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Anna Katarzyna Mazurek-Kusiak [a], *Bożena Bednarska* [b]
University of Life Sciences in Lublin, Lublin, Poland

SOCIETY OF EASTERN POLAND IN LIGHT OF THE USE OF HOTELS PROVIDING PRO-ENVIRONMENTAL ACTIVITIES[1]

Abstract. The aim of the study is to analyse the attitudes of the society of Eastern Poland (Lublin voivodeship, Podkarpackie voivodeship and Podlaskie voivodeship) towards a range of hotels that declare the pro-ecological activities in their offer. Efforts have been made to identify barriers to higher prices for respondents from the surveyed regions as an increased cost of protecting the environment. The paper presents the hypothesis: on the market of accommodation services in Eastern Poland there are groups of tourists who, when booking an accommodation, pay attention to the environmental aspects of hotel operations, including the ISO 14001 certificate, an economical energy policy and a rational waste policy in the hotel. To achieve the intended purpose, the study used the method of a diagnostic survey with a research tool in the form of an original questionnaire that provided necessary data. The study was conducted from May to October 2017 among residents of Eastern Poland (0.02 % the population of residents in Lublin voivodeship, Podkarpackie voivodeship and Podlaskie voivodeship) using hotel accommodation services. The discriminant function analysis was used for statistical calculation. Among the population of Eastern Poland aged over 60, the interest in choosing a hotel that conducts pro-environmental activities is low. As many as 25.89 % of them are not able to pay a higher price for an accommodation in a hotel that conducts activities and investments in the field of environmental protection. This is mainly due to the low income of this social group. However, in groups of younger Poles from the Eastern Poland Region, the lower the age range, the fewer people would refuse to additionally pay for a service in a hotel that pursues pro-ecological policy. Eastern Poles up to 30 years old are more environmentally conscious. As many as 86.31 % of them are able to pay up higher price for a night in an eco-friendly hotel. At the same time, these people generate a greater demand for the services of ecological hotels. The significant statistical factors in choosing an eco-friendly hotel by guests from Eastern Poland were: the preparation of meals from organic products, running a cost-effective energy policy and having the ISO 14001 certificate. However, the statistically significant barriers were: low income related of consumers from Eastern Poland, lack of knowledge about environmental activities in hotels, no promotion of ecological hotels, to desire to purchase the cheapest accommodation by guests.

Keywords: eco-friendly hotels, price, choice of hotel, Eastern Poland Region

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ИССЛЕДОВАТЕЛЬСКАЯ СТАТЬЯ

А. К. Мазурек-Кусяк [а], *Б. Беднарска* [б]
Университет естественных наук в Люблине, г. Люблин, Польша

Отношение населения к экоотелям: пример Восточной Польши

Аннотация. Цель исследования — анализ отношения населения Восточной Польши (Люблинское воеводство, Подкарпатское воеводство и Подляское воеводство) к отелям экологической направленности. Также в статье рассматривается, какие факторы влияют на платежеспособность респондентов при выборе места пребывания. Согласно выдвинутой гипотезе, на рынке услуг в Восточной Польше существуют группы туристов, которые при бронировании отеля обращают внимание на различные экологические аспекты, такие как наличие сертификата ISO 14001, экономное потребление энергии и использование безопасных способов утилизации отходов. Для достижения поставленной цели были проанализированы данные диагностического опроса с использованием оригинальной анкеты. Опрос проводился с мая по октябрь 2017 г. среди жителей Восточной Польши (0,02 % населения Люблинского воеводства, Подкарпатского воеводства и Подляского воеводства), пользующихся гостиничными услугами. Для статистических расчетов использовался анализ дискриминантных функций. Среди населения Восточной Польши в возрасте старше 60 лет был отмечен низкий интерес к выбору отелей, вовлеченных в экологическую деятельность. Кроме того, 25,89 % из них не имеют возможности платить более высокую цену за проживание в отеле, который инвестирует в охрану окружающей среды, в основном из-за низких доходов этой социальной группы. Что касается более молодых жителей Восточной Польши, чем они моложе, тем чаще головы доплачивать за проживание в отеле, заинтересованном в сохранении окружающей среды. Исследование показало, что восточные поляки в возрасте до 30 лет обладают высокой экологической сознательностью: 86,31 % из них готовы заплатить более высокую цену за проживание в подобных местах отдыха. В то же время эта часть населения формирует спрос на услуги экоотелей. Выявлены статистически значимые факторы, влияющие на выбор туристов из Восточной Польши: приготовление пищи из экологически чистых продуктов, экономное потребление энергии и наличие сертификата ISO 14001. Наиболее значимыми барьерами являются низкий доход жителей Восточной Польши, отсутствие знаний о проводимой в отеле экологической политике, недостаточное продвижение экоотелей, желание гостей забронировать самое дешевое жилье.

