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CHARACTERISTICS OF DEMAND FOR RECREATIONAL ACTIVITY ON CYCLING ROUTES IN LANDSCAPE PARKS OF LUBLIN PROVINCE

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ABSTRACT: The aim of the research was to determine the group of inhabitants of Lublin province as users of cycling routes in the landscape parks of Lublin province and frequency of this activity. Recreational activity in this respect was analyzed in terms of gender, age, education, place of residence and occupational status.

The research was carried out using the direct survey method, which was carried out among 1203 inhabitants of the Lublin province, who were able to ride a bicycle. Statistical computations were performed applying Statistica ver. 13 PL software, using non-parametric tests: the Mann-Whitney U test, the Kruskal-Wallis test, and the median test. Following conclusions have been drawn from the research: a typical user of cycling routes is a young person up to 30 years of age, still learning and/or pursuing a freelance occupation. Therefore, when developing new bicycle routes in the landscape parks, they should be adjusted to this age group of participants. Young people going on a bike tour are expecting to download mobile applications that will allow to get acquainted with the most interesting attractions on the itinerary, as well as QR code images on the information boards. There are pensioners who can be attracted to cycling routes in the landscape parks, providing them with the necessary infrastructure (benches, information boards, fireplaces/BBQs, relaxation areas) and organizing guided bike tours with trainers or animators.

KEY WORDS: demand, bicycle tourism, landscape parks, Lublin province

Introduction

Currently, in the era of civilization development, landscape parks located especially in forested areas constitute an increasingly important tourist and recreational space (Marszałek 2000, p. 8-16). The forest environment is widely regarded as a healthy and attractive holiday destination. The favorable impact of the forest is manifested in the mitigation of solar radiation, noise suppression, wind and water erosion prevention. Due to the favorable microclimate, which is beneficial for the regeneration of physical and mental forces, forest areas are readily visited by cyclists (Pawlikowska-Piechotka, 2009, p. 135).

Providing landscape parks with appropriate cycling infrastructure tailored to the needs of visitors will allow tourists to travel to the municipality for up to a few days, thereby generating demand for accommodation and catering services, as well as increasing ticket sales for museums, cultural and entertainment facilities.

In order to attract bikers to landscape parks, a universal and unified marking system should be used and infrastructure adapted to the preferences of individual user groups. It is good if the bike tracks are adjusted to the age and expectations of potential users. It is also important to designate routes of different difficulty levels and to introduce a system of information on handicaps for more sensitive and demanding groups. Organization of cycling routes in landscape parks should include links to surrounding areas in the immediate vicinity and to the region. This applies both to tourism and transport infrastructure (Cieszewska, 2015, p. 53-60).

On the other hand, it is important to note that the tourist activity occurring in the landscape parks should take place in accordance with the principles of sustainable development (Sawicki, Harasimiuk, 2014, p. 5). In addition, it should be borne in mind that the trails should be marked in places showing the most attractive natural and cultural values, while not damaging these values (Paryka, 2010, p. 11).

Objective, Material and Research Methods

The purpose of the study was to determine the group of inhabitants of Lublin province that is the user of cycling routes in landscape parks in Lublin province and the frequency of this activity. Recreational activity in this respect was analyzed in terms of a gender, age, education, place of residence and occupational status.

The research was conducted by means of the diagnostic survey method using the direct questionnaire technique. The survey used a questionnaire, which was conducted among 1203 inhabitants of Lublin province in 2016, who were able to ride a bicycle.

Characteristics of the research area

Lublin province is characterized by valuable natural virtues, both landscape and biological. Protected enclaves occupy an area of 570 425.1 ha, which accounts for 22.7% of the province area (Gonera, 2015, p. 18-20). Nature conservation in this area is implemented in 2 national parks with a total area of 18 245 hectares, 17 landscape parks with a total area of 241 182 hectares, 17 protected areas of 310 310 hectares, 86 nature reserves of 11 560.5 hectares, including 457.7 hectares under strict protection and 148 ecological areas with the total area of 4 107 hectares. The diversity and abundance of nature is the result of the Lublin region location on the physiographic border of Eastern and Western Europe (Łapińska et al., 2011, p. 5). Landscape parks occupy as many as 41% of all areas of special natural heritage protected by law and have landscape diversity that is a rich mosaic of habitats for flora and fauna and related to biodiversity in the world of plants and animals. They are a magnet attracting tourists to Lublin province. The largest area in the landscape parks of that area is covered by forests (about 47.4%), then agricultural land.

