

CHARACTERISTICS OF DEMANDS FOR KAYAK TOURISM IN LUBLIN PROVINCE

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- kayak tourism
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- demand

Abstract:

The aim of the paper is to determine the frequency of kayak tourism by inhabitants of Lublin province. Recreational activities on kayaks were analyzed in terms of gender, age, education, place of residence, and occupational status. The survey used an original questionnaire, which was conducted among 1202 inhabitants of Lublin province in 2014. Statistical computations were carried out applying *Statistica* ver. 13 PL software, including U Mann-Whitney non-parametric test (for two groups) and Kruskal-Wallis test, as well as median test (for more groups).

According to the analysis of research results, the frequency of kayak tourism by inhabitants of the Lublin province depends on age and education, but is not dependent on gender, place of residence or material situation.

INTRODUCTION

Canoeing in Poland has been developing for more than 140 years and its popularity is growing as contemporary tourists want to experience true adventure on a route [Hurba 2013]. Kayak tourism is an interesting form of recreation whereby a person learns about the world, forms interpersonal relationships [Margaryan, Fredman, 2017], acquires new experiences, builds his own value system. Entering this form of motor recreation positively influences on the health of participants [Mazurek 2014], as it requires comprehensive, natural and coherent movements, develops positive traits such as persistence, decisiveness, as well as parenting values, including self-sustainability, mutual help, and group collaboration [Cholewa, Szepelawa 2005].

Kayak tourism does not require any special conditioning or equipment; it is enough to rent a kayak [Oreiro 1995]. This form of tourism can be cultivated both individually and in groups [Merski 2002]. Besides, kayak tourism is a carrier of many qualities, including:

- cognitive qualities (knowledge of the fauna and flora of rivers, lakes, as well as the culture and architecture of adjoining areas),
- emotional values (teaching the respect for cultural and natural goods),
- qualities of gaining new skills (shaping positive traits),
- health benefits (prevention of diabetes, heart and blood vessel diseases, psychosomatic diseases, atherosclerosis, obesity, etc.),
- educational values (facilitates human socialization) [Mazurek et al. 2015; Toczek-Werner, 2007].

The aim of the research was to determine the frequency of kayak tourism by inhabitants of Lublin province. Recreational activity in this respect was analyzed in terms of gender, age, education, place of residence, and occupational status.

MATERIAL AND METHODS

The research used an original questionnaire, which was conducted among 1202 inhabitants of the Lublin province in 2014. During the initial stage, a random selection was used using a layered sample. The population was divided taking into account their place of residence into rural, small towns up to 20 thousand, and cities over 20 thousand inhabitants. At the subsequent selection stage, the number of women and men was proportionally determined. These actions allowed to determine the sample size, in which the confidence level was set at 0.95 and the maximum error was set at 0.05. In the next stage, the non-random selection was used, consisting of responding to the respondent's availability, up to a certain number of respondents in individual groups.

Statistical computations were carried out applying *Statistica* ver. 13 PL software, including U Mann-Whitney non-parametric test (for two groups) and Kruskal-Wallis test, as well as median test (for more groups).

CHARACTERISTICS OF THE RESEARCH AREA

On the map of Poland, the Lublin province occupies the middle part of the right bank of the Vistula River catchment. The nature and landscape significance of rivers in Lublin region is very large and is ideal for lowland kayak tourism [Majewska et al. 2008]. Rivers and canals of the Lublin region, that are useful for canoeing, are presented in Table 1.

Table 1. Main rivers and canals of the Lublin province suitable for kayak tourism

River/Canal	Length in km	
	In Lublin province	In Poland
Vistula	116,8	1047,5
Bug	366,8	772,0
Wieprz	303,2	303,2
Wieprz-Krzna	139,9	139,9
Tyśmienica	76,3	76,3
Tanew	69,3	113,0

Source: Data of the Regional Water Management Board in Warsaw, Inspectorate in Lublin, Lublin 2013.

The canoe rafts are mainly organized on the Vistula river, on Wieprz river from the mouth of Por river, on Bug river from Huczwa river estuary, on Tanew river from the mouth of Szum river, on Bystrzyca river from Krężniczanka river estuary, on Tyśmienica river from Piwonia river estuary. Kayaks can also be used for canoeing on Wieprz-Krzna Canal from Borowica to Sosonowica. In addition, a kayak track of 2 kilometers long was marked on the waters of Zalew Zemborzycki [Ćwik 2007].