Ключевые слова: экоотели, цена, выбор отеля, Восточная Польша

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Introduction

In recent years, the issues of nature conservation take up more and more space in the lives of Polish citizens. Awareness-raising activities are the reason for the growing understanding of the danger resulting from the contamination of natural environment. The high growth rate of tourists is not without impact on climate change. In comparison with other sectors, this problem is currently being widely discussed (Scott et. al, 2016; Scott, 2011; Weaver, 2011). With increasing concerns about environmental issues, the impact of environmental degradation on the behaviour of a modern consumer began to be noticed (Bramwell, 2015). Public discussions, supported by the speeches of many authorities from the world of science, have become the seeds of customers' ecological requirements (Bramwell et. al, 2017). These needs have been transferred to different levels of life, including leisure (Mair, Jago, 2010). Consumers started to look closely at products and services, choosing those that are environmentally friendly (Radwan, Jones, Minoli, 2012). These activities have resulted in some companies from the hospitality industry beginning to undertake treatments aimed at providing eco-friendly services and promoting environmental values in order to motivate customers to choose a hotel based on their attitude to the natural environment (Fatoki, 2019; Akehurst, Afonso, Goncalvez, 2012; Bohdanowicz, 2006a; Laroche, Bergeron, Barbaro-Forleo, 2001).

1. Theory

The hospitality industry is one of the most environmentally destructive tourism sectors. On average, from 160 kg to 200 kg of carbon dioxide are generated annually per 1 hotel room. Additionally, for a five-star hotel, water consumption ranges from 170 to 400 litres per guest per day. Moreover, hotels generate an average of 1 kg of waste per 1 guest per 1 hotel night (Fatoki, 2019). It all gener-

ates higher operating costs of the hotel and a decrease in its profitability. In the face of these facts, hotel owners and managers have started to implement pro-ecological activities, including separate collection of rubbish and waste hazardous for the environment, economical management of heating and electricity, including the use of solar energy, saving water resources (Shieh, 2012), use of environmentally friendly detergents, re-use of towels and bedding, giving up the use of disposable dishes and containers (Butler, 2008). Satisfying people's needs at that time is without prejudice to future generations (Lee, Jai, Li, 2016; Bouchair, 2014; Bouchair, 2004) and improves the image and profitability of the hotel operation. This intergenerational solidarity makes it possible to apply solutions that allow taking advantage of the economic development of tourism, protecting the natural environment and, simultaneously, obtaining savings related to the ecological acquisition of energy and the re-use of certain resources. Savings related to such practices are very important values for developing countries (Banshwar et. al, 2017; Millar, Baloglu, 2011). This is confirmed by research on environmental protection carried out including in Sweden (Bergek, Mignon, 2017; Tsai, Wu, Wang, 2014). Polish hotels are also increasingly using renewable energy sources and pursuing environmentally friendly policies. Increasing customers' awareness means that the environmental aspect is often a decisive factor influencing the choice of a hotel by guests (Egilmez, Park, 2014; Mandal, Madheswaran, 2010). Hotels, focusing on eco-tourism, base their offer on the use of ecological technologies that do not harm the environment (Subbiach, Kannan, 2011).

As a consequence of the implemented pro-ecological policy, there are many tangible benefits important for hotels:

— building a hotel brand,

— reducing the hotel's costs thanks to the use of a more rational management of raw materials, i.e. energy, water and waste,

— increasing competitiveness due to the introduction of technological innovations,

— increasing environmental awareness among the hotel's customers and employees.