There are designated and marked 31 cycling trails in the Lublin province with a total length of 740 km, of which 76% run through landscape parks (Ćwik, 2007, p. 20).

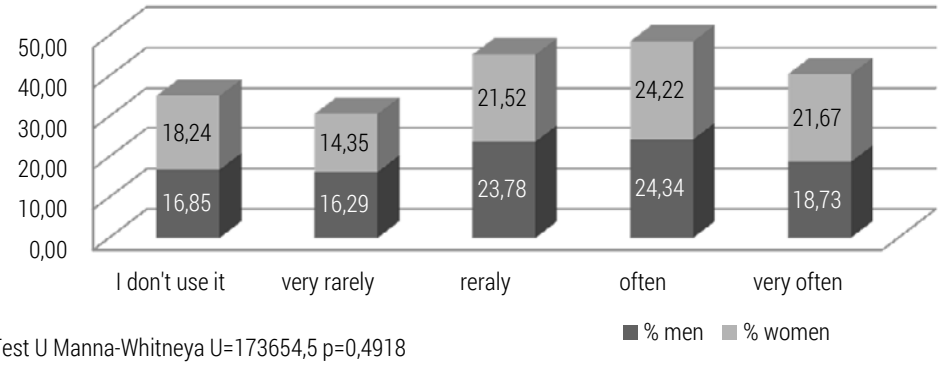
Results

Prior to analyzing, multivariate normality was verified by examining each variable for normal distribution. The data did not show a normal distribution, because the W. Shapiro-Wilk test was W = 0.89112, and the level p = 0.000 was lower than $\alpha = 0.05$, thus the hypothesis of normal distribution was rejected.

At first, following hypotheses were made:

H_0: frequency of cycling tours in landscape parks is not gender-related;

H_1: frequency of cycling tours in landscape parks is gender-related.



Test U Manna-Whitneya U=173654,5 p=0,4918

Figure 1. Frequency of bicycle tourism depending on gender

Source: authors' own work based on the research.

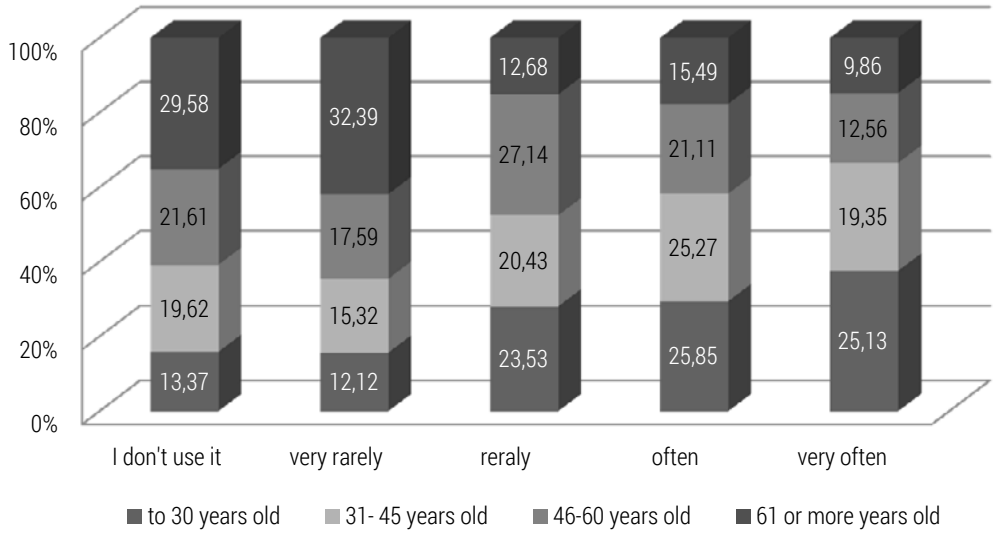
From the analysis of data presented in figure 1, it was found that 18.24% of women and 16.85% of men do not use recreational cycling in landscape parks in Lublin province. On the other hand, cycling tourism is very popular among 21.67% of women and 18.73% of men. However, as evidenced by the Mann-Whitney U test U = 173 654.5; level p is 0.4918, which is greater than the assumed significance level of $\alpha = 0.05$, therefore there is no reason to reject the null hypothesis, i.e. the differences in frequencies of tourism between men and women are not statistically significant.

Then the frequency of cycling tourism in the landscape parks was taken into account, considering the age of respondents, and there were two hypotheses put:

H_0: frequency of cycling tours in landscape parks is not age-related;

H_1: frequency of cycling tours in landscape parks is age-related.

