledge about the danger for humanity from pollution of soil, water and air due to the carelessness of the consequences of certain activities of the environment.

Consumers are increasingly more aware of the consequences of global pollution and the constant disorder of the environment. People around the world show concern for the environment and change their behavior. The ecological awareness and environmentally responsible behavior of the consumers is a necessity and obligation of the modern world and is part of the social responsibility.

The green consumers as one of the most important features of the modern ecological marketing are environmentally responsible consumers who require producers to express their ecological responsibility.

Keywords: *consumer, segmentation, ecological responsibility, green marketing.*

1. Introduction

During the last three decades, the issues for environment and sustainable development of marginal topics have become a central theme for thinking and research. The increased media attention, high level of awareness about ecological issues influenced by reports of various ecological disasters, increasing activities of interest groups focused on issues of the environment and more legal regulations on a national and international level, are factors that are the driving force of those changes.

Determining the economic and ecological interests has become part of every segment of modern life and the consumption. In the market this resulted with the appearance of a new segment called green consumers. Ecologically responsible manufacturers now are able to achieve key competitive advantage in the market because the ecological awareness is gradually integrated into all aspects of social, business, political and ethical thinking and acting. Has become undoubted the fact that there is an ecologically responsible segment of consumers in the market.

However, with the increase of bidders exactly in the green market is no longer enough to be aware of that, but it also requires a complex strategy of segmentation, targeting and positioning. As in the case with any other market segment, there is a need to identify those target consumers to be able for more effective access and to meet their needs based on specifically designed marketing programs.

Based on the above, this research is based on 4 key assumptions:

1. The social attraction to encourage and build ecological responsibility of individuals, companies and society in general, is undeniable;
2. The ecological responsibility of the individual in the role of consumer (making decisions for buying and consumption in general) is essential for this social transformation;
3. Educational programs and communication strategies for changing attitudes and beliefs of consumers towards ecological responsibility must be based on knowledge of the factors that affect and the strength of their influence on the level of ecological responsibility that consumers express, and the knowledge of demographic, socioeconomic and psychographic characteristics of green consumers;
4. Current approaches for segmentation of customers according to the level of ecological responsibility helps in the decision making (outside) of the economic entity and designing programs for the market in the process of creating ideas, product modeling (design), determining prices and the way of distribution and communication adjusted to the individual segment.

Therefore it is necessary to create a specific, comprehensive and dynamic knowledge base for Macedonian green consumers.

The goal of this research is to contribute to find answers to the following research questions:

- Who are the Macedonian green consumers?
- How many are they?
- How educated are they?
- How do they live?
- Do they react to promotional messages?
- Are they ready to pay more for green products?

From the answers of these questions arise some indirect answers that present implications for commercial and nonprofit entities:

- How to reach green consumers?
- How should we communicate with them?

It is necessary to emphasize the fact that according to that criteria, in Republic of Macedonia till now have not been conducted researches related to ecological responsibility of consumers and their segmentation. The attention of most authors was directed to the producers and the level of their understanding and application on green marketing.

Defining of green consumers and previous researches

Green consumer can identify as the one whom in satisfying their needs and desires search product and has a minimal negative impact on the human environment. These are educated consumers and as target market are very interesting, although much larger market are those others - passive towards the preservation of the environment [1].

Business Dictionary defines the green consumers as consumers that intensively reflect on the questions related to the environment, that support ecological objectives and actions and are ready to switch to the other manufacturer or supplier of ecological reasons but even if it includes a higher costs [2]. Elkington [3] defines green consumers through features that are undesirable for them. Researchers

are still trying to understand behavior of green consumers from three different perspectives: first examines consumers through demographic and socio-economic variables, the second takes into account the amount of information and knowledge that people have about environmental problems and issues, and the third includes the values, lifestyles, personality traits and attitudes [4]. In addition to trying to determine their number or relative share of green consumer market, a large number of research aimed determining demographic and other characteristics of green consumers [5].

In contemporary literature can be found studies that cover a wide range of topics: from the attempts of assessment and awareness of environmental issues, analyzing the perceived importance of the environment, the importance of environmental awareness, thinking about the actual impact of an individual on the environment, willingness to pay higher prices for environmentally friendly products, etc. [6].

