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The Role of Lifestyle Activities (Mountain Trips and Hiking) in Extracurricular and Leisure Options - Part 1/Attractiveness Component Analysis

George Danuț MOCANU [1]
Daniela Monica RĂDUCANU [2]
Carmen PÂRVU [3*]
Dan Alexandru SZABO [4]

[1] Associate Professor, "Dunărea de Jos" University of Galați, Romania, george.mocanu@ugal.ro; ORCID 0000-0002-3534-5055
[2] Pre-university teacher, Iorgu Radu secondary school, Bârlad, Vaslui county, Romania, monicaraducanu@yahoo.com
[3] Associate Professor, "Dunărea de Jos" University of Galați, Romania, carmen.parvu@ugal.ro (*corresponding author) ORCID 0000-0002-2910-9494
[4] Associate Professor, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mureș, Romania, dan-alexandru.szabo@umfst.ro, ORCID 0000-0002-7326-212X
* Corresponding Authors: Carmen Pârvu, e-mail: carmen.parvu@ugal.ro
All authors have an equal contribution.

Abstract: *Background and Study Purpose. The majority of the population prefers nature activities, trips, and hiking in mountain areas due to the attractiveness of the trails and the beneficial effects. Material and Methods. The investigated group included 647 students from secondary school/336 cases and high school/311 cases. A questionnaire consisting of 23 closed-ended items (Likert scale in 5 levels) was applied between March and May 2024 to study the opinions about trips and hiking in mountain areas. Parametric ANOVA procedures (defining gender-independent variables, area variables, and training level) were applied to identify differences between the resulting groups. Results. Factor analysis with PCA identified a distribution of items on three distinct components: Attractiveness, Usefulness, and Effects/Financial Accessibility. The F values for the three independent variables and the interaction between them correspond to statistically significant thresholds ($P < 0.05$), so there are differences between the opinions of the surveyed students for the items of the applied questionnaire. Conclusions. The spirit of adventure and escape from everyday life show the highest mean score of all the component items, followed by the attraction to trips and hiking. Females are more interested in trips and hiking than males. High school students are more attracted to these activities than secondary school students. We noted the statistically significant superiority of rural vs. urban students for all items of the Attractiveness component. Recommendation. These differences require identifying different ways to motivate the groups analysed in the future to be more involved in this kind of activity.*

Keywords: *opinions; differences; excursions; mountain hikes; students; attractiveness.*

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Introduction

Mountains have been a point of attraction for people since ancient times (Richins & Hull, 2016). Mountain areas offer leisure, recreation, and social benefits. Visitors to the Tatra National Park are attracted by the natural environment and the opportunity to admire the scenery from a height/cable car (Taczanowska et al., 2019). Young people in industrialised countries may be diminishing or losing their connection to the natural environment. For this reason, programmes such as organising hikes and wildlife watching can alleviate this unwanted phenomenon (Bruni et al., 2017). Hiking tourism and nature-based tourism are significantly growing globally, with economic and social benefits (Maria Raya et al., 2018). For rural tourism in Yenice/Turkey, the suitability of tourism activities (grade 1) according to each landscape provided three sustainable options: mountaineering, trekking, and wildlife observation (Ayhan et al., 2020). Research in the Blues Mountains/Australia area indicates that bushwalking (hiking) is the most commonly practised recreational variant of physical activity (over 20% of visitors, canyoners in small groups), according to (Hardiman & Burgin, 2011). Among mountain sports, Norwegian females (10.2 years old) are attracted to climbing (Resaland et al., 2019). Recreation variants in forest areas in Italy indicate hiking as the primary preferred activity; second is picnicking, followed by mountain biking. These activities provide good group cohesion and facilitate social interactions (Alessandro et al., 2023).

Hiking is a popular and very accessible form of physical activity. Even though it is perceived as a low-level adventure activity, its usefulness for mental and physical health, relaxation, physical capabilities, and exploring the beauty of the landscape is undeniable. Physical limits and age influence the length and difficulty of the routes chosen for hiking. Short and steep hikes are more attractive for younger people, while older people are more oriented toward trails with minimal elevation and do not prefer asphalt but natural grassy surfaces (Molokáč et al., 2022). Mountain climbing has different motivations. Investigations on tourists reaching the peak of Babia Góra/Western Carpathians indicate that sunrise observation is a distinct tourist attraction for mountain climbs – 84% of respondents (Mocior et al., 2015). Research on hikers visiting mountains in Malaysia has identified four factors that ensure visitor engagement in mountain hiking and their return. The most important is the beauty/attractiveness of the landscapes, followed by the accessibility of the mountain trails, the efficiency and quality of the organisation of the hikes, and the perceived low risks (Taher et al., 2015). In

the case of volunteer tourism, the main criteria that matter in the choice of location have been identified. These are the attractiveness of areas, safety, previous staff experience, accessibility, and need (Keese, 2011). The orientation of young people in Romania toward ecotourism destinations is motivated by the beauty and attractiveness of the landscapes, the hospitality of the locals, and the opportunity for outdoor activities (Stanciu et al., 2022). The attractiveness of a place conditions the involvement of people in natural tourism; the forest area offers favourable conditions for this (Mihardja et al., 2023). Rural mountain tourism activities favourably influence the quality of life of the local population (Podovac et al., 2019).

Outdoor walks and hikes are the second most crucial leisure activity for older people, after sedentary activities involving listening to music and watching TV (Rada, 2018). The place attachment for mountain hiking (day, overnight, through and section hikers) is analysed by (Kyle et al., 2003). The strong connection between children and nature and their engagement in exciting outdoor activities are promoted by (Sampson, 2015). Nature play and children's education through frequent contact with the natural world are essential for sustainability education and the formation of future adults (Haas & Ashman, 2014). Technology can increase the level of physical participation in mountain hiking. Implementing 360-degree virtual mountain walking tours ensures increased attractiveness compared to actual physical activities. The intensity of these virtual stimuli/video clips allows for the emergence of enjoyment and good emotional engagement, aspects that determine the intention to also participate in mountain nature hikes (Wu & Lai, 2022). Sports tourism ensures that travellers' behaviour is geared toward an active lifestyle, with strong social, economic, and environmental influences (Morfoulaki et al., 2023). Outdoor adventure activities are viable tools for providing a better connection with nature and achieving environmental education for students, according to (Martin, 2004).

Nature activities with students are conditioned in their effectiveness and perception by the influence of the weather. For California students, engaging in inclement/extreme weather activities leads to lower scores related to connection and interaction with nature (Talebpour et al., 2020). Weather quality and air temperature are decisive factors in the destinations for German tourists in the Southern Alps. Those involved in sports activities tolerate low temperatures better, the sensitivity of the elderly is high to heat, and families with children are more attracted to high temperatures (Steiger et al., 2016). Intentions to visit nearby alpine destinations in Vienna residents are determined and explained by several factors: perceived urban heat stress

in summer, past behaviour, social and subjective norms, and participation in nature sports (Juschten et al., 2019).