On the basis of data presented in figure 2, it can be seen that cycling in landscape parks is the most popular among young people up to 30 years old (25.13% of people in this age group often use cycling trails in bicycle parks and 25.85% often). Second place is the 31-45 age group, among which up to 19.35% of the representatives often take cycling trips in landscape parks and 25.27% often. The people, who are aged 61 and over, are the least likely to take the cycle routes in landscape parks. There is a general conclusion here that, along with people age, the frequency of respondents' use of cycling routes in landscape parks decreases.



Total median = 3.0
Chi square = 29,507821 df = 3 p = 0.0000
Kruskal-Wallis test: H (3, N= 1203) =43,22461 p =0,0000

Figure 2. Frequency of bicycle tourism depending on age
Source: authors' own work based on the research.

Table 1. Multiple comparison of mean ranks for all samples based on age

Respondent's age	The p value for multiple (bilateral) comparisons Independent variable (grouping): age Kruskal-Wallis test: H(3, N=1202) = 92.39138; p = 0.000			
	Up to 30 years R: 657.73	31-45 years R: 590.50	46-60 years R: 52.86	61 years and older R: 429.75
Up to 30 years	-	0,022816	0,000035	0,000001
31-45 years	0,022816	-	0,240435	0,002120
46-60 years	0,000035	0,240435	-	0,246413
61 years and older	0,000001	0,002120	0,246413	-

Source: authors' own work based on the research.

Based on multiple comparisons of mean ranks for all samples, it was demonstrated that significant differences occurred between age below 30 years and the remaining age ranges (table 1). Young people up to 30 years of age have more often used bicycle tourism in landscape parks than the rest of

Lublin province inhabitants. Also important statistically significant differences appear between cyclists aged 31-45 years and cyclists aged over 61 years. The oldest people rarely do cycling in landscape parks.

The frequency of cycling tourism in the areas legally protected according to the place of residence was then examined. Two hypotheses were put forward:

H_0: bicycle activity of Lublin province inhabitants in landscape parks does not depend on the place of residence;

H_1: bicycle activity of Lublin province inhabitants in landscape parks depends on the place of residence.

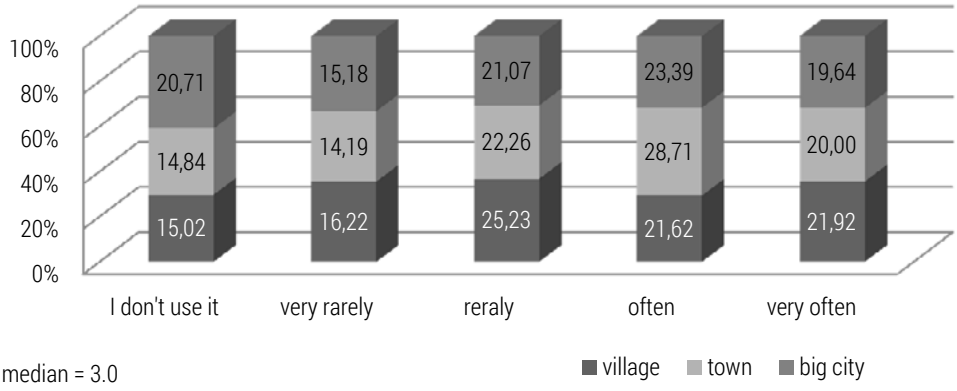


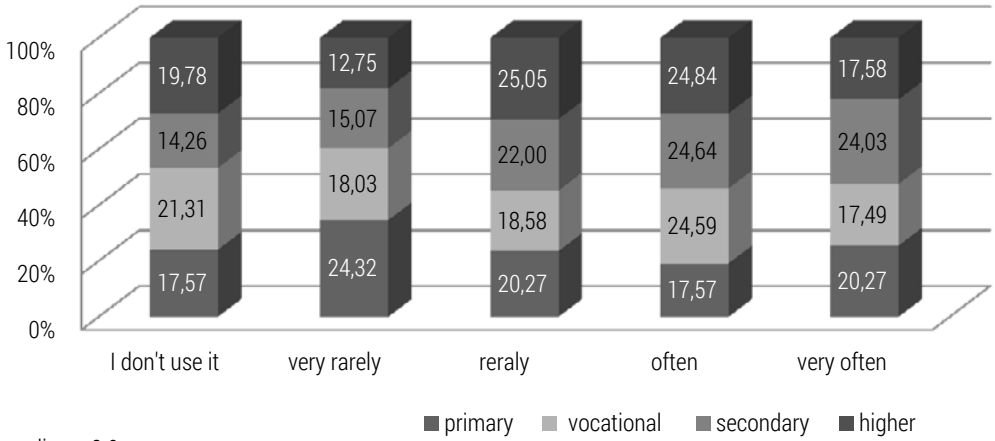
Figure 3. Frequency of bicycle tourism depending on place of residence

Source: authors' own work based on the research.