Therefore, it is important to study the pro-ecological behaviour of consumers and generate demand for ecological hotel services. Classic models of consumer behaviour and empirical models of consumer behaviour have been transformed by tourism industry researchers into models of making the shopping decisions by tourists. However, it should be noted that the process of purchasing a accommodation service is different from the process of purchasing material goods (Mazurek-Kusiak, 2019), thus basing the theory of tourist behaviour on classic models that relate to material products provides insufficient knowledge about realistic behaviour of hotel guests.

Classic models of tourists making shopping decisions also did not take into account factors affecting the choice of a particular ecological hotel. The need to examine these factors is very important due to the increasing competitiveness between hotels and difficult market situation of these entities because of epidemic, ecological disasters, the economic crisis and terrorist attacks.

The awareness of barriers concerning the use of ecological hotel services by society of the Eastern Poland Region will have great significance both for hotel owners and management staff as well as for the local and central authorities. This knowledge can encourage them to take actions that will eliminate the existing barriers and will increase the availability of green hotels for the average Pole from Eastern Poland (Mazurek-Kusiak, 2018). The originality of the research consists in taking into account the specificity of Polish tourists and operating conditions of the hotel industry on the tourist market of Eastern Poland. By 1989, in the Eastern Poland Region, no economic calculations were made in strategic decisions of enterprises' activities, and no attention was paid to the protection of natural environment. Poles from Eastern Poland were not accustomed to include costs related to the nature conservation in the price of products.

The published research, which was conducted in Poland, does not exhaust the topic, because it was not undertaken on a large scale, especially since the hotel managers were the most frequently assessed for their ecological awareness. Among others, Bohdanowicz (2006a) dealt with this subject, but his research mainly included countries of Western Europe, while Poland was treated in a marginal way. Thus, there is a gap in the literature on the subject of ecological behaviour of hotel guests in the Central and Eastern European countries (former socialist countries).

The aim of the study is to analyse the attitudes of the society of Eastern Poland towards a range of hotels that declare the pro-ecological activities in their offer. Efforts have been made to identify barriers to higher prices for respondents as an increased cost of protecting the environment. The following research questions were asked: How often does a tourist from Eastern Poland choose a hotel based on ecological considerations? How much more is he able to pay for such a service?

The paper states the following hypothesis: on the market of accommodation services in Eastern Poland there are groups of tourists who, when booking accommodation, pay attention to the environmental aspects of hotel operations, including ISO 14001 certificate, an economical energy policy and a rational waste policy in the hotel. These tourists are able to pay more per night if the higher price are resulted from hotel activities in the field of environmental protection.

It can be assumed that the behaviour of tourists from the Eastern Poland Region is similar to the behaviour of other tourists from Central and Eastern Europe, as they have a similar culture, tradition and economic development.

In order to solve the problem, the discriminant function model was used, indicating the factors determining the choice of ecological rest and barriers associated.

2. Methods

The study used the method of a diagnostic survey with a research tool in the form of an original questionnaire, that provided necessary data to achieve the intended purpose. According to Berbeka (2016), direct survey technique is the best available method used in qualitative research, especially when the research assumes obtaining original data describing a population too large to be able to observe it directly.

The research was conducted from May to October 2017 among Eastern Poland residents (0.02 % the population of residents of the Lublin voivodeship, Podkarpackie voivodeship and Podlaskie voivodeship) using hotel accommodation services. Time and place of data collection did not affect the results obtained. Five-point Likert scale was used to measure the attitudes. The size of the research sample was based on the size of adult population of Eastern Poland. When calculating the representative sample size, the confidence level was set at 0.95, the estimated fraction size at 0.05, while the maximum error was set at 0.05. A layered selection was used, in which respondents were selected on the basis of their availability, taking into account criteria related to adulthood, gender (women accounted for 52.17 % and men for 47.83 %), type of residence (32.82 % of interviewed respondents were from the village, 24.23 % of examinees were from small towns, 42.95 % from big cities) and age (29.01 % of respondents are up to 30 years old, 22.01 % — people aged 31–45 years, 27.70 % — residents aged 46–60 years, 21.28 % — respondents aged 61 and older). The structure of the respondents corresponded to the demographic structure of residents in the Eastern Poland Region. Respondents filled out 3100 questionnaires, of which 3071 were used for statistical calculations.