RESULTS

Prior to analyzing, multivariate normality was verified by examining each variable for the normal distribution. The data did not show a normal distribution, because the W. Shapiro-Wilk test was 0.88713 and the $p = 0.000$, which was lower than $\alpha = 0.05$, thus the hypothesis of normal distribution was rejected. Since the data were not subject to normal distribution, they were used to compare two groups using the U Mann-Whitney test.

At first, two opposite hypotheses were put:

- H₀: the share of inhabitants of Lublin region in kayak tourism is not dependent on gender;
- H₁: the share of inhabitants of Lublin region in kayak tourism is dependent on gender.

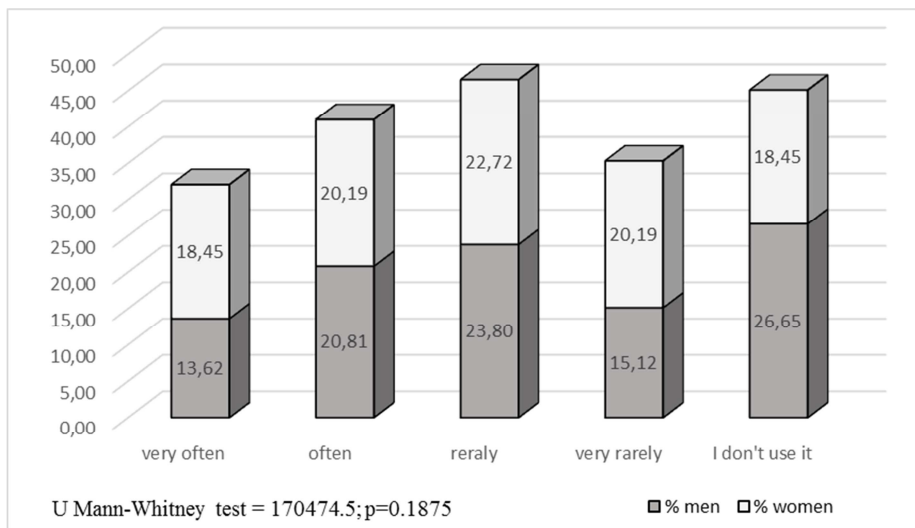


Figure 1. Frequency of kayak tourism depending on gender
 Source: Own study based on the research

Analysis of data presented in Figure 1 reveals that 26.65% of women and 18.45% of men in Lublin province are unaware of recreational activities. In contrast, kayak tourism is often used by 13.62% of women and 18.45% of men. However, according to the U Mann-Whitney test, p is 0.1875, which is greater than the assumed significance level of $\alpha = 0.05$, thus there is no reason to reject the null hypothesis, i.e. the differences in kayak activity between men and women are statistically irrelevant (hypothesis H₀ accepted).

For more groups, the Kruskal-Wallis rank test and median test were used. Following hypotheses have been made:

- H₀: kayak activity of Lublin province inhabitants does not depend on age,
- H₁: kayak activity of Lublin province inhabitants depends on age.

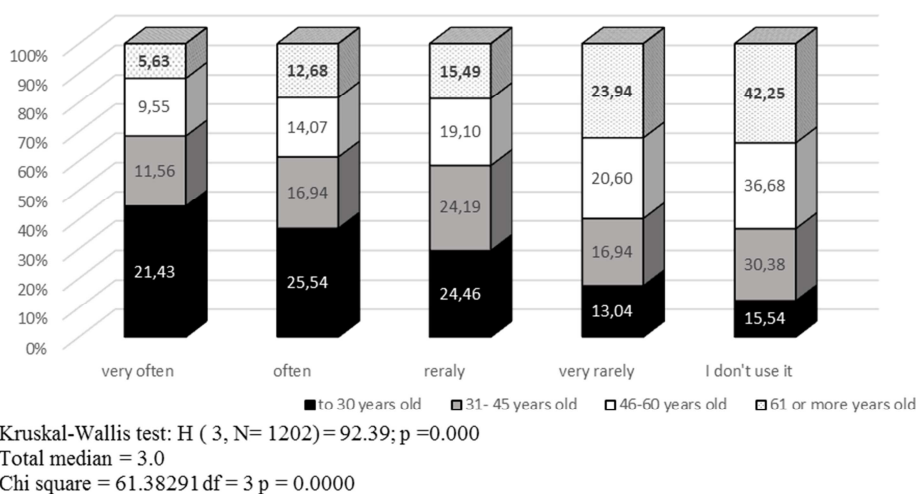


Figure 2. Frequency of kayak tourism depending on age
 Source: Own study based on the research

For the Kruskal-Wallis test and median test, the statistical significance level is $p = 0.00$, which is lower than the accepted level of $\alpha = 0.05$, thus hypothesis H_0 was rejected hypothesis H_1 accepted, which indicates that the recreational activity of the inhabitants of Lublin province on kayaks depends on age (Figure 2). The canoe tourism activities are most often enjoyed by people under the age of 30. Studies show that the frequency of kayaking recreation decreases with age. The older people, 61 years and older, are less likely to use this form of activity. It is worth noting that up to 42.25% of people in this age group were not even once kayaking.