As can be seen in figure 3, cycling is often enjoyed in the landscape parks by 21.92% of the rural population, 20.00% of the inhabitants of small towns and 19.64% of the inhabitants of large cities, and often use bicycle routes located in legally protected areas is declared respectively by 62%, 28.71% and 23.39% of the respondents. 15.03% of rural respondents do not use such cycling activity, 14.84% of people living in small towns and 20.71% of inhabitants of large cities. However, the statistical significance level for the Kruskal-Wallis test is 0.1533, which is greater than 0.05, thus there is no reason to reject the null hypothesis. Likewise, the median test can be interpreted as meaning that the activity of Lublin province inhabitants on cycling routes in landscape parks does not depend on the place of residence.

The bicycle activity of Lublin province inhabitants depending on education was subsequently examined, and the results are shown in figure 4.

H_0: frequency of cycling routes use in landscape parks does not depend on education;
H_1: frequency of cycling routes use in landscape parks depends on education.

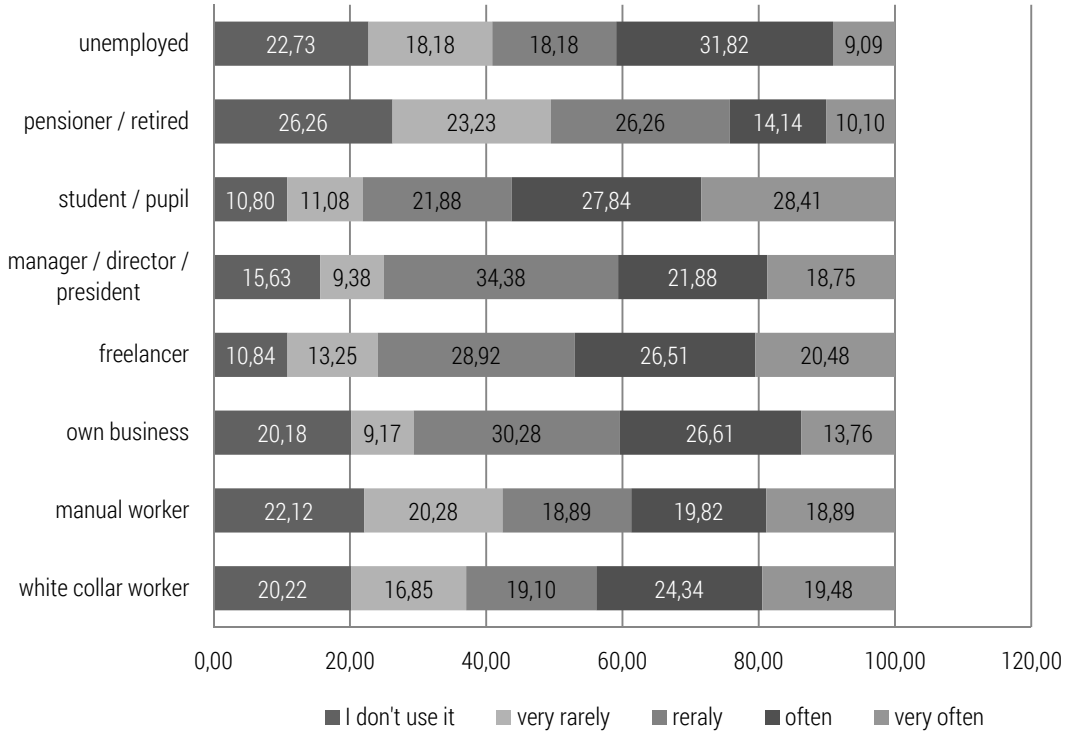


Total median = 3.0
Chi square = 6,018223 df = 3 p = 0,1107
Kruskal-Wallis test: H (3, N= 1203) =9,819941 p =0,2020

Figure 4. Frequency of bicycle tourism depending on education
Source: authors' own work based on the research.