Barriers to the attractiveness of and participation in hiking in US national parks are generated by images presented in the media and advertising. The unlikely hikers community includes obese hikers/walkers, lesbians, singles, and hikers of colour, who describe their own experiences of outdoor activities online (Stanley, 2020). Another study highlights the effect of different ages on the number of tourists involved in hiking and mountain biking in Colorado (Loomis et al., 2001). Surveys of Chinese mountain hiking participants found that participants' serious leisure is positively correlated with place attachment, the attractiveness of locations/areas, and environmentally responsible behaviour (Liu et al., 2024). Society-specific traits characterise Israeli participants in Israel National Trail hikes, and place identity is essential for the studied group (Kliot & Collins-Kreiner 2020). A similar study conducted on Israeli hikers found that the most important motivations for hiking are the desire to get to know the country by walking, a sense of national identity, and the need to connect to the land (Collins-Kreiner, 2020). Another study identifies the associations between sports and tourism activities in Russia, highlighting the role of sports infrastructure in attracting tourists/visitors (Gozalova et al., 2014). The Chinese Gen Y population has traits similar to those of their European counterparts when engaging in adventure tourism. Even if they are oriented towards international travel, engagement in adventure activities may be limited by the perception of a high risk or too strong physical demand (Gardiner & Kwek, 2017).

Attitudes and perceptions of visitors towards forests in recreational parks/suburban areas – Japan shows differences according to group characteristics. Older groups photograph and focus on place-type pictures, younger ones prefer object-type pictures, and families with children prefer event-type pictures (Oku & Fukamachi, 2006). Nature-oriented details are essential elements of a mountain trail, influencing tourists' perceptions and experiences while hiking (Dorwart et al., 2009). The feeling of being away and the fascination with mountain landscapes in Austria are positive predictors of mountain hikers' flow experience (Wöran & Arnberger, 2012). Transformative tourism variants (study tours, backpacker tourism, volunteer tourism) are experiences that enable increases in individuals' well-being (Huang et al., 2024). Investigations in three urban mountain parks (China) identify the influence of health, mood, and personality traits on recreation and park quality perception. Mental health, happy mood, and agreeableness are visitor traits that influence recreation satisfaction (Chen et al., 2021).

Explorations on Chinese children (8 – 11 years old) indicate their views on family tourism. Memorable experiences and attractions pertain to physical activities, appreciation of the natural environment and local cuisine, and wildlife encounters (Wu et al., 2019).

All these studies highlight the different reasons for the attractiveness of mountain activities for tourists, but few of them compare attitudes between genders, age levels of the school population, and their backgrounds. For this reason, the first part of our research investigates the differences between the listed independent variables and their interaction for the attractiveness of mountain trips and hikes planned as extracurricular or leisure options.

Materials and methods

Working hypotheses:

1. *The questionnaire complies with the validity and reliability indicators for measuring opinions related to the attractiveness component.*
2. *We expect to obtain significant differences in the measurement of attitudes between the pairs of independent variables (male/female, rural/urban, secondary/high school) and their interaction.*

Participants. The initial group – formed by random selection from secondary and high school students from Vaslui County, Romania – included 658 adolescents who agreed to participate in this research. After receiving the questionnaires for statistical analysis, 11 subjects were eliminated from the study due to lack of identification data (gender, background, or level of education) or not fully completing all the items, leaving 647 students for statistical processing. Sample data related to mean age values and the number of each subgroup defined by the independent variables are summarised in Table 1.

Table. 1 Mean age-related data and number of cases for defined independent variables

Gender	Area variables	Levels	Age (Mean)	Std. Deviation	N
Male	urban	secondary school	13.646	0.643	78
		high school	16.969	0.725	58
		Total	15.063	1.782	136
	rural	secondary school	13.307	0.813	80
		high school	16.850	0.511	37
		Total	14.406	1.800	117
	Total	secondary school	13.474	0.751	158
		high school	16.923	0.651	95
		Total	14.761	1.817	**253**
Female	urban	secondary school	13.414	0.694	98
		high school	16.644	0.656	126
		Total	15.231	1.740	224
	rural	secondary school	13.442	0.785	80
		high school	16.833	0.649	90
		Total	15.237	1.841	170
	Total	secondary school	13.427	0.734	178
		high school	16.723	0.658	216
		Total	15.234	1.782	**394**
Total	urban	secondary school	13.517	0.680	176
		high school	16.746	0.693	184
		Total	15.167	1.756	**360**
	rural	secondary school	13.375	0.799	160
		high school	16.838	0.611	127
		Total	14.900	1.867	**287**
	Total	secondary school	13.449	0.741	**336**
		high school	16.783	0.662	**311**
		Total	15.049	1.809	**647**

Legal representatives and students were informed of the objectives of this study and that personal data will be protected from anonymity and confidentiality according to the Helsinki Declaration (World Medical Association, 2013; Sandu, 2012). Data processing and publication of the results was done with the consent of the Ethics Committee of the Faculty of Physical Education and Sports (168/27.05.2024).

Research Design. The research falls within the typology of cross-sectional investigations. The questionnaire was developed in the Human Performance Research Center of the Faculty of Physical Education and Sports of "Dunarea de Jos" University of Galati between October 2023 and February 2024. Its application in schools in Vaslui County took place between March and May 2024. The instrument for investigating students' attitudes contains 23 items with closed answers, according to the Likert

scale, in 5 steps (5/very strong, 3 / moderate, 1/very weak). All questionnaires were distributed in printed format, and the schools' physical education professors explained each question and associated quantification/score to students to avoid confusion and errors in score selection.

Statistical Analysis. The obtained scores for each item were transferred and statistically processed with SPSS Software (Statistical Package for the Social Sciences/IBM Vers.24 Chicago, IL, USA). The application of the PCA identified three components/dimensions (Attractiveness/12 items, Usefulness/6 items, and Effects/Financial Affordability/5 items). Pearson correlations for questionnaire validity (between each item and total items) and Cronbach's Alpha values (as an indicator of reliability) were calculated. Charts were made with Microsoft Excel chart editor (for mean scores of each item and comparison between mean data resulting from the interaction of independent variables). Analyses of variance (MULTIVARIATE AND UNIVARIATE TESTS) were applied to identify the influence of each independent variable and their interaction with the responses to the items/dependent variables. The confidence interval was set at 95%. (Armstrong, 2014; Hair 2009; Murariu & Munteanu, 2018; Opariuc, 2011; Osborne, 2019; Sarma & Vardhan, 2018).

Results

Table 2 shows each questionnaire item's Pearson correlation values (r) with the total/sum of items, providing information about convergent construct validity. Very strong ($r > 0.8$) and strong ($0.6 < r < 0.8$) associations are highlighted. The only item where we report moderate associations is Q18/financial accessibility ($0.4 < r < 0.6$). All correlation values are associated with statistically significant thresholds ($P < 0.01$).

Table 2. Data for validity of questionnaire items (Pearson correlation coefficients/ r valuables between each item and total item values) (N=647)

Item	Questionnaire items	r	Sig.
Q1	How much do you enjoy extracurricular activities that include trips and hiking?	0.842**	0.000
Q2	Do you develop your spirit of adventure and escape from the everyday through trips and hiking?	0.833**	0.000
Q3	How is your involvement in extracurricular activities where trips, hiking, and mountain walking are planned?	0.829**	0.000
Q4	How much are you attracted to extracurricular activities related to trips and hiking?	0.854**	0.000
Q5	In extracurricular activities, would you prefer to go on trips and go hiking?	0.821**	0.000
Q6	How interesting are the extracurricular activities based on trips and hiking?	0.837**	0.000
Q7	Do you go on/participate in trips and hiking?	0.799**	0.000
Q8	Do you watch films/documentaries about Romania's tourist attractions and mountain trails?	0.696**	0.000
Q9	Are extracurricular activities attractive where there are no planned trips and hiking?	0.817**	0.000
Q10	The enjoyment you feel when participating in school trips and hiking is:	0.882**	0.000
Q11	How do you look forward to extracurricular activities where you have planned trips and hiking?	0.872**	0.000
Q12	Compared to other extracurricular activities (visiting a museum, going to the theatre, club, or cinema), trips and hiking for you are:	0.835**	0.000
Q13	How useful are trips and hiking in shaping your personality and character?	0.614**	0.000
Q14	The role of trips and hiking in building social, communication, and group interaction skills:	0.609**	0.000
Q15	Could learning and following the rules during trips and hiking for students contribute to the formation of an attitude towards moral conduct?	0.650**	0.000
Q16	Influence of trips and hiking on physical development/body harmony:	0.640**	0.000
Q17	Influence of trips and hiking on intellectual skills and ability to quickly solve problems:	0.652**	0.000
Q18	Financial accessibility of trips and hiking for children and young people:	0.421**	0.000
Q19	The usefulness of trips and hiking in improving and optimising health:	0.649**	0.000
Q20	The effect of trips and hiking in reducing stress and recreation after intellectual stress:	0.678**	0.000
Q21	The effect of trips and hiking on fitness levels and exercise capacity:	0.626**	0.000
Q22	The effect of trips and hiking on muscle group strength:	0.696**	0.000
Q23	The effect of trips and hiking on stamina/endurance:	0.694**	0.000