Some studies show only limited influence of cognitive factors, such as knowledge of the environment, and demonstrate a significant impact of affective factors in the adoption of environmentally conditioned purchase decisions [7].

In addition to attitudes and knowledge, significant attention has been paid to research

Scientists such as Fraj and Martinez in 1987, Esty and Winston in 2002 and Pafa and associates from 2008 dedicated to the relationship between lifestyles and value system of consumers and their attitude towards environmental issues [8]. In certain cases it can be realized with it and direct personal benefits such as health benefits brought about organically grown food, monetary savings resulting from energy saving, etc. [9].

Segmentation of consumers

According to numerous conducted researches have been made various attempts for segmentation of consumers regarding to different criteria. The most known and acceptable is that one that was offered by the company *Roper Starch Worldwide*. According to *Roper Starch Worldwide*, consumers toward their interest in the question of the environment and activities that are undertaken about that can be divided into five segments [10]:

1. Real green (True-Blue Greens)
2. Green (Greenback Greens)
3. Young (Sprouts)
4. Grousers
5. Basic Browns

Real greens and Greens belong to the group of active agents of the environment, and the difference between them is that Real Greens are ready to devote their time and energy in solving ecological problems, while the Greens are ready to contribute in financial terms, for a price premium of green products or financial contribution to ecological organizations. Young people show their concern for the environment if this one does not require much effort of them or costs.

Grousers believe that governments and large commercial entities have to take care for the environment and to negotiate to do things that contribute to the environmental protection (e.g. separating waste for recycling). But they consider that they are too busy or do not have money for that and so there is nothing significant to change. Basic browns opposed to Grousers do not try to find an excuse for their inaction in terms of environmental protection. They simply do not care because they think ecological problems are not serious and that there are more important things to take care [11].

The new approach for green consumer segmentation has been used by the consulting firm The Hartman Group in Washington. Their previous studies have

been focused on consumer segmentation in unique ecological groups that follow the appropriate demographic characteristics. However, recent studies have found that consumers with the purchase of green products primarily take care of their own health and wellbeing, and do not take care about the environment, because it is much more tangible and therefore they developed a model of segmentation based on lifestyle [12].

Along with concepts linking to quality, other dimensions of consumption drive the values that inform consumer behavior in the World of Wellness and include Price, Convenience, Brand, Experience, Expert Opinion, Fun/Enjoyment, Knowledge, Authenticity, and Sustainability.

2. Matherial and methods

It is estimated that the method used to collect the required data for this research is the examination, considering its advantages over other methods such as varied ability to apply the methods of testing, relative speed of data collection and relatively low costs. Regarding to the

model of examination it is chosen a personal examination. As a tool of the research is applied structured questionnaire. Shaping tools of research is a complex process that is implemented in several steps:

- After defining the information that we want to get, based on relevant literature from the subject area is designed a questionnaire.
- In creating questionnaire were used closed questions with the modalities of the features, and most of them are measured by Likert scale with five levels, where 1 means ‘completely disagree with the statement’ and 5 means ‘completely agree with the statement’.

Samples are the households from Republic of Macedonia. This model is suitable for obtaining indicative results and making general conclusions about the level of ecological awareness of consumers, as well as some important implications for economic entities in Republic of Macedonia. The description of the researched sample is shown in Table 1.

Table 1

| Description of researched sample | | n | % |
|----------------------------------|----------------------|------------|------------|
| Gender | | 552 | 100 |
| | Male | 275 | 50.2 |
| | Female | 273 | 49.8 |
| Age | | 552 | 100 |
| | 15-24 | 92 | 16.7 |
| | 25-34 | 93 | 16.9 |
| | 35-44 | 92 | 16.7 |
| | 45-54 | 89 | 16.2 |
| | 55+ | 185 | 33.6 |
| Education | | 552 | 100 |
| | Elementary education | 72 | 13.1 |
| | Secondary education | 297 | 54.1 |