Table 2. 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: 697.59	31-45 years R: 547.57	46-60 years R: 491.49	61 years and older R: 434.54
Up to 30 years	-	0,000000	0,000000	0,000000
31-45 years	0,000000	-	0,395002	0,071563
46-60 years	0,000000	0,395002	-	1,000000
61 years and older	0,000000	0,071563	1,000000	-

Source: Own study based on the research

Based on the 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 2). Young people up to 30 years old more often used kayak tourism than other residents of Lublin province.

Subsequently, the kayak activity of Lublin province inhabitants was investigated according to the education level. The results are shown in Figure 3.

- H_0 : kayak activity of Lublin province inhabitants is not dependent on education level,
- H_1 : kayak activity of Lublin province inhabitants is dependent on education level.

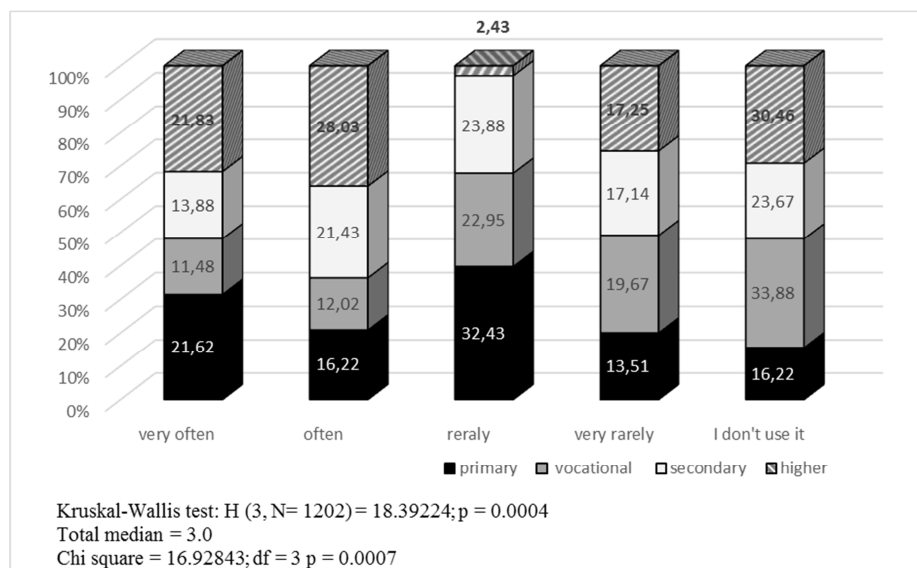


Figure 3. Frequency of kayak tourism depending on education level

Source: Own study based on the research

Statistical calculations show that the level of p for the Kruskal-Wallis test was 0.0004, and for the median test 0.007, therefore the kayak activity of Lublin province inhabitants is

dependent on education level as the p value is less than the assumed significance level of 0.05 (Figure 3).

The kayak tourism is most often practiced by people with higher (21.83%) and primary education level (21.62%). In the latter case, they are mostly secondary school students.

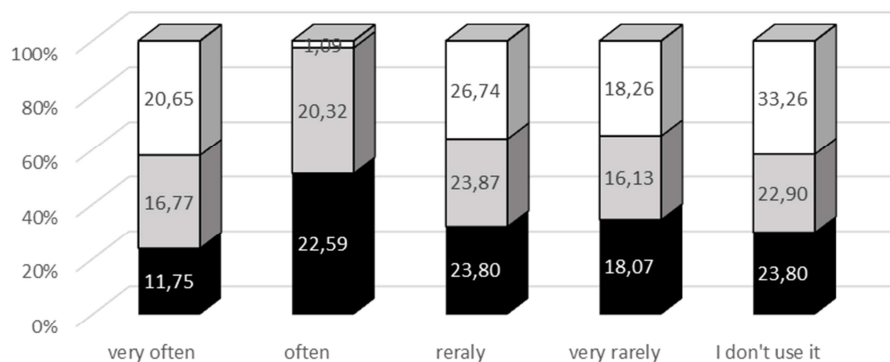
Table 3. Multiple comparison of average ranks for all samples based on education level

