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# Weight of diagnostic characteristics in the assess ment of tourism potential of rural areas according to Siedlce inhabitants

**Abstract:** The presented work is an attempt to determine the importance of individual diagnostic characteristics conditioning rural tourism development by calculating their weights. The research was conducted in 2020 and involved the inhabitants of the city of Siedlce. The research method comprised a diagnostic survey. The authors' research tool of choice was a questionnaire. The research pertained to an assessment of characteristics reflecting the tourism potential of rural areas in Poland. Evaluation of attitudes was based on a 10-grade Likert scale. The resulting point scores were used to calculate weights of characteristics affecting tourism development in rural areas. The characteristics representing structural resources which had the greatest impact on rural tourism development included: presence of natural water bodies in the commune, number of historic sites, number of food and beverage serving establishments, convenient road access to the commune's administrative centre, and distance between the locality and the nearest town whose population exceeds 20 thousand inhabitants. Considering functional resources, indicators which may enhance an area's attractiveness to tourists include commune's ability to obtain EU funds and their expenses on tourism and entrepreneurship.

**Keywords:** rural tourism, cultural advantages, natural advantages, tourist-oriented infrastructure

## 1. Introduction

In 2018, rural areas in Poland covered 93% of the country's area (Rural areas in Poland in 2018, 2020). The strategy of their socio-economic development is a prominent issue continually addressed by politicians, authorities and officials at all levels of state and local government, as well as non-governmental organisations. It is considered in various contexts, including development of different forms of non-agricultural activity. One of them is rural tourism which, in the last 20 years, has become exceedingly popular with both providers and recipients of tourism services. It should be pointed out that rural tourism in communes (*gminas*) and districts (*powiats*) (respectively, the lowest and second lowest level of administrative division of Poland) is a crucial factor of multifunctional development of these areas (Marciniuk-Kluska, 2014).

Rural tourism is a multilayer and complex phenomenon. According to numerous authors (Sikora and Jęczmyk, 2005; Sawicki and Mazurek-Kusiak, 2010), many criteria are applied while considering factors that affect rural tourism development, the most frequent being the natural environment as well as economic, socio-demographic, institutional and legal, and technological environment (Zajadacz and Śniadek, 2009).

It has become necessary to determine the tourism potential associated with tourism development, particularly in terms of competition on the tourism market. The assessment encompasses not only the very facilities or centres, but also tourism spaces, e.g., rural tourism areas (Zajadacz and Śniadek, 2009). The assessment of the tourism potential of these areas should include characteristics of tourism development conditions presented as relative indicators whose importance is described by means of weights calculated for them. There is a paucity of literature on the subject of values of such indicators. Thus, the presented work is an attempt to determine the importance of individual diagnostic characteristics conditioning rural tourism development by calculating their weights. The work relies on characteristics considered by Gołębski (2002) and Tucki (2009), which they took into account while assessing tourism potential of regions.

Structural resources were divided into four groups: tourist advantages (natural and cultural), development of tourist-oriented infrastructure, transportation-related accessibility, and rural character (rurality) of the area. Functional resources were split into economic and political conditions, and socio-demographic conditions. Structural resources were divided into 50 characteristics, of which 48 are stimulants in character, and the remaining two (distance from the airport, number of inhabitants per 1 ha of agricultural land) are destimulants. In turn, functional resources included 13 characteristics, of which three (Age dependency ratio, unemployment rate, population density) are destimulants.

Additionally, the work presents research into an assessment of characteristics conditioning tourism in rural areas in Poland according to respondent gender.

In order to achieve the aim of the study, a research hypothesis was formulated that the following characteristics representing the structural resources are the most important determinants of rural tourism development: water bodies located within the commune's area, number of historic building/sites, number of food and beverage service establishments, convenient road access to the administrative centre and distance from this locality to the nearest town whose population exceeds 20 thousand inhabitants. The characteristics representing functional resources that may enhance an area's tourist appeal include commune's ability to acquire EU funds, and their expenses on tourism and entrepreneurial endeavours of the inhabitants.