The Kaiser-Meyer-Olkin test/KMO and Bartlett's Test of Sphericity values are summarised in Table 3. The KMO value=0.969 is higher than the 0.5 limit. The χ^2 value corresponds to a strongly significant threshold

(Sig.=0.000), so the null hypothesis that the questionnaire items are not correlated is rejected, as there are strong associations between the analysed dependent variables. These results indicate the possibility of applying the PCA method to identify common factors.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.969
Bartlett's Test of Sphericity	Approx. Chi-Square (χ^2)	13704.786
	df	253
	Sig.	0.000

PCA/Principal Component Analysis was performed to identify the main factors/components of the questionnaire with orthogonal Varimax rotation. This technique determined the existence of 3 main factors (set to eigenvalue ≥1). The total variance of the questionnaire for the cumulation of the three components/factors is 71.42% (component 1 explains 39.84% of the variance, component 2 explains 16.66% of the variance, and component 3, 14.91% of the variance), as shown in Table 4.

Table 4. Total Variance Explained at the questionnaire level

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.567	54.641	54.641	12.567	54.641	54.641	9.164	39.844	39.844
2	2.850	12.393	67.034	2.850	12.393	67.034	3.833	16.666	56.511
3	1.009	4.386	71.420	1.009	4.386	71.420	3.429	14.910	71.420

Extraction Method: Principal Component Analysis.

The dominant item load by components/factors – after applying Varimax with Kaiser Normalization – is shown in Table 5. Each item is included in the component that has the longest loading (>0.6). The items are ordered by component in descending order of weight. Component 1 includes the first 12 items of the questionnaire, which measure opinions on the *Attractiveness* of trips and hiking, with all items having a very strong load. Component 2 includes six items: Q13 – Q17 and Q19, which are related to opinions on the *Usefulness* of trips and hiking. The only item with a balanced load in components 2 and 3 is Q19, but the load is slightly stronger in component 2, where it was distributed. Component 3 includes five items (Q18 and Q20 – Q23), bringing together items that measure opinions related to the *Effects and Accessibility* of trips and hiking.

Table 5. Distribution and loading of items on the components, resulting from the application of Principal Component Analysis/Varimax with Kaiser Normalization

Items / Rotated Component Matrix[a]	Component		
	1	2	3
Q4 How much are you attracted to extracurricular activities related to trips and hiking?	0.887	0.198	0.158
Q1 How much do you enjoy extracurricular activities that include trips and hiking?	0.872	0.227	0.130
Q12 Compared to other extracurricular activities (visiting a museum, going to the theatre, club, or cinema), trips and hiking for you are:	0.867	0.184	0.165
Q10 The enjoyment you feel when participating in school trips and hiking is:	0.865	0.252	0.216
Q11 How do you look forward to extracurricular activities where you have planned trips and hiking?	0.864	0.220	0.223
Q3 How is your involvement in extracurricular activities where trips, hiking, and mountain walking are planned?	0.860	0.181	0.170
Q9 Are extracurricular activities attractive where there are no planned trips and hiking?	0.856	0.161	0.175
Q6 How interesting are the extracurricular activities based on trips and hiking?	0.855	0.232	0.148
Q5 In extracurricular activities would you prefer to have trips and hiking?	0.851	0.220	0.129
Q7 Do you go on/participate in trips and hiking?	0.826	0.147	0.200
Q2 Do you develop your spirit of adventure and escape from the everyday through trips and hiking?	0.794	0.265	0.216
Q8 Do you watch films/documentaries about tourist attractions and mountain trails in Romania?	0.607	0.232	0.260
Q15 Could learning and following the rules during trips and hiking for students contribute to the formation of an attitude towards moral conduct?	0.269	0.780	0.198
Q14 The role of trips and hiking in building social, communication, and group interaction skills:	0.189	0.761	0.232
Q13 How useful are trips and hiking in shaping your personality and character?	0.207	0.738	0.270
Q16 Influence of trips and hiking on physical development/body harmony:	0.211	0.689	0.383
Q17 Influence of trips and hiking on intellectual skills and ability to quickly solve problems:	0.305	0.662	0.262
Q19 The usefulness of trips and hiking in improving and optimising health:	0.246	0.530	0.510
Q21 The effect of trips and hiking on fitness levels and exercise capacity:	0.250	0.250	0.760
Q23 The effect of trips and hiking on stamina/endurance:	0.326	0.285	0.746
Q22 The effect of trips and hiking on muscle group strength:	0.354	0.286	0.702
Q20 The effect of trips and hiking in reducing stress and recreation after intellectual stress:	0.338	0.331	0.633
Q18 Financial accessibility of trips and hiking for children and young people:	-0.046	0.173	0.585

Extraction Method: Principal Component Analysis. / Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Indicators for the reliability coefficient (Cronbach's Alpha) and Hotelling's T-Squared Test values (for all items and separately for the three

factors) are presented in Table 6. Cronbach's Alpha values are high for the attractiveness factor for the complete questionnaire (>0.95), and for the usefulness and effects/accessibility factors (>0.85), indicating that the factor items have a higher level of reliability in measuring the opinions of the surveyed students. The results of Hotelling's T-Squared Test are statistically significant (P<0.05), indicating variety in the items' responses.

Table 6. Cronbach's Alpha and Hotelling's T-Squared Test values for the whole questionnaire are differentiated by factors

Factors	Reliability Statistics		Hotelling's T-Squared Test					
	Cronbach's Alpha	Cronbach's Alpha Standardized Items	N of items	Hotelling's T-Squared	F	df1	df2	Sig.
F1/ Attractiveness	0.973	0.973	12	2185.421	195.594	11	636	0.000
F2/ Utility	0.886	0.886	6	970.884	192.973	5	642	0.000
F3/ Effects/Accessibility	0.836	0.839	5	1465.331	364.629	4	643	0.000
Total items	0.961	0.960	23	5134.460	225.786	22	625	0.000

The mean scores of the items associated with Component 1/Attractiveness (at the whole group level) are represented in Fig. 1. The best values are obtained by items Q2/developing a spirit of adventure, Q4/attraction to trips and hiking, Q5/preference for trips and hiking, Q1/enjoyment of trips and hiking, Q10/enjoyment in participating in trips and hiking, Q6/ interest in extracurricular activities, Q11/ expectation of trips and hiking. The lowest means scores are obtained for items Q8/watching documentary films related to trips and hiking and Q7/participation-actual involvement in trips and hiking. According to these values, even if there is a high interest and attraction for these activities, the actual involvement/participation level is still far from the stated attraction according to the other items.