Statistica 13PL software was used for statistical calculations. In order to decide which variables distinguish four naturally emerging groups, the discriminant function analysis was carried out, which allowed us to examine differences between groups of objects based on a set of selected independent variables (predictors). The discriminant functions $\delta(x)$ have a general form:

$$\delta(x) = w^T x + w_0 = \sum_{i=1}^{k} w_i x_i + w_0.$$

Discriminant function analysis performs a multivariate test of differences between groups and approaches to the problem by assuming that the conditional probability density functions $p(\vec{x}|y=0)$ and $p(\vec{x}|y=1)$ are both normally distributed with mean and covariance parameters $(\vec{\mu}_0, \sum_0)$ and $(\vec{\mu}_1, \sum_1)$, respectively. Under this assumption, optimal solution is to predict points as being from the second class if the log of the likelihood ratios is bigger than some threshold T, so that:

$$(\vec{x}-\vec{\mu}_0)^T \sum_0^{-1} (\vec{x}-\vec{\mu}_0) +$$

$$+\ln|\sum_0| - (\vec{x}-\vec{\mu}_{01})^T \sum_1^{-1} (\vec{x}-\vec{\mu}_1) - \ln|\sum_1| > T.$$

where: w_i — regression coefficients, $\vec{\mu}_k$ — mean parameters, $\sum_k$ — covariance.

The study used a classification function in the form of calculating the coefficients defined for each group of variables parameters. This method of testing the statistical hypothesis was chosen, because it is looking for rules of conduct aimed at assigning multidimensional objects to one of many populations with known parameters, with the minimum possible classification errors. In addition, such analysis is used in correlation studies, i.e. when causal relationships between variables are not well recognised. Chi-square independence tests were also used in the research process.

The limitation of the study was the fact that respondents were reluctant to give real reasons for choosing a hotel. There were often personal and intimate reasons that people did not want to share in the diagnostic survey. They might indicate in the survey that they have chosen hotels meeting the environmental standards, but they did not really mean it.

3. Results

At the beginning, the respondents were asked whether they would pay attention to the fact that the hotel, in which they intended to spend the night, met the safety standards and was environmentally friendly.

Statistically significant differences in the frequency of paying attention to the ecological behaviour of a hotel when booking an accommodation resulted from the age of respondents ($p < 0.0001$). As many as 20.99 % of young people up to 30 years of age, when choosing a place to stay, often checked whether the hotel met safety standards and conducted an environmentally friendly policy, but it was done very often by only 2.47 % of hotel guests from the discussed age group; 8.86 % of the surveyed young people never did it. In the age group of 31–45 years, as many as 24.26 % of respondents often drew attention to the "ecology" of hotels, very often — 4.73 %, while 10.95 % of respondents were not interested in this problem at all. As many as 5.70 % of people aged 46–60 years often checked the hotel for ecological behaviour, 22.47 % did it very often. It was never done by 15.61 % of hotel guests in this age group. The least interested in ecology were the oldest Poles from the Eastern Poland — people aged over 61 years, because as many as 26.21 % of them never checked accommodation from this point of view. This was often done only by 13.02 % of the surveyed people from the discussed age group, and very often — by 5.58 %. It can be said that as the age grows, interest in the choice of the hotel based on the environmental policy being pursued decreases (Table 1).

Then, the respondents were asked how much more were they able to pay for accommodation in a hotel, if the higher price had resulted from hotel activities in the field of environmental protection. Also in this case, significant differences in the behaviour of potential hotel guests were demonstrated due to the age of respondents ($p < 0.0001$). Test results are presented in Table 2.