| | | | |
|--|-------------------------------|------------|------------|
| | University education and more | 180 | 32.8 |
| Marital status | | 552 | 100 |
| | Not married | 167 | 30.4 |
| | Married | 315 | 57.4 |
| | Divorced or widow | 67 | 12.2 |
| Number of household members | | 548 | 100 |
| | | | |
| | 1 | 55 | 10.0 |
| | 2-3 | 236 | 43.1 |
| | 4-5 | 231 | 42.2 |
| | 6 and more | 26 | 4.7 |
| The environment in which they grew up | | 552 | 100 |
| | City | 269 | 48.9 |
| | Suburban | 91 | 16.5 |
| | Country | 190 | 34.5 |
| Household income | | 550 | 100 |
| | To 10.000 den | 43 | 7.8 |
| | 10.001- 20.000 den | 82 | 14.9 |
| | 20.001 – 30.000 den | 127 | 23.1 |
| | 30.001 – 40.000 den | 97 | 17.6 |
| | 40.001 – 50.000 den | 72 | 13.1 |
| | More than 50.000 den | 129 | 23.5 |

In the analysis of the data are applied methods of descriptive and inferential statistics. Category analysis is used where under categorization is meant the classification of the variables. Then it is made a cross-tabulation i.e. it is calculated chi-square, lambda, and contingency coefficient and Pearson correlation coefficient.

3. Results and discussion

Based on the study of relevant sources of literature, especially the previously conducted researches related to the subject matter as well as prior researches, it is

formed tool for research or questionnaire consisting of 30 questions.

The aim is to measure the overall level of ecological responsibility of consumers, and consists of three parts (each includes ten questions), to be appropriately measured: attitude, knowledge and taken actions.

The famous scale for measuring the ecological responsibility of consumers - ECOSCALE [13] is used as a source of ideas for setting the formulation of questions, because it covers a variety of factors affecting the ecological responsibility of consumers, but it is not used as a measuring tool, because

conceptually does not match the objectives of this research [14].

In order and in accordance with the objectives of the research, to contribute towards creating a clearer picture of the Macedonian green consumer, was necessary first to identify green consumers by differentiating them from consumers who show a relatively lower level of ecological responsibility, which are called neutral and the consumer group with the lowest level of environmental responsibility that are called brown consumers.

The scale according which consumers are classified into one of these three segments, based on the average score of all thirty questions is given in Table 2. In the process of coding for each answer was given a grade from 1 to 5 in order to calculate the average. Chosen is the main (most severe) division of the three segments of consumers (green, neutral and Basic browns) in order to define the basic differences by the demographic characteristics making possible a higher level of significance.

In setting the scale is paid attention for that the average ratings of distribution in particular segment to be relatively high in order thereby to neutralize the impact of the partiality of the interviewee due to the perceived social desirable responses that maintain a high level of ecological responsibility. Considering the fact that it is a Likert scale with five grades, the score of 3 is taken as an indication of a neutral position on the offered statement and therefore the average grade 3 is defined as the minimum grade to be considered the consumer as neutral.

However, due to the mentioned impact of social attraction on the answers this limit has increased by 10% or 0.3 and so the minimum average score for classification of respondents in the segment - neutral consumers amounted to 3.3. In the further modeling of the scale (green segment), was

taken into account for that the classes of average ratings to be equally high.

The average risk categories are equally high.

Table 2.
The scale of consumer segmentation

| Name of segment | Average rate |
|-----------------|----------------|
| Green | 4.20 – 5.00 |
| Neutral | 3.30 – 4.19 |
| Basic Browns | Less than 3.29 |

With the segmentation of consumers in accordance with the conditions given in Table 2 was obtained structure of consumers as shown in Figure 1. As it was expected, the smallest group consists of green consumers (17.2%), while the neutrals are the biggest segment. Extremely low ecological responsibility was expressed by 21% of consumers, and they make up the Basic browns consumer segment.

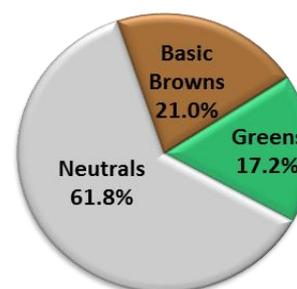


Figure 1. Participation of Green, Basic Brown and Neutral consumers in the total sample

In order to develop a profile or create a clearer picture of each segment, especially for green consumers has been made a cross-tabulation (Cross tabulation) with demographic characteristics of respondents. By using the chi-square test was made an attempt to demonstrate existence of statistically significant differences when comparing the given segment structure and the demographic characteristics of respondents. If the level of significance is above 0.05 then there

cannot exist statistically significant differences.