## 2. Area descriptions, methods and material studied

Research was conducted in 2020 and involved inhabitants of Siedlce, the Mazowieckie Voivodeship. The research method comprised a diagnostic survey, and The authors used a questionnaire comprising seven elaborate questions (assessment of natural advantages, cultural advantages, development of tourist-oriented infrastructure, transportation-related accessibility as well as characteristics determining the commune's rural character, economic and political conditions as well as socio-demographic conditions affecting tourism development in the commune), which required an assessment of elements mentioned in the question. The enquiries were supplemented with a demographic question about the respondent's gender. Before filling in the survey, the respondents were apprised about the aim of the research. The research pertained to an assessment of characteristics reflecting the tourism potential of rural areas in Poland and involved the direct interview technique.

Evaluation of attitudes was based on a 10-grade Likert scale. The methodological procedure allowed for calculation of experimental sample size, the confidence level being 0.95, fraction size 0.5 and the maximum error 0.05. The sample was divided based on respondents' gender. The entire population of Siedlce residents was 78.258 (Statistics Poland, 2021), and the sample size was 382 people. The randomly selected respondents were at least 15 years old, and the sample consisted of 202 women (52.87%) and 180 men (47.13%).

The resulting point scores were used to calculate weights of characteristics affecting tourism development in rural areas. The importance of individual characteristics for the overall assessment of tourism potential varies,

which is why it is so important to provide them with a weight indicator.

Statistical calculations were preformed using the Statistica 13.0 PL program. Arithmetic means were computed. When assumptions for the variables were met, t-Student test for independent groups was used to determine significance of differences between the means at the significance level of $p < 0.05$.

# 3. Results and discussion

## 3.1. Assessment of diagnostic characteristics of the tourism potential of rural area

The tourism potential of a given area consists of structural and functional resources (Kaczmarek et al., 2005). Characteristics that constitute these resources and refer to rural areas were assessed by respondents.

Analysis of results (Table 1) revealed a diversity of the ways in which respondents viewed natural advantages influencing the tourism potential of rural areas as affected by respondents' gender. Analysis of results (Table 1) revealed disparities in the ways men and women view natural values that shape tourism potent ial of rural areas. Women pointed to forests and health-related advantages as the most fundamental natural qualities, whereas relative altitude proved to be the least important factor for this group of respondents. Men, on the other hand, put greater emphasis on the presence of water bodies and national parks. They attributed the least importance to grassland and relative altitude. Statistical analysis demonstrated that average scores for relative altitude, natural water bodies and geological sites differed insignificantly between men and women. The remaining characteristics received higher scores in the group of women compared with men, as confirmed by statistical analysis.

**Table 1**. Assessment of natural advantages (based on Authors' own study)

| Characteristic | Gender of respondents | | t-test value | p value |
| --- | --- | --- | --- | --- |
| | Women | Men | | |
| | score | score | | |
| Relative altitude | 4.84 | 5.43 | -1.767 | 0.078 |
| Natural water body (lake, lagoon) | 7.97 | 7.50 | 1.894 | 0.059 |
| River | 7.48 | 6.64 | 3.725 | 0.000* |
| Forest | 8.21 | 7.00 | 5.617 | 0.000* |
| Grassland (meadows and pastures) | 6.34 | 5.39 | 3.091 | 0.002* |
| National park | 7.79 | 7.14 | 2.537 | 0.012* |
| Landscape park | 7.74 | 6.93 | 3.315 | 0.001* |
| Natural monuments | 6.98 | 5.96 | 3.606 | 0.000* |
| Health-related advantages | 8.15 | 6.82 | 4.779 | 0.000* |
| Geological sites | 6.16 | 5.89 | 0.930 | 0.353 |

* level of statistical significance at $p < 0.050$

Analysis of scores for individual cultural advantages (Table 2) demonstrated gender-based differences. The most important cultural advantages indicated by women included historical buildings/sites and regional products. Their scores for religious pilgrimage destinations and regional products were higher than those provided by men. Cultural advantages which were least popular with women included artistic folk troupes, special-interest groups and houses of creative work. The highest scores given by men included historical buildings/sites and museums, the lowest scores being given to religious pilgrimage destinations, artistic folk

troupes, and special-interest groups. Significant differences between means for genders were found with respect to the following characteristics: religious pilgrimage destinations, cultural events, and regional products. Average scores given by women were significantly higher compared with men.