As many as 25.89 % of people from the oldest age group of respondents, 18.63 % of people aged 46–60 years, not much less than 17.46 % of respondents in the age group of 31 45-years old and only 13.69 % of the youngest hotel guests did not accept higher price resulting from the hotel's environmental activities. The 5 % increase in the price was accepted by as much as 48.81 % of respondents aged 31–45, by 43.77 % of the youngest study participants, by 42.32 % of people aged over 60 and by 40.51 % of people aged 46–60. The price increase by 6–15 % was supported by 30.42 % of respondents aged up to 30, by 25.84 % of people from the age group 46–60, by 21.60 % of study participants aged 31–45 and only by 18.91 % of the oldest. The increase in the price by more than 50 % was agreed by only 0.11 % of people up to 30 year of age, by 1.04 % of respondents aged 31–45, by 0.01 % from the age group 46–60 and by 1.40 % of the oldest participants of the study. Most people from the oldest age group did not accept the

Table 1

Frequency of hotel respondents checking whether a hotel meets safety standards and implements environmentally friendly policies

Specification	Test size	very often	often	rarely	very rarely	never	total
							Data in %
Age	$N = 3071$	*Chi-square test = 141.8810; p < 0.0001*					
up to 30 years old	891	2.47	20.99	39.28	28.40	8.86	100.00
31-45 years old	676	4.73	24.26	30.92	29.14	10.95	100.00
46-60 years old	859	5.70	22.47	30.73	25.49	15.61	100.00
61 or older	645	5.58	13.02	27.75	27.44	26.21	100.00

Source: Own study based on the research.

Table 2

Possibility for the respondents to pay a higher price for the accommodation service in a hotel that conducts activities and investments in the field of environmental protection

Specification	Test size	nothing	1–5 %	6-15 %	16-30 %	31-50 %	> 50 %	total
								Data in %
Age	$N = 3071$	*Chi-square test = 81.9188; p < 0.0001*						
to 30 years old	891	13.69	43.77	30.42	8.87	3.14	0.11	100.0
31-45 years old	676	17.46	48.81	21.60	6.80	4.29	1.04	100.0
46-60 years old	859	18.63	40.51	25.84	10.94	3.03	1.05	100.0
61 or older	645	25.89	42.32	18.91	9.46	2.02	1.40	100.0

Source: Own study based on the research.

Table 3

Barriers that make it impossible to pay a higher price for a hotel providing eco-friendly services

Factor	Model of discriminant analysis: Wilks' λ : 0.93874; $F(21.8790 = 9.3169; p < 0.001$			Classification function (age of respondents)			
	Wilks' λ	*F*	*p*	< 30 years old *s* = 0.29	31–45 years old *s* = 0.22	46–60 years old s = 0.28	> 60-years old *s* = 0.21
Low income of respondents*	0.948	9.5185	<0.001	1.2725	1.0715	1.0089	1.1053
Willing to buy the cheapest accommodation*	0.942	4.2116	0.005	1.2227	1.0839	1.0582	1.2377
No promotion of ecological hotels*	0.946	7.6272	<0.001	0.6676	0.6508	0.6743	0.4372
Lack of knowledge about environmental activities in hotels*	0.945	6.9443	0.001	0.6547	0.8314	0.8713	0.5673
Lack of ecological awareness	0.939	0.9346	0.423	2.1747	2.1713	2.1729	2.0741
The location of the hotel is more important	0.940	0.9906	0.396	0.4786	0.3908	0.4923	0.4418
Choose only recommended hotels	0.941	1.9368	0.121	–0.0908	–0.1608	–0.1857	–0.2182
Constant				–13.734	–12.805	–12.770	–11.562

* significant relationships at $p < 0.05$.
F — Fisher test, Wilks' λ — Wilks' lambda distribution, *p* — significance levels, *s* — proportion.
Source: Own study based on the research.

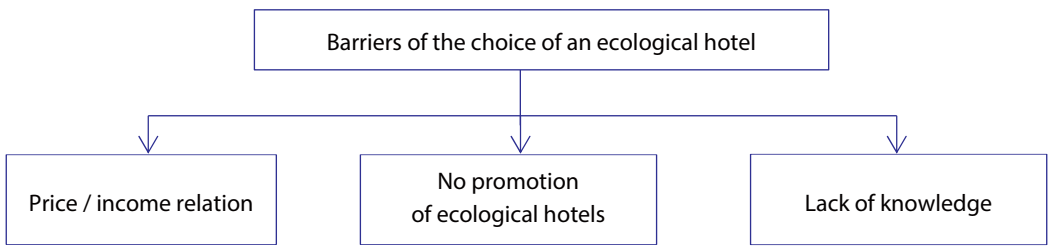

Fig. 1. *Barriers to choosing an ecological hotel by the Poles from Eastern Poland (source: Own study)*

increase in the prices of accommodation services resulting from the hotel's environmental activities (Table 2).