Comparing the structure of segments according to the variable 'gender' is not noticeable statistically significant difference (signif. > 0.05). However, according to the participation in all three segments, it is evident that female respondents are slightly disposed for ecologically responsible behavior, because their participation in the segment of greens is insignificantly high, and the participation in basic brown segment was significantly lower.

At the variables that represent the age group there is statistically significant difference (signif. < 0.05), and therefore cannot be said that green consumers generally have 55 or more years. It indicates to the fact that members of this age group are mostly in the segment of green consumers while their participation was significantly lower in the segment of neutral and basic brown consumers. It is surprising the very small participation of the youngest age group in the segment of green consumers. The members of the age group from 15-24 years are the most included in the segment of basic brown customers. For that purpose the future researches should be directed to the identification of the reasons for this phenomenon.

Due to the structure of the sample (in the sample is a group of subjects with more than 55 years) it is designed complementary comparison that shows the structure of the age groups of users according to the defined segments in order to remove any doubts for the structure of green consumers and to confirm the statement that consumers over 55 years are really the 'greenest' segment. It shows that the participation of green consumers is significantly higher in the group of consumers over 55 years compared to all other age groups, and the fact that the

participation of green consumers in the youngest age group is the smallest.

In the variable 'level of education' the difference was also statistically significant (signif. < 0.05), and can be concluded that the level of ecological responsibility grows with the level of education, because the participation of respondents with higher education decreases from green to basic brown while the participation of respondents with primary education increases.

The 'marital status' is also statistically significant variable and at the significance level of 0.001 can be concluded that green consumers mostly live in a marriage. Persons who are not married often belong to the basic brown segment. This may be associated with the variable 'age group' and can be concluded that they are members of the younger age groups.

For other demographic variables, such as 'household size' (signif. = 0.172), 'environment in which consumers raised' (signif. = 0.513) and 'household income' (signif. = 0.379) was not found statistically significant difference, and it is the reason why we do not specifically note the structure of the segments of consumers according to these variables. However, significant is the fact that these variables are not significant, and indicates to the future researches that are supposed to answer the question why the number of household members, the environment in which raised respondents and household income have a significant impact on the level of ecological responsibility of consumers.

Particularly interesting variable is the 'household income' because intuitively can be assumed that individuals and families with solved subsistence needs should be more inclined to focus their time and resources on 'higher purpose'. However the income of households obviously does not have such predictable and direct impact

on the ecological responsibility of consumers.

According to Leinberg survey, 'household income' obviously does not have such a predictable and immediate impact on the environmental responsibility of consumers. Therefore consumers with the highest revenue do not belong to the "greenest" segment [15].

Besides demographic variables for the development of green consumer profile are used two important questions that are often taken as the main measure of the level of ecological responsibility of consumers

1. Have you ever bought a product motivated by the promotional message which says that the product is safe for the environment?

2. Are you ready to pay more for product (e.g, detergent) that is ecologically more acceptable than competing products?

These questions are cross tabulated with the identified segments to get two more determinants of green consumers. These criteria must be followed in dynamics, as this may indicate a change in the level of ecological responsibility of consumers and measuring the impact of certain social events or activities. From the performed statistical processing of collected data can be seen that green consumers mostly periodically buy products stimulated by promotional message that states that the product is safe for the environment, but the percentage of respondents that do that often is quite high (40 %) (Figure 3).

This result indicates that green consumers, although compose a relatively small segment quite are active and ready to act in accordance with their ecological attitudes of the place of purchase, where need to be informed about the ecological characteristics of products. This fact justifies the investment in promotional messages and green marketing campaign that lately are increasingly found in Republic of Macedonia.