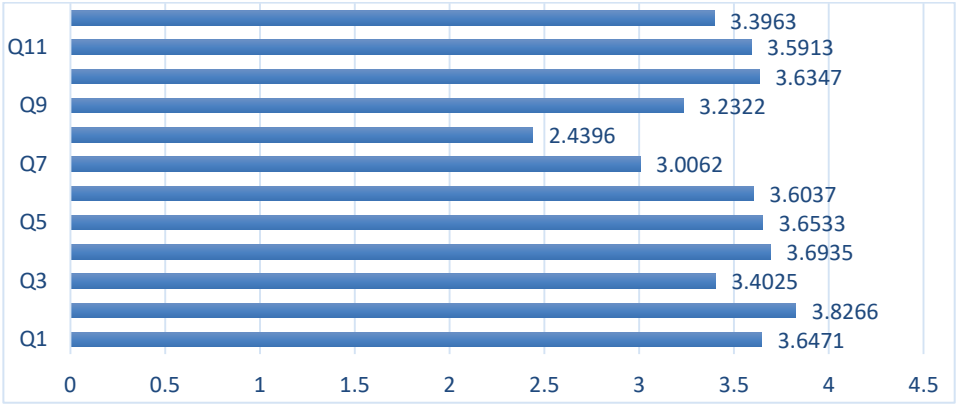


Fig. 1 Average scores of the ***Attractiveness*** component items (N=647)

The responses of the whole group at the questionnaire item level (preference for Likert scale scores) are shown as percentages in Table 7. It can be seen for items Q1 – Q6 that the preference for high scores/levels 4 and 5 is dominant for more than half of the surveyed students, the medium score/level 3 is preferred by 20-30% of the students, and the lower scores/levels 1 and 2 are allocated the lowest percentages. This indicates a higher attractiveness of trips and hiking for most students. However, Q7 indicates moderate actual participation of the group in these forms of activity (only about 30% constantly or frequently participate, 38% are sometimes involved, and about 31% are rarely or never involved). The lowest scores for level 4 and 5 responses are recorded for item Q8 (only 14% have a high level of interest in watching documentary films related to trips and hiking in the mountains), while low scores 1 and 2 are dominant (over 50% of students rarely or never watch these programmes). For item Q12, over 50% of students find trips and hiking more attractive than other leisure activities, and only about 23% find it uninteresting or less attractive.

Table 7. Items and percentages for the five levels of the Likert scale on the Attractiveness dimension

Item	5	4	3	2	1
Q1	*How much do you enjoy extracurricular activities that include trips and hiking?*				
	Very much (19.5%)	Much (39.6%)	Moderate (29.7%)	Very little (8.4%)	Not at all (2.8%)
Q2	*Do you develop your spirit of adventure and escape from the everyday through trips and hiking?*				
	Very much (26.3%)	Much (41.5%)	Moderate (21.7%)	Very little (9.6%)	Not at all (0.9%)
Q3	*How is your involvement in extracurricular activities where trips, hiking, and mountain walking are planned?*				
	Very strong (13.6%)	Strong (36.8%)	Moderate (31.3%)	Lower (12.7%)	Very weak (5.6%)
Q4	*How much are you attracted to extracurricular activities related to trips and hiking?*				
	Very much (27.6%)	Much (32.5%)	Moderate (25.4%)	Little (10.8%)	Very little (3.7%)
Q5	*In extracurricular activities would you prefer to have trips and hiking?*				
	Always (22.3%)	Frequently (35.3%)	Sometimes (30.3%)	Rarely (9.6%)	Never (2.5%)
Q6	*How interesting are the extracurricular activities based on trips and hiking?*				
	Very interesting (20.4%)	Interesting (35.3%)	Quite interesting (31.6%)	Slightly interesting (9.6%)	Uninteresting (3.1%)
Q7	*Do you go on/participate in trips and hiking?*				
	Always (7.1%)	Frequently (23.8%)	Sometimes (37.8%)	Rarely (25.1%)	Never (6.2%)
Q8	*Do you watch films/documentaries about tourist attractions and mountain trails in Romania?*				
	Always (1.5%)	Frequently (12.7%)	Sometimes (32.2%)	Rarely (35.3%)	Never (18.3%)
Q9	*If in extracurricular activities trips and hiking are missing, then you consider them:*				
	Repulsive (3.4%)	Unattractive (37.8%)	Moderate attractive (40.2%)	Attractive (15.8%)	Very attractive (2.8%)
Q10	*The enjoyment you feel when participating in school trips and hiking is:*				
	Very big (18.6%)	Big (40.6%)	Moderate (27.9%)	Low (11.8%)	Very low (1.2%)
Q11	*How do you look forward to extracurricular activities where you have planned trips and hiking?*				
	With a lot of interest (20.7%)	With interest (39.9%)	With moderate interest (20.7%)	With less interest (14.9%)	Without interest (3.7%)
Q12	*Compared to other extracurricular activities (visiting a museum, going to the theatre, club, or cinema), trips and hiking for you are:*				
	Much more interesting (18%)	More interesting (33.7%)	Equally interesting (24.5%)	Less interesting (17.6%)	Totally uninteresting (6.2%)

The multivariate/MANOVA analysis applied to the items of the whole questionnaire (Table 8) shows a semi-statistically significant influence of each independent variable (gender, area variables, and training level) on the responses obtained to the questionnaire items ($P<0.05$). The η^2_p values indicate a very strong effect of the area variables on the answers obtained, with 43.4% of the variance of the items being explained by this independent variable. This is followed by the gender variable, which explains 14.2% of

the variance of item responses, and the training level variable, which determined 13.7% of the variance of responses/dependent variables. The interaction between variables is also statistically significant (P<0.05), but the η^2_p values indicate moderate effects on students' responses: 11.3% of the variance of responses is explained by Area variables*Training level, 10.2% by Gender*Area variables*Training level, 8.6% by Gender*Training level, and 8% by Gender*Area variables.

Tabel 8. Multivariate tests [a] results for the whole questionnaire

Effect	λ	F	Hypothesis df	Error df	Sig.	η^2_p	Observed Power
Gender	.858	4.425[b]	23.000	617.000	.000	.142	1.000
Area variables	.566	20.557[b]	23.000	617.000	.000	.434	1.000
Training level	.863	4.243[b]	23.000	617.000	.000	.137	1.000
Gender *Area variables	.920	2.314[b]	23.000	617.000	.001	.080	.998
Gender *Training level	.914	2.526[b]	23.000	617.000	.000	.086	.999
Area variables*Training level	.887	3.399[b]	23.000	617.000	.000	.113	1.000
Gender * Area variables*Training level	.898	3.051[b]	23.000	617.000	.000	.102	1.000

a. Design: Gender + Area variables + Training level + Gender *Area variables + Gender *Training level + Area variables*Training level + Gender * Area variables*Training level
b. Exact statistics

λ-Wilk's lambda; F-Fisher test; df-degrees of freedom; Sig.-level of probability; η^2_p-partial eta squared

The differences between *males and females* in terms of the *attractiveness* factor are summarised in Table 9. For all items of this component, we found higher mean values for females, who are obviously more attracted to and interested in trips and hiking. However, for only half of the items, the differences between genders are statistically significant (P<0.05): Q1/enjoyment generated by trips and hiking, Q2/development of the spirit of adventure, Q6/how interesting are activities based on trips and hiking, Q9/attractiveness if trips and hiking are missing, Q10/enjoyment of participating in trips and hiking, Q11/interest with which trips are expected.