**Table 2.** Assessment of cultural advantages (based on Authors' own study)

| Characteristic | Gender of respondents | | t-test value | p value |
|---|---|---|---|---|
| | Women | Men | | |
| | score | score | | |
| Historical buildings/sites | 7.92 | 7.79 | 0.455 | 0.649 |
| Museums | 6.68 | 6.89 | -0.711 | 0.478 |
| Houses of creative work | 5.94 | 5.32 | 1.948 | 0.052 |
| Sites of national remembrance | 6.61 | 6.82 | -0.688 | 0.492 |
| Religious pilgrimage destinations | 5.97 | 4.96 | 3.072 | 0.002* |
| Cultural events | 6.81 | 6.18 | 2.284 | 0.023* |
| Regional products | 7.84 | 6.82 | 3.670 | 0.000* |
| Artistic folk troupes and special-interest groups | 5.76 | 5.21 | 1.842 | 0.066 |

* level of statistical significance at p <0.050

Assessment pertaining to development of tourist-oriented infrastructure characteristics (Table 3) varied and was affected by gender of respondents. Women pointed to food and beverage serving establishments, tourist trails and cycle routes as the most important characteristics of tourist-oriented infrastructure development, whereas men chose tourist trails and cycle routes. Both gender groups indicated golf courses and tennis courts as the least important characteristics of tourist-oriented infrastructure development. Statistical analysis demonstrated that average scores for the majority of characteristics differed significantly between women and men. Number of spa hotels, agritourism farms, and other accommodation facilities, number of bedspaces in other accommodation facilities, food and beverage serving establishments, tourist trails, and lifeguarded swimming sites received significantly higher average scores from women than men, who gave higher scores to multifunctional sports fields, ski lifts and winter sports equipment rental shops.

**Table 3.** Assessment of characteristics of tourist-oriented infrastructure development (based on Authors' own study)

| Characteristic | Gender of respondents | | t-test value | p value |
|---|---|---|---|---|
| | Women | Men | | |
| | score | score | | |
| Number of hotels | 6.15 | 5.54 | 1.947 | 0.052 |
| Number of spa hotels | 5.61 | 4.64 | 3.116 | 0.002* |
| Number of agritourism farms | 7.42 | 5.89 | 5.390 | 0.000* |
| Number of other accommodation facilities | 6.37 | 5.68 | 2.461 | 0.014* |
| Number of bedspaces in hotels | 6.02 | 5.64 | 1.221 | 0.223 |
| Number of bedspaces in spa hotels | 5.32 | 5.21 | 0.354 | 0.724 |
| Number of bedspaces in agritourism farms | 7.32 | 6.54 | 2.782 | 0.006* |
| Number of bedspaces in other accommodation facilities | 6.40 | 5.82 | 2.173 | 0.030* |
| Food and beverage serving establishments | 8.71 | 7.43 | 6.557 | 0.000* |

| | | | | |
|---|---|---|---|---|
| Tourist trails | 8.47 | 7.82 | 3.073 | 0.002* |
| Cycle routes | 8.15 | 7.50 | 2.583 | 0.010* |
| Lifeguarded swimming sites | 7.97 | 7.29 | 2.520 | 0.012* |
| Beaches | 7.81 | 7.25 | 1.922 | 0.055 |
| Swimming pool complexes | 6.82 | 6.32 | 1.584 | 0.114 |
| Golf courses | 3.26 | 3.54 | -1.007 | 0.315 |
| Tennis courts | 3.50 | 3.89 | -1.397 | 0.163 |
| Multifunctional sports fields | 5.11 | 5.82 | -2.066 | 0.040* |
| Bike rental shops | 6.61 | 7.11 | -1.715 | 0.087 |
| Water sports equipment (kayaks, boats, water bikes) rental shops | 6.66 | 7.36 | -2.372 | 0.018* |
| Ski lifts | 6.34 | 7.32 | -2.994 | 0.003* |
| Winter sports equipment rental shops | 6.06 | 7.32 | -3.872 | 0.000* |
| Equestrian centres and facilities | 5.82 | 5.43 | 1.313 | 0.190 |
| Tourist information offices | 6.53 | 6.50 | 0.102 | 0.919 |