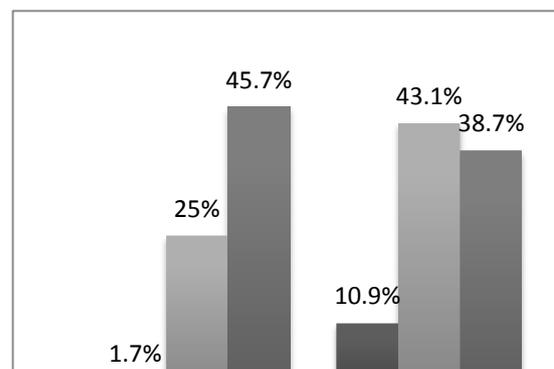


Figure 3. Purchasing of goods fueled by promotional activities in which states that the product is safe for the environment
 $(\chi^2 = 134.137, \text{signif.} = 0.000)$

Another important indicator for the marketing decision-making and marketing theorists that can be measured in a number of studies of green consumers is a willingness to pay a price premium for green products. Therefore, can be concluded that the most of the green consumers are ready to pay 20% higher price for green products. At the same time, it is not insignificant the percentage (15%) of those who are ready to pay 40% more for a product that is ecologically more acceptable than competing products (Figure 4).

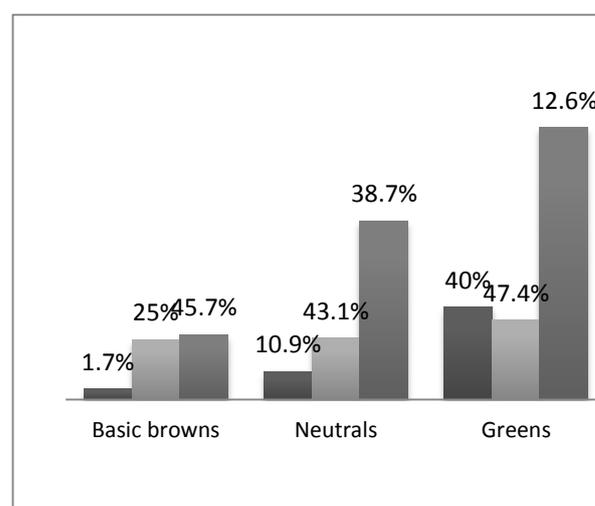


Figure 4 The willingness to pay higher prices for the environmentally friendly product readiness
 $(\chi^2 = 87.593, \text{signif.} = 0.000)$

4. Conclusion

Regardless of the type or specific area to which it applies, the customer is always the target of the marketing. On the market was identified a growing and potential profitable segment of the green consumers, which on their decision making moments, they are considering all available information and all their knowledge how they would choose the right alternative, that for them is optimal combination for satisfying their own needs and welfare of the environment, as well as the hole community.

Based on the survey results, the conclusion is that the average green consumer in Republic of Macedonia is a person older than 55 years and has higher education, is married and reacts to promotional messages in which is highlighted that the product is safe for the environment and under it influence temporary or often makes buying decision and is ready to pay 20% more for environmental acceptable product.

These results, for the economic entities, should make easier the decisions making and creating the program for market appearance in the whole process for creating the idea, product design, price determination and the ways of distributions of the product.

In addition, the research results may have implications to the other groups of participants to the green marketing. This applies especially to the environmental associations and organizations, as well as government agencies that have a role in encouraging changes, providing the necessary information through education and directing changes in domestic and international laws and regulations.

The state authorities especially should react with warning for the low level of ecological responsibility for the youngest age group that undoubtedly lead to be made necessary changes in the educational

system and should make certain efforts about it.

It is necessary to separate the data that shows that the youngest age group between 15 to 24 years is minimum ecologically conscious. This information is alarming, especially if we take into consideration the fact that in the most of the researches in other countries, this age groups is the most environmentally conscious.

The future researches should tend to identify all the factors that influenced in such a way, as well as developing a strategy for positive changing in that sense. Based on the survey results, can be concluded that the green consumers in Republic of Macedonia, although they are relatively small seqment, they are very active and ready to act with accordance of their ecological position on the place where they buy, but need to be previously informed for the ecological characteristics of the products.

This information justifies the investment in more promotional messages in the campaign of the green marketing that lately are using in Republic of Macedonia. Also the expressed willingness to pay a price premium for ecological acceptable product is an important indicator for making marketing decisions.