Table 9. Results of ANOVA and pairwise differences in data for the independent variable gender (male=253, female=394) for the attractiveness component

Item	Group	Mean	Std. Deviation	Std. Error	a-b	F(1, 645)	Sig[b].	η^2_p	Observed Power
Q1	a. Male	3.5000	1.07674	.061	-.241*	9.487	.002	.015	.868
	b. Female	3.7411	.89612	.049					
Q2	a. Male	3.6667	1.08595	.060	-.262*	11.698	.001	.018	.927
	b. Female	3.9289	.85309	.048					
Q3	a. Male	3.3333	1.12911	.066	-.113	1.793	.181	.003	.267
	b. Female	3.4467	.99538	.053					
Q4	a. Male	3.5952	1.19879	.069	-.161	3.322	.069	.005	.444
	b. Female	3.7563	1.02464	.055					
Q5	a. Male	3.5952	1.03469	.063	-.095	1.372	.242	.002	.215
	b. Female	3.6904	.98877	.051					
Q6	a. Male	3.4762	1.08385	.064	-.209*	6.598	.010	.010	.727
	b. Female	3.6853	.95839	.051					
Q7	a. Male	2.9365	1.05427	.064	-.114	1.964	.162	.003	.288
	b. Female	3.0508	.98201	.051					
Q8	a. Male	2.3651	1.00678	.062	-.122	2.397	.122	.004	.340
	b. Female	2.4873	.96033	.049					
Q9	a. Male	3.1349	.89579	.054	-.159*	5.389	.021	.008	.640
	b. Female	3.2944	.82247	.043					
Q10	a. Male	3.5159	1.02350	.060	-.195*	6.431	.011	.010	.716
	b. Female	3.7107	.90379	.048					
Q11	a. Male	3.4286	1.18037	.068	-.267*	9.409	.002	.014	.865
	b. Female	3.6954	1.00817	.054					
Q12	a. Male	3.3492	1.22600	.073	-.077	.691	.406	.001	.132
	b. Female	3.4264	1.10097	.058					

*. The mean difference is significant at the .05 level.
The F tests the effect of gender. / This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
b. *Adjustment* for multiple comparisons: Bonferroni.

The differences between *urban vs. rural students* in terms of the *attractiveness* factor are summarised in Table 10. We note that for all 12 items of this factor, the mean values of rural students are higher and statistically significant than the mean of urban students ($P<0.05$), so this group is more attracted and concerned about engaging in trips and hiking.

Table 10. ANOVA and pairwise differences results for the independent variable *Area variables* (urban=360, rural=287) for the attractiveness component

Item	Group	Mean	Std. Deviation	Std. Error	a-b	F(1, 645)	Sig[b].	η^2_p	Observed Power
Q1	a. Urban	3.3778	.97977	.049	-.608*	68.226	.000	.096	1.000
	b. Rural	3.9860	.86236	.055					
Q2	a. Urban	3.5611	.93917	.048	-.600*	68.971	.000	.097	1.000
	b. Rural	4.1608	.87580	.054					
Q3	a. Urban	3.1278	1.05043	.053	-.620*	60.794	.000	.086	1.000
	b. Rural	3.7483	.94381	.059					
Q4	a. Urban	3.4333	1.09239	.056	-.588*	49.074	.000	.071	1.000
	b. Rural	4.0210	1.01545	.063					
Q5	a. Urban	3.3833	.99175	.051	-.610*	64.112	.000	.091	1.000
	b. Rural	3.9930	.92145	.057					
Q6	a. Urban	3.3111	.99743	.051	-.661*	75.615	.000	.105	1.000
	b. Rural	3.9720	.90955	.057					
Q7	a. Urban	2.7278	.98925	.051	-.629*	67.999	.000	.096	1.000
	b. Rural	3.3566	.92835	.057					
Q8	a. Urban	2.2944	.95990	.051	-.328*	18.335	.000	.028	.990
	b. Rural	2.6224	.97552	.057					
Q9	a. Urban	3.0111	.83775	.043	-.499*	59.330	.000	.084	1.000
	b. Rural	3.5105	.79355	.048					
Q10	a. Urban	3.3778	.95092	.048	-.580*	64.463	.000	.091	1.000
	b. Rural	3.9580	.86145	.054					
Q11	a. Urban	3.3111	1.10350	.055	-.633*	59.058	.000	.084	1.000
	b. Rural	3.9441	.95349	.061					
Q12	a. Urban	3.0889	1.17679	.058	-.694*	63.625	.000	.090	1.000
	b. Rural	3.7832	.99218	.065					

*. The mean difference is significant at the .05 level.
The F tests the effect of gender. / This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
b. *Adjustment* for multiple comparisons: Bonferroni.

The differences between *secondary vs. high school students* for the *attractiveness* factor are summarised in Table 11. Even though the high school students' group has higher mean scores for the 12 items of this factor, they are statistically significant only for four items: Q3/involvement in activities involving trips and hiking, Q9/ lack of attractiveness of activities from which trips and hiking are missing, Q10/enjoyment generated by participation in trips and hiking, Q12/interest in trips and hiking compared to other extracurricular activities.

Table 11. Results of ANOVA and pairwise differences in data for the independent variable *training level* (secondary school=336, high school=311) for the attractiveness component

Item	Group	Mean	Std. Deviation	Std. Error	a-b	F(1, 645)	Sig[b].	η^2_p	Observed Power
Q1	a. Secondary school	3.5833	.97379	.053	-.133	2.989	.084	.005	.408
	b. High school	3.7161	.97712	.055					
Q2	a. Secondary school	3.7798	.98603	.052	-.098	1.676	.196	.003	.253
	b. High school	3.8774	.92667	.054					
Q3	a. Secondary school	3.2857	1.08252	.057	-.243*	8.760	.003	.013	.840
	b. High school	3.5290	1.00039	.059					
Q4	a. Secondary school	3.6190	1.10256	.060	-.155	3.232	.073	.005	.435
	b. High school	3.7742	1.08862	.062					
Q5	a. Secondary school	3.5952	1.05513	.055	-.121	2.328	.128	.004	.331
	b. High school	3.7161	.95025	.057					
Q6	a. Secondary school	3.5298	1.06463	.055	-.154	3.744	.053	.006	.489
	b. High school	3.6839	.95025	.057					
Q7	a. Secondary school	2.9940	1.07895	.055	-.025	.101	.751	.000	.062
	b. High school	3.0194	.93456	.057					
Q8	a. Secondary school	2.3750	.98155	.053	-.135	3.056	.081	.005	.415
	b. High school	2.5097	.97455	.056					
Q9	a. Secondary school	3.1429	.88965	.046	-.186*	7.730	.006	.012	.793
	b. High school	3.3290	.80540	.048					
Q10	a. Secondary school	3.5417	1.02421	.052	-.194*	6.682	.010	.010	.733
	b. High school	3.7355	.86707	.054					
Q11	a. Secondary school	3.5298	1.18158	.059	-.128	2.257	.134	.003	.323
	b. High school	3.6581	.96836	.062					
Q12	a. Secondary school	3.3036	1.18074	.063	-.193*	4.568	.033	.007	.569
	b. High school	3.4968	1.11113	.065					

*. The mean difference is significant at the .05 level.
The F tests the effect of gender. / This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
b. *Adjustment* for multiple comparisons: Bonferroni.

ANOVA results for the interaction between *Gender and Area variables* at the level of the *Attractiveness* factor are presented in Table 12. This is the only interaction between independent variables for which we can show significant F values ($P<0.05$) for all items of a factor.