Respondents were also asked about barriers that made it impossible to pay a higher price for accommodation services in hotels that implement eco-friendly policies. The model included 4 of 7 barriers. Statistically significant effects of individual discriminating factors, from the highest to the smallest, were: low income of respondents (F=9.5185, p<0.001), lack of promotion of eco-hotels (F=7.6272, p<0.001), lack of knowledge about ecological activities in hotels (F=6.9443, p=0.001), willingness to purchase the cheapest accommodation (F=4.2116, p=0.005) (Table 3). Following factors did not qualify for the model: "I choose only recommended hotels" (F=1.9368, p=0.121); location of the hotel (F=0.9906; p=0.396); lack of ecological awareness (F=0.9346, p=0.423).

Classification function reached the highest value at the low-income barrier for the respondents. At p<0.001, this barrier made it impossible to pay a higher price for an ecological accommodation service among young people up to 30 years of age (1.2725) and the oldest people over 60 (1.1053). Of great importance for people of these two age groups was also the barrier to buy the cheapest accommodation. These two barriers are closely related, because people with low income, when booking an accommodation, will often pay much attention to the price of products. Lower classification function was achieved for "no environmental promotion of hotels" as the barrier. At p<0.001, such declarations were more frequently presented by people aged up to 60 than those aged over 60 (0.4372). The lack of knowledge about environmental activities in hotels was a barrier mainly for people aged between 31 and 60 (Table 3, Figure 1).

Then the study was conducted on ecological activities that determine the choice of a given hotel by respondents in different age groups. The model included 3 of 8 factors that tourists from the Eastern Poland Region pay attention to when choosing an eco-friendly hotel. Statistically significant effects of individual discriminating factors, from the highest to the smallest, were: possessing the ISO 14001 certificate from the International

Table 4

Ecological factors considered when choosing a hotel, taking into account the age of respondents

Factor	Model of discriminant analysis: Wilks' λ: 0.80598; F(24.8875) = 28.552; $p < 0.001$			Classification function (age of respondents)			
	Wilks' λ	*F*	*p*	< 30 years old *s* = 0.29	31-45 years old *s* = 0.22	46-60 years old *s* = 0.28	> 60-years old *s* = 0.21
Preparing meals from organic products*	0.810	5.5773	0.001	1.3613	1.5005	1.5475	1.4241
Conducting a cost-effective energy policy*	0.812	8.2339	<0.001	0.4144	0.6138	0.6099	0.3048
Having an ISO 14001 certificate*	0.901	120.4297	<0.001	0.8429	0.3414	0.4110	0.2583
Having thermal insulation	0.806	1.2553	0.288	1.5507	1.5069	1.4633	1.5299
Having solar panels	0.807	1.5006	0.212	0.0744	0.0479	0.0535	0.0572
Conducting appropriate water management	0.808	2.5242	0.056	0.1061	0.0226	0.0636	0.1995
Using biodegradable cleaning agents	0.807	1.4060	0.239	0.0026	0.0790	0.0304	0.0704
Constant				–10.1267	–9.4218	–9.3374	–7.4406

* significant relationships at $p < 0.05$.
F — Fisher test, Wilks' λ — Wilks' lambda distribution, *p* — significance levels, *s* — proportion.
Source: Own study based on the research.

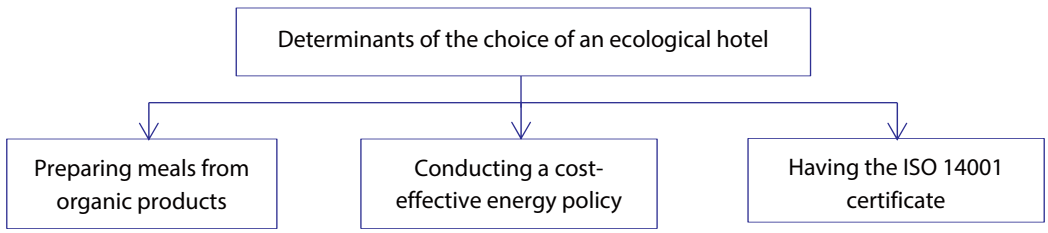

Fig. 2. *Ecological factors considered when choosing a hotel by the tourists from Eastern Poland (source: Own study)*