* level of statistical significance at p <0.050

Data presented in Table 4 demonstrate slight variation in the way both genders perceive ways of access to the commune's administrative centre as a determining factor for tourism potential of rural areas. Women pointed to district and communal roads, whereas men additionally mentioned national roads as the most important ways of accessing the commune's administrative centre. For both groups of respondents, the distance from the airport was the least important characteristic in terms of access to the commune's administrative centre. Both male and female respondents gave similar scores, the only significant differences being related to scores for district and communal roads. The scores provided by women and men were 8.45 and 8.00, respectively, at p=0.0498, the first score being significantly higher than the second one.

**Table 4.** Assessment of access to the communal administrative centre (based on Authors' own study)

| Access | Gender of respondents | | t-test student | p value |
|---|---|---|---|---|
| | Women | Men | | |
| | score | score | | |
| National roads | 7.92 | 8.32 | -1.478 | 0.140 |
| District and commune roads | 8.45 | 8.00 | 1.969 | 0.0498* |
| Working train stations | 7.58 | 7.82 | -0.833 | 0.405 |
| Distance from the airport | 5.35 | 4.79 | 1.714 | 0.087 |

* level of statistical significance at p <0.050

Regardless of gender, respondents gave the highest score to distance between the commune's administrative centre and the nearest town with more than 20 thousand inhabitants as a characteristic determining the commune's rural character (Table 5). The average scores given by women and men were 7.34 and 6.04, respectively, at p=0.000, which is indicative of statistically significant differences between the scores. Statistical analysis demonstrated that number of farms and number of residents per 1 ha of agricultural land received significantly higher scores among women. Assessment of the remaining characteristics showed no significant differences between the two gender groups.

**Table 5.** Assessment of characteristics determining commune's rurality (based on Authors' own study)

| Characteristic | Gender of respondents | | t-test value | p value |
| --- | --- | --- | --- | --- |
| | Women | Men | | |
| | score | score | | |
| Number of farms | 6.08 | 5.36 | 2.224 | 0.027* |
| Share of farms with an area of less than 5 ha | 5.69 | 5.14 | 1.734 | 0.084 |
| Number of residents per 1 ha of agricultural land | 5.42 | 4.71 | 2.567 | 0.011* |
| Share of agricultural land in commune's area | 5.71 | 5.29 | 1.478 | 0.140 |
| Distance between the commune's administrative centre and the nearest town with more than 20 thousand inhabitants | 7.34 | 6.04 | 4.318 | 0.000* |

* level of statistical significance at p <0.050

Obtained results (Table 6) demonstrated that respondents pointed to commune's ability to acquire EU funds for tourism as the most important characteristics of economic and political condition. Commune's expenses on tourism, financial resources dedicated to promoting the commune, and the operation of agritourism associations and Local Activity Groups were highly rated by women, men's scores being quite similar, which is indicative of a similar interest of both gender groups in the examined characteristics. It is worth noting that the commune's membership in the Local Tourism Organisations, commune's Department of Tourism and tourism specialists at the commune office constitute economic and political determinants which obtained the poorest scores from the respondents. Statistical analysis revealed that, compared with men, women's scores were significantly higher for the following characteristics: commune's expenses on tourism, financial resources for commune's promotion and tourism specialists at the commune office.