Table 12. ANOVA results for the interaction between Gender and Area variables in the *Attractiveness* component

Item	Interaction	Mean Square	F (1, 639)	Sig.	η^2_p	Noncent. Parameter	Observed Power
Q1	Gender *Area variables	4.972	6.015	.014	.009	6.015	.688
Q2	Gender *Area variables	10.979	14.373	.000	.022	14.373	.966
Q3	Gender *Area variables	10.409	10.963	.001	.017	10.963	.911
Q4	Gender *Area variables	10.290	9.525	.002	.015	9.525	.869
Q5	Gender *Area variables	3.597	4.041	.045	.006	4.041	.519
Q6	Gender *Area variables	6.519	7.493	.006	.012	7.493	.780
Q7	Gender *Area variables	4.588	5.078	.025	.008	5.078	.614
Q8	Gender *Area variables	10.829	11.925	.001	.018	11.925	.932
Q9	Gender *Area variables	6.933	10.854	.001	.017	10.854	.908
Q10	Gender *Area variables	6.164	7.815	.005	.012	7.815	.797
Q11	Gender *Area variables	10.385	10.085	.002	.016	10.085	.887
Q12	Gender *Area variables	11.557	9.817	.002	.015	9.817	.879

The mean scores for the interaction of Gender*Area variables for the *Attractiveness* component are represented in Fig. 2. We found superiority of values for the rural male and rural female groups for all items, with a slight superiority of the rural male, but with similar values for these two groups. The urban female group is placed third for all items, and the urban male group has the lowest mean values, so this group is the least attracted to participate in trips and hiking.

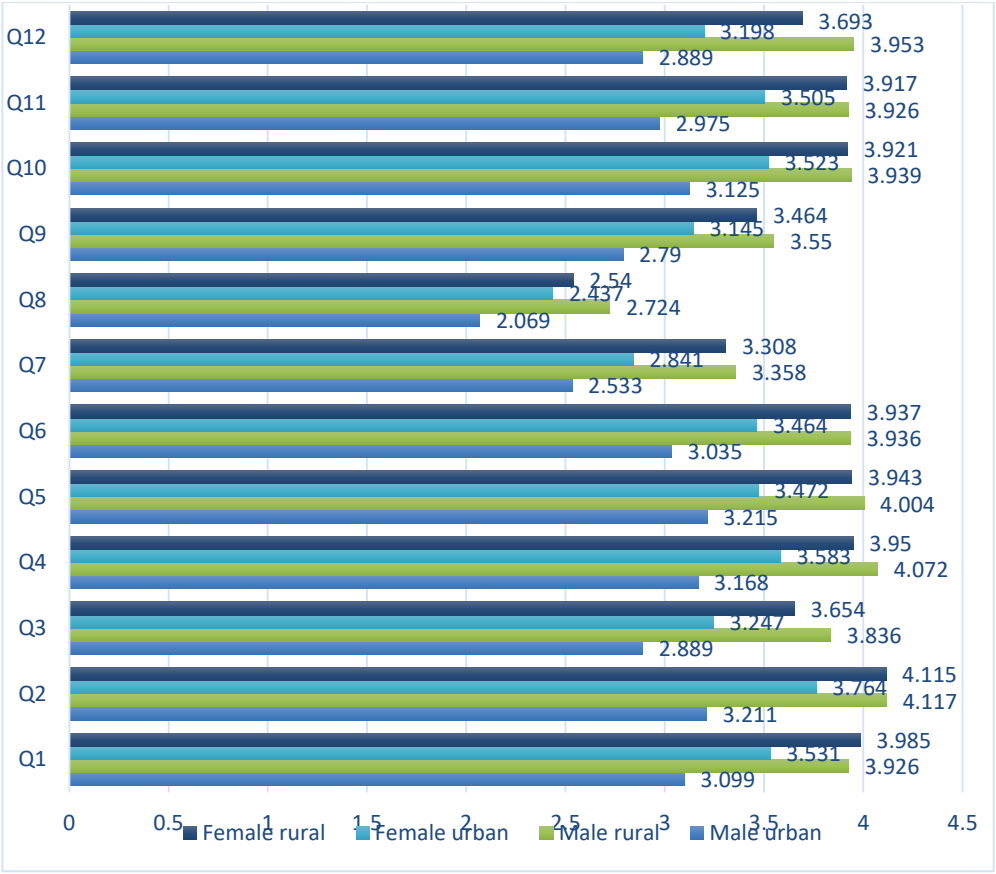


Fig. 2. Comparative mean values for the interaction *Gender*Area variables* for the *Attractiveness* factor

The ANOVA results for the interaction between *Gender and Training level* on the Attractiveness factor are presented in Table 13. Statistically significant differences ($P<0.05$) are reported only for five items: Q1/enjoyment generated by trips and hiking, Q2/development of the spirit of adventure and escape from everyday life, O3/involvement in trips and hiking, Q6/interest in trips and hiking, Q10/enjoyment of trips and hiking.

Table 13. ANOVA results for the interaction between Gender and Training level in the *Attractiveness* component

Item	Interaction	Mean Square	F (1, 639)	Sig.	η^2_p	Noncent. Parameter	Observed Power
Q1	Gender *Training level	3.623	4.383	.037	.007	4.383	.552
Q2	Gender *Training level	4.676	6.121	.014	.010	6.121	.695
Q3	Gender *Training level	4.523	4.764	.029	.007	4.764	.587
Q4	Gender *Training level	1.895	1.754	.186	.003	1.754	.262
Q5	Gender *Training level	1.451	1.630	.202	.003	1.630	.247
Q6	Gender *Training level	4.566	5.249	.022	.008	5.249	.628
Q7	Gender *Training level	.852	.943	.332	.001	.943	.163
Q8	Gender *Training level	.864	.952	.330	.001	.952	.164
Q9	Gender *Training level	.460	.720	.396	.001	.720	.135
Q10	Gender *Training level	3.932	4.984	.026	.008	4.984	.606
Q11	Gender *Training level	1.644	1.597	.207	.002	1.597	.243
Q12	Gender *Training level	.036	.031	.861	.000	.031	.053

The mean scores for the interaction of *Gender*Training level* variables for the *Attractiveness* component are represented in Fig. 3. For all 12 analysed items, the female high school group is at the top of the mean values. The male high school group ranks second for only four items (Q3/engaging in trips and hiking, Q8/watching documentary films, Q9/lack of attractiveness of activities when trips and hiking are missing, Q12/attractiveness of trips and hiking compared to other extracurricular activities). The female secondary school group ranked second for six items (Q1/enjoyment of trips and hiking, Q2/adventure spirit, Q6/interest in trips and hiking, Q7/actual participation in trips and hiking, Q10/enjoyment of trips and hiking, Q11/expectation of trips and hiking). The male secondary school group is in second position for only two items (Q4/attractiveness to trips and hiking, Q5/preference for trips and hiking).