For full implementation of the green marketing in Republic of Macedonia, it is necessary to create a comprehensive knowledge base for the Macedonian green consumers, their socio-demographic characteristics, attitudes, needs, desires and expectations. This knowledge must be in dinamic category, but the research should be systematic and continuous. Only on the basis of knowledge about green consumers may develop a strategy for the development of green marketing at macro and micro level in Republic of Macedonia. Worldwide and in Europe, there are very few ecological oases, whereby with strategic determination on the green marketing on national level in Republic of

Macedonia, only in this field can be achieved competitive advantage in the international market.

produced food and market green products in general.

With the appropriate system investments and economic cooperation, as well as with help of knowledge and government entities, Republic of Macedonia can create strong and credible global green brand.

5. References

[1]. GRBAC, B., Identity Marketing: basic principles - the new reality, Ekonomic faculty - Rieka, 2005, pp. 476.

[2]. <http://www.businessdictionary.com/definition/green-consumer.html> (Assessed 27.06.2016).

[3]. ELKINGTON, J.: Toward the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development, *California Management Review*, Vol. 36, No. 2: 92, (1994).

[4] FRAJ, E., MARTINEZ, E., Ecological consumer behaviour: an empirical analysis, *International Journal of Consumer Studies*, Vol. 31: 26-33 (2007).

[5] PAFF OGLE, J., HYLLEGARD, K. H., DUNBAR, B. H.: Predicting Patronage Behaviors in a Sustainable Retail Environment: Adding Retail Characteristics and Consumer Lifestyle Orientation to the Belief-Attitude-Behavior Intention Model, *Environment and Behavior*, Vol. 36: 717, (2004).

[6] JAIN, S.K., KAUR, G.: Green Marketing: An Attitudinal and Behavioural Analysis of Indian Consumers, *Global Business Review*, Vol. 5: 187-205, (2004).

[7]. HARTMANN, P., APAOLAZA IBANEZ, V., FORCADA SAINZ, F.J.: Green branding effects on attitude: functional versus emotional positioning strategies, *Marketing Intelligence & Planning*, Vol. 23, No. 1: 10, (2005).

[8]. FRAJ, E., MARTINEZ, E.: Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis, *Journal of Consumer Marketing*, Vol. 23, No. 3: 133-144, (2006).

[9]. HARTMANN, P., APAOLAZA IBANEZ, V., Green value added, *Marketing Intelligence & Planning*, Vol. 24, No. 7: 673-680, (2006).

[10]. JAIN, S. K., KAUR, G., Green Marketing: An Attitudinal and Behavioural Analysis of Indian Consumers, *Global Business Review*, Vol. 5: 187 (2004).

[11]. KALAFATIS, S. P., POLLARD, M., EAST, R., TSOGAS, M. H.: Green marketing and Ajzen's theory of planned behaviour: a cross-market examination, *Journal of Consumer Marketing*, Vol. 16, No. 5: 441-460, (1999)

[12]. MCCARTY, J.A., SHRUM, L.J., A structural equation analysis of the relationships of personal values, attitudes and beliefs about recycling, and the recycling of solid waste products, *Advances in Consumer Research*, Vol. 20: 641-655, (1993)

[13]. STONE, G., BARNES, J.H., MONTGOMERY, C. ECOSCALE: A Scale for the Measurement of Environmentally Responsible Consumers, *Psychology & Marketing*, Vol. 12, No. 7: 595-612 (1995)

[14]. HAM, M., FORJAN, J., FRAJMAN-JAKSIC, A., Measuring consumer environmental responsibility, 4 International Conference "An Enterprise Odyssey: Tourism - Governance and Entrepreneurship", June 11-14, 2008, Dubrovnik Croatia). Paper published in Proceedings, An Enterprise Odyssey: Tourism - Governance and Entrepreneurship, pp. 1448-1459.

[15]. LEINBERGER, P., Roper Green Gauge 2000, Presentation at Sixth National Green Power Marketing Conference, Portland Oregon, August 1st, 2001 - prema: Holt, E.A., Holt, M.S.: Green Pricing Resource Guide, 2 ed., Prepared for American Wind Energy Association, Ed Holt & Associates, Inc., London, 2004.