**Table 6**. Assessment of characteristics affecting tourism development in a commune (economic and political determinants) (based on Authors own study)

| Characteristic | Gender of respondents | | t-test value | p value |
| --- | --- | --- | --- | --- |
| | Women | Men | | |
| | score | score | | |
| Total commune income | 7.68 | 7.18 | 1.851 | 0.065 |
| Commune's expenses on tourism | 8.15 | 7.43 | 2.863 | 0.004* |
| EU funding for tourism obtained by the commune | 8.27 | 8.14 | 0.556 | 0.579 |
| Financial resources destined for commune's promotion | 8.02 | 7.46 | 2.397 | 0.017* |
| Operation of agritourism associations and Local Activity Groups | 7.40 | 7.04 | 1.597 | 0.111 |
| Commune's membership in Local Tourism Organisations | 6.92 | 6.54 | 1.497 | 0.135 |
| Commune's Department of Tourism | 6.92 | 6.54 | 1.429 | 0.154 |
| Tourism specialists at the commune office | 6.82 | 6.25 | 2.003 | 0.046* |

* level of statistical significance at p <0.050

According to women, the importance of socio-demographic determinants was similar (Table 7). Statistical analysis showed that women' scores for age dependency ratio and population density were higher compared with those provided by men. Average scores for age dependency ratio given by women and men were 6.48 and 5.79, respectively, p=0.014, which indicates there were statistically significant differences between the scores for this characteristic. Average scores for population density were 6.45 and 5.11, for women and men respectively, which is indicative of significant differences between their perception of this aspect, p=0.000. It should be mentioned that, for male respondents, population density was the least important socio-demographic determinant, residents' entrepreneurship being the most important.

**Table 7.** Assessment of tourism development determinants in the commune (socio-demographic determinants) (based on Authors' own study)

| Characteristic | Gender of respondents | | t-test value | p value |
|---|---|---|---|---|
| | Women | Men | | |
| | score | score | | |
| Age dependency ratio (number of individuals not in the labour force per 1 working age person | 6.48 | 5.79 | 2.469 | 0.014* |
| Unemployment rate | 6.39 | 5.89 | 1.627 | 0.105 |
| Population density (number of people per 1 km$^2$) | 6.45 | 5.11 | 4.996 | 0.000* |
| Self-organisation of the society (number of foundations and associations registered in the REGON system per 1 thousand people) | 6.31 | 5.96 | 1.235 | 0.218 |
| Entrepreneurship of people (private economic entities registered in the REGON system per 1 thousand people) | 6.94 | 6.61 | 1.119 | 0.264 |

* level of significant difference at p <0.050

## 3.2. Weights of diagnostic characteristics of rural area tourism potential

Multidimensional Comparative Analysis (MCA) is one of methods for assessing tourism potential employed by researchers (Pukowiec and Kurda, 2013, Hakuć-Błażowska et al., 2018). MCA conducted to assess the tourism potential of spatial units, e.g., selected districts (*powiats*) or communes (*gminas*), consists in establishing significant categories and identifying diagnostic characteristics of a given research subject. The next step is to determine weights of these characteristics and decide on appropriate measurement units. Attaching weights is crucial, as individual characteristics are not equally important for the overall assessment of a given object.

### 3.2.1 Characteristics of structural resources of tourism potential

Weights of characteristics representing tourist advantages (Table 8) differed insubstantially. However, it should be noted that, among natural advantages, the highest weight, 0.065, was given to natural water bodies and forests. By contrast, calculated values of weights attributed to relative altitude, grasslands and geological sites were the lowest and equalled 0.041 and 0.050, respectively.