Organization for Standardization ($F = 120.4297$, $p < 0.001$), conducting a cost-effective energy policy ($F = 8.2239$, $p < 0.001$), and preparing meals from organic products ($F = 5.5773$; $p = 0.001$) (Table 4). Following factors did not qualify for the model: thermal insulation ($F = 1.2553$, $p = 0.288$), solar panels ($F = 1.5006$, $p = 0.212$), proper water management ($F = 2.5242$; $p = 0.056$), implementation of rational waste management ($F = 2.4325$, $p = 0.063$), and use of biodegradable cleaners ($F = 1.4060$, $p = 0.239$). As it can be seen, the model included factors that respondents might notice when staying in a hotel or following a hotel website.

Classification function has reached the highest values with the factor "preparing meals from organic products". This factor was the most important for people aged 46–60 (1.5475) and respondents aged 31–45 (1.5005). Implementation of a cost-effective energy policy was also very important. The classification function has assumed a high value of 0.6138 in the case of people aged 31–45 and a little lower (0.6099) for people aged 46–60. The possession of the ISO 14001 certificate was important mainly for the youngest group of respondents. The classification function in this case has reached the value 0.8429 (Table 4, Figure 2).

4. Discussion

The conducted research shows the Eastern Poland society's view of environmental issues in the hotel sector and factors shaping the corresponding attitudes.

Understanding the motivation of a tourist in choosing a hotel requires broader perspective. It seems necessary to examine relevant literature. Often, economic considerations or consumerism prevail over sustainable development considerations (Bohdanowicz, 2006b; Michel, 2006; Honey, 1999). It happens that in order to ensure a higher standard, the actions taken by hotel staff consume large amounts of energy or water, which contradicts the policy of ecological management (Grimes, Bouchair, Tebbouche, 2017). Involvement of hotel owners and managers is not always prop-

erly perceived by the customer; some researchers (Lee et. al, 2010; Han, Hsu, Sheu, 2010) drew attention to the fact that single ecological activities will not necessarily be a magnet attracting the tourists. On the other hand, proper promotion is necessary, including the opinion of guests (Nusair et. al, 2011) and information about ecological activities and their advantages easily accessible for potential tourists, which will encourage to book such accommodation (Han, Hyun, 2018; Chang et. al, 2015; Butler, 2008). This is particularly true for undecided or ecologically unconscious people, and those, for whom the economic barrier, i.e. low incomes and desire to buy the cheapest accommodation, determine their choice. In Eastern Poland, as the present research shows, it is still a significant group of respondents.

Despite the existing barriers, it is worth to learn factors determining the consumer choices of hotel guests (Han et. al, 2018; Trang, Lee, Han, 2018; Han, Yoon, 2015; Kim, Kim, 2014; Wei, Miao, Huang, 2013; Kim, Han 2010). In the world, more and more people are looking for beds that meet the standards of environmental management and environmental protection (Dabour, 2003; Manaktola, Jauhari, 2007; Chen, Peng 2012). Despite some obstacles, the awareness of the need to make purchase choices that are environmentally friendly, even at the expense of a price increase, is growing in Eastern Poland. Research indicates (Pereira-Moliner et. al, 2015) that people who care for the environment will choose offers that do not threaten it. Furthermore, as the literature indicates, there is a connection between the own ecological awareness and consumer choices (Yi, Li, Jai, 2018).

Tang and Chen (2017) drew attention to a very important aspect of sustainable development, which should be implemented already at the planning stage of a hotel construction. Cooperation of all entities at this stage is extremely important. Reaching the developer's and architect's goal should be the same as supporting sustainable development, local culture and the interests of residents (Dabour, 2003). Due to the cooperation of all participants, a team is established that defines the objectives and ways to achieve them by combining environmental protection, deriving benefits from cultural heritage and achieving economic benefits, thus ensuring satisfaction of all interested parties (Ricaurte, 2011; Zhang, Joglekar, Rokit, 2010): investor, local government, hotel guests and local residents.