Bicycle routes are very often used by 20.27% of the surveyed people with primary education. 17.49% of respondents with vocational education, 24.03% of those surveyed with secondary education and 17.58% with higher education. 17.57% of respondents with primary education, 23.31% of respondents with vocational education, 14.26% of respondents with secondary education and 19.78% of people with higher education do not practice this type of recreation. However, for the Kruskal-Wallis test, the statistical significance level is 0.202 and is greater than 0.05, hence there is no reason to reject the null hypothesis. Similarly, the median test can be interpreted as meaning that the cycling activity of the inhabitants of the Lublin province does not depend on education. Differences between groups are statistically insignificant.

Then the hypothesis was based on the professional status:
H_0: frequency of cycling routes use in landscape parks does not depend on professional status;
H_1: frequency of cycling routes use in landscape parks depends on professional status.



Total median = 3.0
Chi square =40,47501 df = 7 p = 0.0000
Kruskal-Wallis test: H (7, N= 1203) =52,41104 p =0,0000

Figure 5. Frequency of bicycle tourism depending on occupational status

Source: authors' own work based on diagnostic survey and statistical analysis.

Based on the data presented in figure 5, students and pupils (28.41% of respondents – very often) and freelancers (20.48% of respondents – very often) the most often used cycling routes in landscape parks. Such activity is not used by 26.26% of pensioners, 22.73% of the unemployed and 22.12 of the physically employed. The level of p for the Kruskal-Wallis test as well as the median test was 0.00, therefore the bicycle activity of Lublin province inhabitants on the landscape park routes is dependent on the occupational status of inhabitants, as the test p level is less than the assumed significance level of 0.05.

Multiple comparison of mean ranks for all samples has shown that significant differences in the use of cycle trails in landscape parks occur between students and pupils vs. mentally and physically employed, and between students and pupils vs. own business owners as well as pensioners. Significant differences also exist between freelancers and pensioners, as shown in table 2.

Table 2. Multiple comparison of mean ranks for all samples depending on occupational status of respondents

Variable: Rope parks	The p value for multiple comparisons; Independent variable (grouping): education Kruskal-Wallis test: H (7, N = 1203) = 52.41104 p = 0.0000							
	white collar worker R:582,53	manual worker R:550,77	own business R:575,08	freelance R:642,15	manager/ director/ president R:608,09	student / pupil R:694,6	pensioner / retired R:462,14	unemployed R:532,82
White collar worker		1,000000	1,000000	1,000000	1,000000	0,001960	0,090446	1,000000
Manual worker	1,000000		1,000000	1,000000	1,000000	0,000045	0,991948	1,000000
Own business	1,000000	1,000000		1,000000	1,000000	0,047352	0,537903	1,000000
Freelancer	1,000000	1,000000	1,000000		1,000000	1,000000	0,013964	1,000000
Manager / director / president	1,000000	1,000000	1,000000	1,000000		1,000000	1,000000	1,000000
Student / pupil	0,001960	0,000045	0,047352	1,000000	1,000000		0,000000	0,100224
Pensioner / retired	0,090446	0,991948	0,537903	0,013964	1,000000	0,000000		1,000000
Unemployed	1,000000	1,000000	1,000000	1,000000	1,000000	0,100224	1,000000	

Source: authors' own work based on diagnostic survey and statistical analysis.

Discussion

According to the Polish Gerontological Association (1993), for health reasons, systematic physical activity should be the duty of every human being, not just a choice. In opinion of Chen and Shoemeker (2014), tourism and leisure activities must be adapted to the age, mobility and health status, interests, financial status and occupational status (Chen, Shoemaker, 2014).

During physical activity and tourist trips, tourists should use both natural and cultural resources (Losada et al., 2016), as the human and natural environment are inextricably intertwined, and there is the most effective rest and regeneration of the body (Pilis et al., 2010). The sun, the snow, the forest, the sea, the lakes, the rivers, the mountains are protective for everyone (Kim, Lee, Preis, 2016).

Formation of tourism products usually begins with the recognition of the natural and cultural conditions of a given region. It is also important to analyze the tourist services that are already available. In the case of cycling tourism, the physical and health conditions of the users, often dependent on their age, are the determining factor. Therefore, understanding the needs of different user groups is a prerequisite for the proposed products to have not only high tourism potential, but also to be products expected by tourists (Developing 2006, Olszewski et al., 2010). In landscape parks, the first step in shaping the cycling routes is the initial determination of natural values, to which the actual product conforms.