**Table 8**. Weight of tourism advantages (based on Authors' own study)

| Characteristic | Point score | | | | | | | | | | Weighted mean of scores (pts) | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| Natural advantages | | | | | | | | | | | | |
| Relative altitude | 72 | 38 | 21 | 13 | 81 | 30 | 30 | 51 | 8 | 38 | 1918 | 0.041 |
| Natural water bodies (lake, lagoon) | 4 | 9 | 4 | 4 | 42 | 38 | 43 | 68 | 43 | 127 | 2990 | 0.065 |
| Rivers | 8 | 8 | 12 | 51 | 55 | 64 | 65 | 42 | 68 | 9 | 2416 | 0.052 |
| Forests | 0 | 4 | 4 | 17 | 30 | 34 | 68 | 55 | 64 | 106 | 2994 | 0.065 |
| Grasslands (meadows and pastures) | 21 | 25 | 51 | 21 | 38 | 34 | 38 | 77 | 39 | 38 | 2315 | 0.050 |
| National park | 4 | 4 | 4 | 21 | 56 | 42 | 26 | 60 | 51 | 114 | 2901 | 0.063 |
| Landscape park | 4 | 13 | 4 | 4 | 55 | 30 | 55 | 77 | 51 | 89 | 2863 | 0.062 |
| Natural monuments | 13 | 17 | 13 | 43 | 42 | 38 | 51 | 55 | 51 | 59 | 2542 | 0.055 |
| Health-related advantages | 4 | 8 | 17 | 34 | 26 | 13 | 38 | 42 | 60 | 140 | 2957 | 0.064 |
| Geological sites | 21 | 27 | 26 | 25 | 54 | 38 | 51 | 85 | 21 | 34 | 2317 | 0.050 |
| Cultural advantages | | | | | | | | | | | | |
| Historical buildings/sites | 8 | 8 | 21 | 9 | 34 | 25 | 21 | 47 | 39 | 170 | 3017 | 0.065 |
| Museums | 25 | 13 | 21 | 13 | 34 | 47 | 55 | 55 | 55 | 64 | 2578 | 0.056 |
| Houses of creative work | 34 | 25 | 26 | 42 | 68 | 30 | 38 | 38 | 34 | 47 | 2196 | 0.047 |
| Sites of national remembrance | 13 | 30 | 13 | 26 | 47 | 30 | 59 | 59 | 25 | 80 | 2541 | 0.055 |
| Religious pilgrimage destinations | 55 | 21 | 21 | 30 | 51 | 34 | 47 | 55 | 26 | 42 | 2162 | 0.047 |
| Cultural events | 13 | 13 | 17 | 25 | 68 | 30 | 68 | 55 | 34 | 59 | 2522 | 0.055 |
| Regional products | 9 | 17 | 17 | 9 | 24 | 21 | 51 | 68 | 64 | 102 | 2873 | 0.062 |
| Artistic folk troupes and special-interest groups | 51 | 17 | 9 | 29 | 68 | 55 | 55 | 55 | 17 | 26 | 2136 | 0.046 |
| Sum – natural and cultural advantages' | | | | | | | | | | | 46238 | 1 |

The calculated weights of cultural advantages indicate that respondents were predominantly interested in historical buildings/sites (0.065), followed by regional products (0.062) and museums, national remembrance site and cultural events (0.055 on average). The computed values of weights attributed to artistic folk troupes and special-interest groups, religious pilgrimage destinations and houses of creative work were the lowest, 0.046 and 0.047, respectively, which indicates little interest in such cultural advantages.

Results presented in Table 9 revealed that, as far as characteristics related to development of tourist-oriented infrastructure is concerned, food and beverage serving establishments" were given the highest weight (0.057), followed closely by tourist trails (0.056), cycle routes (0.054), lifeguarded swimming sites (0.053) and beaches (0.052).

**Table 9**. Weight of characteristics pertaining to tourist-oriented infrastructure development (based on Authors' own study)