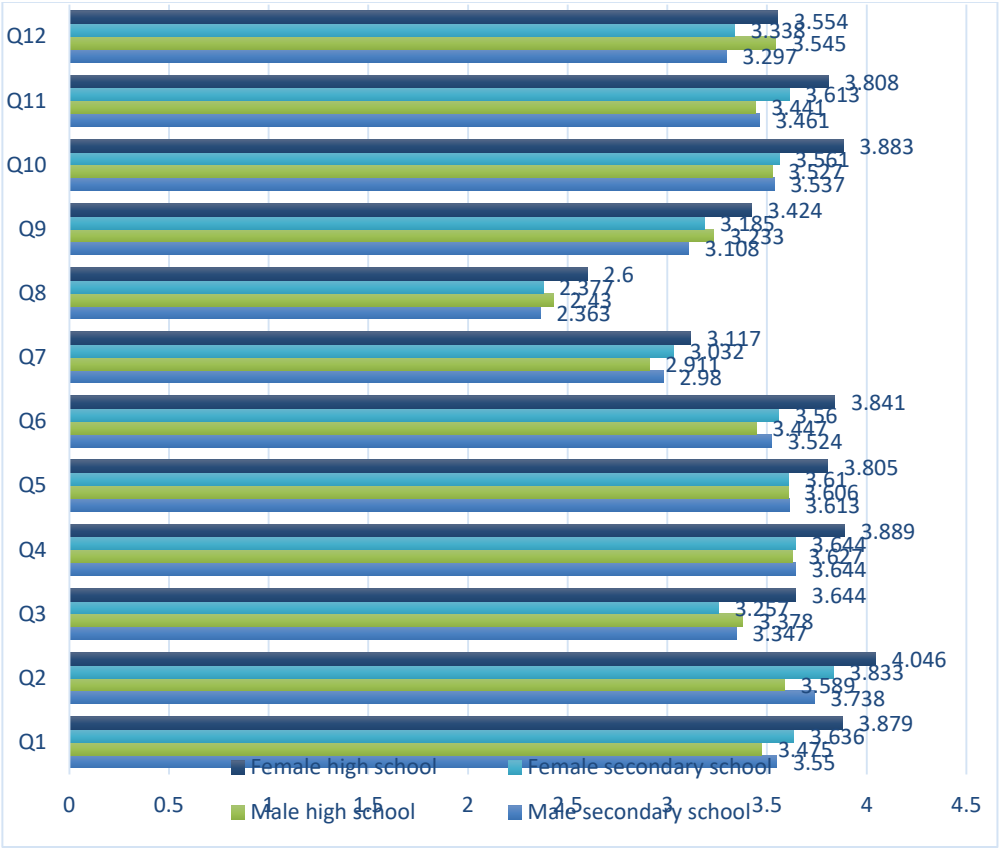


Fig. 3. Comparative mean values for the *Gender*Training level* interaction for the *Attractiveness* factor level

The ANOVA results for the interaction between *Area variables and Training level* on the *Attractiveness* factor are presented in Table 14. For most items, we found significant F values ($P<0.05$), only for three items the values were not significant ($P>0.05$): Q8/watching documentary films related to trips and hiking, Q9/attractiveness of extracurricular activities in the absence of trips and hiking, and Q12/attractiveness of trips and hiking compared to other extracurricular activities.

Table 14. ANOVA results for the interaction between Area variables and Training level for the *Attractiveness* component

Item	Interaction	Mean Square	F (1, 639)	Sig.	η^2_p	Noncent. Parameter	Observed Power
Q1	Area variables *Training level	4.271	5.168	.023	.008	5.168	.622
Q2	Area variables *Training level	10.769	14.097	.000	.022	14.097	.963
Q3	Area variables *Training level	8.518	8.972	.003	.014	8.972	.849
Q4	Area variables *Training level	6.150	5.692	.017	.009	5.692	.664
Q5	Area variables *Training level	12.572	14.124	.000	.022	14.124	.963
Q6	Area variables *Training level	9.198	10.573	.001	.016	10.573	.901
Q7	Area variables *Training level	8.317	9.205	.003	.014	9.205	.858
Q8	Area variables *Training level	.670	.737	.391	.001	.737	.138
Q9	Area variables *Training level	1.986	3.109	.078	.005	3.109	.421
Q10	Area variables *Training level	4.168	5.284	.022	.008	5.284	.631
Q11	Area variables *Training level	6.865	6.667	.010	.010	6.667	.732
Q12	Area variables *Training level	1.775	1.508	.220	.002	1.508	.232

The mean scores for the Area variables*Training level for the *Attractiveness* component are represented in Fig. 4. The rural secondary school group obtains the highest scores for most of the items, followed by the rural high school group (which has higher values only for items Q8/watching films/documentaries, Q9/attractiveness of activities in the absence of trips and hiking, and Q12/interest in trips and hiking compared to other extracurricular activities). The urban high school group obtains the third position for all items, and the urban secondary school group is placed in the last position, which is, therefore, the least attractive to these activities.

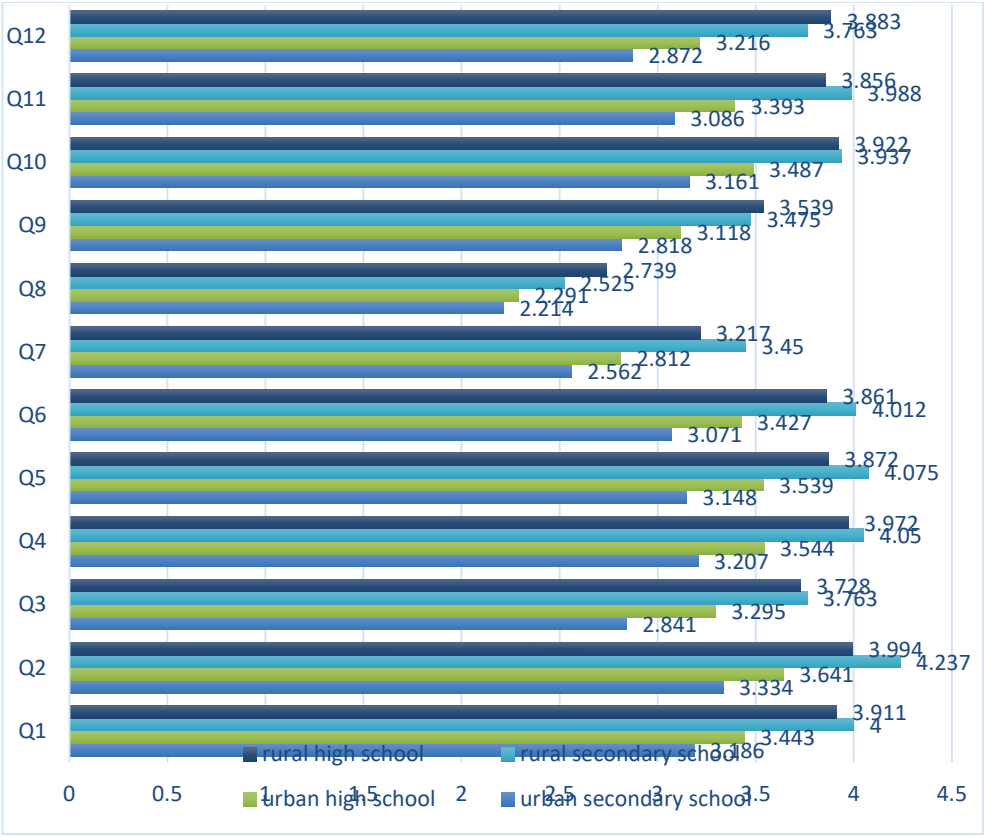


Fig. 4. Comparative mean values for the *Area variables *Training level* interaction at the level of the *Attractiveness* factor

Discussion

For tourists and tourism service providers in mountain areas/Germany-Eastern Ore Mountain, the main factors for visiting these areas are attractive landscapes and the possibility of engaging in leisure activities in nature (Bastian et al., 2015). Adventure mountain tourism (where mountaineer tourists enter) is motivational and supported by many factors: being part of the participants' lifestyle, experience and skills formed, and activities carried out safely (Pomfret, 2011). Active rest, socialising with friends, disconnecting outdoors, viewing landscapes and experiencing nature are the most attractive activity options for residents of Swedish mountain areas. The emotional component/attachment to personal places is more important than the cognitive side in choosing places for different outdoor

activities (Knez & Eliasson, 2017). Analysis of female-only tourism (Hong Kong) indicates a priority orientation and attraction towards activities involving relaxation, sightseeing, sports, and entertainment (Song, 2017). For our sample, we noted that 60% of students indicate higher scores related to the enjoyment of participating in trips and hiking, 57% prefer them as extracurricular activities, and 56% find them very interesting or exciting. However, only half of the students indicated a strong level of engagement in these activities.