According to Nikitin, Vorontsov (2015), due to the health reasons, attracting elder people to cycling routes is important. Cycling for the elderly is a good way to keep the body in good physical and mental health, but one should keep in mind that older people require special treatment, because they have specific needs and expectations (Hudson, 2010). The intensity of this activity and type of trails, where older people move, can be adjusted to the health and age of each person.

Conclusions for practice

1. Frequency of cycling tourism in landscape parks by inhabitants of the Lublin province depends on age and professional status. It is not dependent on gender, education or place of residence. Most cyclists are young people up to 30 years of age (50.98% of frequent and frequent indications). The demand for bicycle tourism decreases with age. The elderly are the least likely to participate in this activity, at the age of 61 and over (29.58% of people in this age group did not practice cycling in landscape parks). Considering the occupational status of respondents, the most frequent users of cycling routes in landscape parks are students and pupils (56.28% of the most often and often) and self-employed (46.99%). Pensioners use the bicycle routes most rarely.
2. A typical user of bicycle routes is a young person up to 30 years of age still learning or performing a freelance occupation. Therefore, when developing new bicycle routes in the landscape parks, they should be adjusted to the age group of participants. Young people going on a bike tour are expecting to download mobile applications, which would allow to get acquainted with the most interesting attractions on the route, also QR code images on the information boards are important.
3. Pensioners who can be attracted to cycling routes in landscape parks are the market niche. To do this, they should be provided with adequate infrastructure in the parks. Organized guided bike tours, developed rest-

ing places (benches, information boards, place for fireplace/barbecue, relaxation area), are important for this group.

4. Further research should concern the use of trails in landscape parks by people who practice other forms of recreational activity.

Literature

Chen S.C., Shoemaker S. (2014), *Age and cohort effects: The American senior tourism market*, "Annals of Tourism Research" Vol 48, p. 58-75

Ciszewska A. et al. (2015), *Turystyka rowerowa w lasach w świetle potrzeb i oczekiwań użytkowników*, „Studia i Materiały" CEPL w Rogowie Vol. 17. No. 45/4, p. 53-60

Ćwik J. (ed.) (2007), *Plan marketingu turystyki w województwie lubelskim*, Lublin, p. 20

Developing Off-road Cycling in Woodlands Across the South West – A Feasibility Study Report Appendices 2006, Forestry Commission England, http://www.forestry.gov.uk/pdf [07-06-2016]

Gonera H. (ed.) (2015), *Audyt turystyczny województwa lubelskiego 2015*, p. 18-20

Hudson S. (2010), *Wooing zoomers: Marketing to the mature traveler*, "Marketing Intelligence and Planning" Vol. 28(4), p. 444-461

Kim M.J., Lee Ch.K, Preis M.W. (2016), *Seniors' loyalty to social network sites: Effects of social capital and attachment,* "International Journal of Information Management" Vol. 3, p. 1020-1032

Losada N. et al. (2016), *Travel frequency of seniors tourists*, "Tourism Management" No. 53, p. 88-95

Łapińska K., Zieliński M., Deneka-Angel M. (2011), *Lubelskie – najpiękniejsze zakątki parków krajobrazowych*, Chełm 2011, p. 5, 7-12

Marszałek T. (2000), *Miejsce lasu w warunkach współczesnego przełomu dziejów świata*, in: K. Pieńkos (ed.), *Problemy turystyki i rekreacji w lasach Polski*, Warszawa, p. 8-16

Olszewski M. et al. (2010), *Produkt turystyczny – krok po kroku instrukcja przygotowania transgranicznego produktu turystycznego*, Cieszyn, p. 51-56

Partyka J. (2010), *Udostępnianie turystyczne parków narodowych w Polsce a krajobraz*, Ojców, p. 11

Pawlikowska-Piechotka A. (2009), *Zagospodarowanie turystyczne i rekreacyjne*, Gdynia, p. 135

Pilis A., Pilis K., Pilis W. (2010), *Rola turystyki w życiu ludzi starszych*, „Prace Naukowe Akademii i im. Jana Długosza w Częstochowie. Seria: Kultura Fizyczna" z. IX, p. 206-227

Polskie Towarzystwo Gerontologiczne – światowy Rok Ludzi Starych (1993), *Sztuka starzenia się*., p. 11-12

Sawicki B., Harasimiuk M., (2014), *Rola obszarów chronionych w rozwoju edukacji, turystyki i gospodarki*, Warszawa, p. 5