Respondent's education	The p value for multiple comparisons; Independent variable (grouping): education Kruskal-Wallis test: $H(3, N = 1202) = 18.39224; p = 0.0004$			
	basic R: 669.91	vocational R: 511.05	secondary R: 602.14	higher R: 626.06
basic		0,005366	0,705118	1,000000
vocational	0,005366		0,014728	0,000922
secondary	0,705118	0,014728		1,000000
higher	1,000000	0,000922	1,000000	

Source: Own study based on the research

Considering the multiple comparison of mean ranks for all samples, it has been shown that significant differences occur between people with vocational education and those with other backgrounds. The frequency of kayaking tourism was then examined according to the place of residence. Two opposite hypotheses were put forward:

- H₀: kayak activity of Lublin province inhabitants does not depend on place of residence level,
- H₁: kayak activity of Lublin province inhabitants depends on place of residence level.



Kruskal-Wallis test: $H(2, N = 1202) = 1.1685; p = 0.5575$

total median = 3.0

Chi square = 0.5320896 df = 2; p = 0.7664

■ village □ town □ big city

Figure 4. Frequency of kayak tourism depending on the place of residence

Source: Own study based on the research

For the Kruskal-Wallis test, the statistical significance level is 0.5575 and is greater than 0.05, thus there is no reason to reject the null hypothesis. Likewise, the median test can be interpreted: the activity of Lublin province inhabitants on the canoe trails does not depend on the place of residence (Figure 4).

Subsequent opposite hypotheses were based on the material situation:

- H₀: kayak activity of Lublin province inhabitants is not dependent on material situation,
- H₁: kayak activity of Lublin province inhabitants is dependent on material situation.

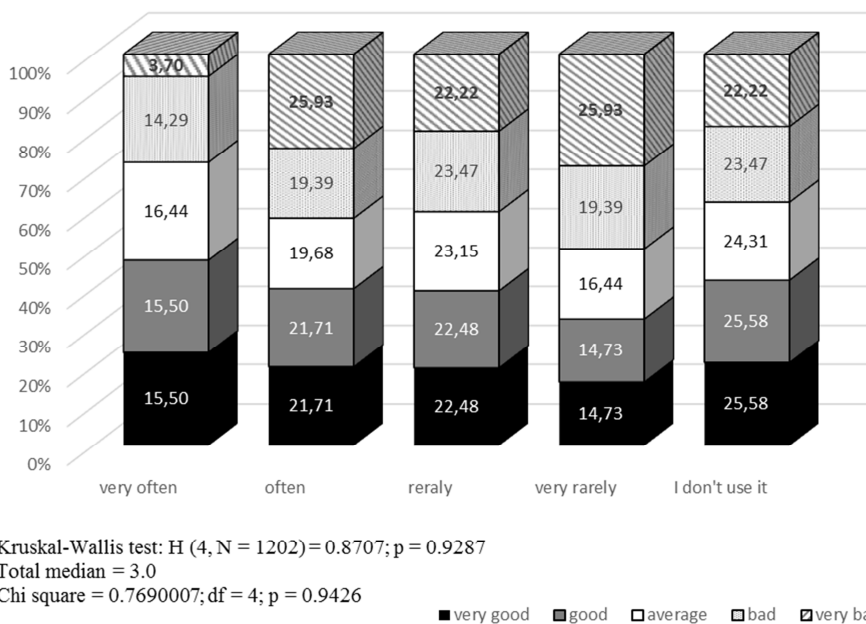


Figure 5. Frequency of kayak tourism depending on the material status
 Source: Own study based on the research

Based on the statistical analysis of data presented in Figure 5 it was found that for the Kruskal-Wallis test, the statistical significance level was 0.9287, which is greater than 0.05, thus there is no reason to reject the null hypothesis. Similarly, the median test was interpreted to show that activity on kayaking trails of Lublin province residents does not depend on material status. Differences between groups are statistically insignificant.

CONCLUSIONS

1. Frequency of kayak tourism by residents of Lublin region depends on age and education level. It is not dependent on gender, place of residence or material situation.
2. Most often, the kayak tourism is practiced by young people aged up to 30 years (84.46%). The demand for kayak tourism decreases with age. The elderly at age of 61 and older, are the least likely to participate in this form of activity (42.25% of people in this age group were not on kayak trips).
3. Considering the education of respondents, the highest demand for kayak services is reported by people with higher (21.83%) and primary education (21.62% - in this case there are mainly secondary school students who are still learning). Kayak tourism is the least practiced by people with vocational education (33.88%). It may be assumed that this social group is the most occupied, but detailed research is necessary to carry out in this respect.

In conclusion, it can be stated that young persons up to 30 years of age with higher education and students of secondary schools are the most frequently involved in kayak tourism.

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