Investigations on groups of outdoor physical activity practitioners in the Swedish mountains determined significant differences between male and female involvement and preferences favouring males (climbing or mountain biking). However, no significant differences are reported for mountain hiking or camping, with slightly more females involved in hiking (Godtman Kling et al., 2020). The gender comparison for mountain sports activities (Mountain Bikers and Trail Runners) found a higher percentage of females involved in Trail Runners. The primary motivation for both genders is a personal challenge (Getz & McConnell, 2014). Research on young Romanians involved in mountain sports activities indicates numerically higher participation of females but a better consistency of males engaging in these activities. Recreational, educational, and critical functions are influenced, according to (Dumitrescu & Aducovschi, 2019). Active tourism (involving participants in different physical activities of varying intensities, organised in natural environments) facilitates getting out/getting away from the daily routine, disconnecting, fighting sedentarism, and improving health. Hiking, rafting, and mountaineering are increasingly preferred leisure options, with females increasingly engaging in these activities, thus reducing the gap with males (Araújo Vila et al., 2020). Our results confirm the superiority of the scores and the higher level of attraction to trips and hiking for the female group (all items analysed). They show more interest, enjoy participation more and, report better enjoyment/satisfaction, perceive activities that lack trips and hiking as less attractive, and have better scores related to escape from everyday life. The female high school group has the highest values for the attractiveness component items. However, the female rural and male rural groups have similar mean scores but higher than the urban students, whereas the male urban values indicate a weaker attraction to trips and hiking.

Norway's Children's Trekking Club activities are engaging and provide nature experiences for emotional and physical development (Skar et al., 2016). Nature observation, educational experiences, and interactions with people are the main benefits novice mountain trekkers seek in Jeju Olle Trail/Korea. For

repeat visitors, in addition to socialising with others, a significant role related to attractiveness is the purchase of souvenirs (Oh et al., 2019). Polish students consider thematic trips and tourist trips to be of secondary importance, with tourist events (such as green schools or ecological schools) being more attractive. Promoting forms of activity that provide active recreation is the primary purpose of school tourism (Oleśniewicz et al., 2015). For Czech students, the main factors for good engagement in tourism activities are the attractiveness of activities, natural landscapes, and harmony of landscape (Navratil et al., 2013). A strong and very strong attraction to trips and hiking is indicated by 60% of the students in our group, and a similar percentage indicates a very strong and strong enjoyment of participating in these activities. Approximately 61% of students look forward to/very much look forward to participating in trips and hiking.

Investigations of secondary school students (12 – 15 years old) in Vojvodina/Serbia indicate low involvement in sports and recreational tourism through activities organised by the school (58% of students did not participate). Those involved in sports activities have a higher trip participation rate and better school results. However, the differences in involvement between younger and older students are minor. Females are more interested in nature trips during summer holidays (63%), compared to boys (55%), and in visiting different areas of Serbia (37% vs. 33%) (Ostoji et al., 2014). We also obtained lower scores for actual participation in tourist activities (only 31% of respondents always or frequently participate, and a similar percentage rarely or never, with 38% of students participating occasionally). Although females score slightly higher than males, the gender difference is not significant. The high school group had a higher participation rate, but it was still statistically insignificant. We only identified a better and more significant participation for rural students than urban students.

The effectiveness of psychomotor activities and active learning in field trips for pubertal students (10 – 14 years old) depends on good collaboration between the teacher and guide. The exploration of the environment and social interactions between students, the opportunity to spend time in nature, and the sense of freedom/escape are benefits provided by these activities (Tal et al., 2014). Other sporting activities in the natural environment (mountain biking) provide opportunities for young people in southeast England to escape and explore new healthy environments. This active leisure option allows for identity/personality affirmation (King & Church, 2015). Interviewing hikers for mountain trails in South Korea identifies several meaning themes: aesthetic and therapeutic value of landscapes, connection to nature and challenging experiences/spirit

of adventure, socialisation, and self-discipline (Park & Kyle, 2021). Knowledge of local cultural values, escape from daily routine, desire to participate in nature activities, and conditions for socialisation are the benefits identified for a group of hikers of Mount Olympus/Greece (Karagiorgos et al., 2023). A study on the motivation of internal and external visitors to nature parks in Japan identified four basic motivational dimensions: escape from everyday life, physical health, enjoying nature, and learning and discovering. Similar scores between internal and external visitors are only for improving physical health; significant differences were reported for the other three dimensions (Jones & Nguyen, 2021). Seeking new authentic experiences in mountain hiking and mountaineering is generated by the need to escape routine and avoid everyday stress (Vidon & Rickly, 2018). Forest hikes practised in groups by people with various mental ill-health (bipolar disorder, anxiety, depression) provide a sense of escape from the everyday, positive social interactions, improved mood, and efficient communication (Iwata et al., 2016). For our group, almost 68% of the students are attracted by the possibility of escaping the everyday and showing a spirit of adventure, while only 10% are sceptical and select lower scores. High school students score higher than secondary school students, but not significantly so. Instead, we found higher values for females vs. males and rural vs. urban, with statistically significant differences.

Study limitations and future research directions

The main drawback of the research is that the sample was selected from only one county, thus requiring investigations in several areas of the country, which differ for factors related to proximity to mountainous areas, level of economic development, accessibility, and quality of infrastructure. Even though the sampling allowed an excellent numerical balance between secondary and high school students, this could not be ensured for the male/female and rural/urban groups. The differences recorded between the analysed independent variables outline new directions of investigation, which should identify the different motivations of these groups for higher involvement in trips and hiking.

Conclusions

The applied questionnaire obtains superior coefficients regarding validity and reliability at the integral level and for each component resulting from applying the PCA.

The spirit of adventure and escape from everyday life shows the highest mean score among all the component items, followed by the attraction to trips and hiking. However, this data is not supported by actual involvement/participation in specific activities, with only 31% of students being involved consistently or often, but a similar percentage indicating little or no participation. The lowest average score is obtained for watching documentary films related to trips and hiking. However, more than half of the students indicate a higher interest in trips and hiking compared to other cultural leisure activities (theatre, cinema, visits to museums).

Females are more interested in trips and hiking than males, with higher mean scores for all component items, but significant differences are obtained only for the level of enjoyment, escape from everyday life, the attractiveness of these activities, the joy felt, and the interest with which hiking are expected. We noted the statistically significant superiority ($P<0.05$) of rural vs. urban students for all items of the Attractiveness component, the strong contact and familiarity with the nature of rural youth being a possible explanation for these differences. High school students are more attracted to these activities, with higher mean scores than secondary school students, but with significant differences only for involvement, reduced attractiveness in the absence of trips and hiking, perceived enjoyment and attraction to mountain activities compared to other extracurricular activities.

The interaction of *Gender*Area variables* generates significant differences for all items analysed ($P<0.05$). The rural male and female groups have the best average scores, while the urban male group has the worst values and is obviously the least attracted to these activities. For the *Area variables*Training level* interaction, we note the clear superiority of the values for the female high school group, followed by the female secondary school group. For the *Area variables*Training level* interaction, the rural secondary school and rural high school groups have the highest mean values, while the urban secondary school group has the lowest values.

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Conflict of interest

No potential conflict of interest that is of any relevance to this study was reported by the authors.

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