Projects related to environmental protection in the hotel industry are mainly based on activities related to saving energy and water and rational waste management. These are the areas, to which most of the pro-ecological solutions are addressed. Ecological projects that are undertaken in the hotel depend on the corporate policy, level of ecological awareness of the hotel management and financial resources (Hsiao et. al, 2014). However, in the first place, hotel guests notice those aspects of ecological activities that will be visible on the website of the accommodation facility. It is important, therefore, that the pro-ecological activities should be "vaunted" and the society should be informed about them. This was also confirmed by our research.

5. Conclusions and Implication

Among Eastern Poland population aged over 60, interest in choosing a hotel that conducts pro-environmental activities is low. These activities have a minor impact on booking made by these people. As many as 25.89 % of them are not able to pay a higher price for an accommodation in a hotel that conducts activities and investments in the field of environmental protection. This is mainly due to the low income of this social group. However, in groups of younger Poles from Eastern Poland, the lower the age range, the fewer people would refuse to pay for a service in a hotel that pursues pro-ecological policy. Poles from the Lublin voivodeship, Podkarpackie voivodeship and Podlaskie voivodeship up to 30 years old are more environmentally conscious. As many as 86.31 % of them are able to pay a higher price for a night in an eco-friendly hotel. At the same time, these people generate a greater demand for the services of ecological hotels. The statistically significant factor in ecological activities, which were addressed by guests when choosing a hotel, was the preparation of meals from organic products, running a cost-effective energy policy and having the ISO 14001 certificate.

The statistically significant barriers preventing from paying a higher price for an ecological accommodation service in a hotel for tourists from Eastern Poland were mainly economic reasons, i.e. low income of consumers, desire to purchase the cheapest accommodation, no promotion of ecological hotels and lack of knowledge about environmental activities in hotels. The idea of solving the problem of low incomes of the society and high prices of accommodation services may be a change in Polish legislation, in such a way that the financing of rest in Poland should not belong to all employees, but only to those who choose to stay in an eco-friendly hotel. The Polish government may also introduce subsidies to ecological solutions in hotels, so that the price

of accommodation is adequate to the level of income of the Polish society.

In order to increase the demand for ecological hotels, it is worth paying attention to the promotion of those eco-friendly policies with the satisfaction of actions they undertake to protect the natural environment. It is also worth paying attention to the promotion of ecological hotels, with emphasis on the activities they take to protect the natural environment. The website of the accommodation facility should show the ISO 140001 certificate, information about the hotel's energy-saving energy policy and information about ecological products, which are sold in hotels.

The conducted research confirmed the hypothesis that on the market of accommodation services in Eastern Poland there are groups of tourists who, when booking an accommodation, pay attention to the environmental aspects of hotel operations, including the ISO 14001 certificate, an economical energy policy. However, on the other hand, in order to increase the demand for green hotel services, economic and tax incentives should be introduced as a stimulus to choose accommodation in green hotels.

These developments would increase demand for green hotel services among visitors from the Eastern Poland Region.

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About the authors

Anna Katarzyna Mazurek-Kusiak — Dr. Sci. (Econ.), Department of Tourism and Recreation, University of Life Sciences in Lublin; Scopus Author ID: 57189385840; https://orcid.org/0000-0002-3786-8861 (13, Akademicka St., Lublin, 20-950, Poland; e-mail:anna.mazurek@up.lublin.pl).

Bożena Bednarska — Dr. of Physical Education, Department of Tourism and Recreation, University of Life Sciences in Lublin; https://orcid.org/0000-0002-4833-7230 (13, Akademicka St., Lublin, 20-950, Poland; e-mail: bozen.bednarski@op.pl).

Информация об авторах

Мазурек-Кусяк Анна Катажина — доктор экономических наук, кафедра туризма и отдыха, Университет естественных наук в Люблине; Scopus Author ID: 57189385840; https://orcid.org/0000-0002-3786-8861 (Польша, 20-950, г. Люблин, ул. Академическая, 13; e-mail: anna.mazurek@up.lublin.pl).

Беднарска Божена — доктор наук по физическому воспитанию, кафедра туризма и отдыха, Университет естественных наук в Люблине; https://orcid.org/0000-0002-4833-7230 (Польша, 20-950, г. Люблин, ул. Академическая, 13; e-mail: bozen.bednarski@op.pl).

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