| Characteristic | Division II – Tourist-oriented infrastructure | | | | | | | | | | Weighted mean of scores (pts) | Weight |
| | Point score | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| Number of hotels | 25 | 34 | 17 | 25 | 81 | 34 | 51 | 34 | 13 | 68 | 2279 | 0.041 |
| Number of spa hotels | 47 | 30 | 38 | 30 | 60 | 38 | 42 | 51 | 8 | 38 | 2023 | 0.036 |
| Number of agritourism farms | 4 | 25 | 17 | 34 | 34 | 34 | 38 | 81 | 21 | 94 | 2658 | 0.047 |
| Number of other accommodation facilities | 21 | 17 | 17 | 34 | 81 | 17 | 59 | 77 | 17 | 42 | 2351 | 0.042 |
| Number of bedspaces in hotels | 42 | 8 | 34 | 21 | 55 | 38 | 55 | 60 | 38 | 31 | 2264 | 0.040 |
| Number of bedspaces in spa hotels | 60 | 17 | 21 | 42 | 60 | 38 | 46 | 51 | 34 | 13 | 2019 | 0.036 |
| Number of bedspaces in agritourism farms | 17 | 8 | 13 | 25 | 38 | 30 | 47 | 72 | 60 | 72 | 2707 | 0.048 |
| Number of bedspaces in other accommodation facilities | 17 | 17 | 25 | 17 | 68 | 38 | 72 | 68 | 30 | 30 | 2380 | 0.042 |
| Food and beverage serving establishments | 0 | 0 | 9 | 8 | 17 | 25 | 47 | 80 | 47 | 149 | 3176 | 0.057 |
| Tourist trails | 0 | 4 | 0 | 13 | 21 | 30 | 51 | 55 | 64 | 144 | 3158 | 0.056 |
| Cycle routes | 0 | 17 | 8 | 4 | 38 | 8 | 38 | 81 | 64 | 124 | 3042 | 0.054 |
| Lifeguarded swimming sites | 9 | 9 | 13 | 8 | 38 | 21 | 38 | 64 | 55 | 127 | 2957 | 0.053 |
| Beaches | 17 | 13 | 4 | 13 | 25 | 21 | 60 | 51 | 51 | 127 | 2915 | 0.052 |
| Swimming pool complexes | 21 | 17 | 13 | 30 | 81 | 8 | 34 | 51 | 38 | 89 | 2545 | 0.045 |
| Golf courses | 127 | 60 | 34 | 47 | 47 | 17 | 21 | 12 | 13 | 4 | 1274 | 0.023 |
| Tennis courts | 110 | 38 | 64 | 34 | 64 | 21 | 17 | 13 | 8 | 13 | 1385 | 0.025 |
| Multifunctional sports fields | 64 | 25 | 47 | 21 | 38 | 21 | 51 | 47 | 30 | 38 | 2038 | 0.036 |
| Bike rental shops | 25 | 4 | 13 | 21 | 47 | 34 | 85 | 60 | 13 | 80 | 2587 | 0.046 |
| Water sports equipment (kayaks, boats, water bikes) rental shops | 25 | 8 | 13 | 17 | 30 | 51 | 68 | 64 | 21 | 85 | 2631 | 0.047 |
| Ski lifts | 42 | 13 | 8 | 17 | 38 | 30 | 64 | 60 | 17 | 93 | 2541 | 0.045 |
| Winter sports equipment rental shops | 44 | 13 | 17 | 8 | 47 | 51 | 47 | 48 | 21 | 86 | 2456 | 0.044 |
| Equestrian centres and facilities | 34 | 25 | 21 | 25 | 93 | 25 | 47 | 48 | 30 | 34 | 2185 | 0.039 |
| Tourist information offices | 25 | 17 | 17 | 30 | 55 | 30 | 47 | 59 | 13 | 89 | 2493 | 0.044 |
| Sum | | | | | | | | | | | 56064 | 1 |

Number of bedspaces offered by agritourism farms, number of agritourism farms, water sports equipment (kayaks, boats, water bikes) rental shops, bicycle rental shops, swimming pool complexes and ski lifts were given slightly lower weights by the respondents. The average weight for these characteristics was 0.046, whereas in the case of winter sports equipment rental shops and tourist information offices the value was 0.044. The remaining characteristics pertaining to development of tourist-oriented infrastructure proved to be less important for respondents. Tennis courts and golf courses were given the lowest weight, 0.025 and 0.023,

respectively, which is indicative of lesser interest on the part of respondents in this form of leisure.

As far as ways of reaching the communal administrative centre are concerned (Table 10), the highest weight – 0.285 – was given to district and communal roads. Respondents perceived national roads and working strain stations as less important, their respective weights being 0.276 and 0.262. The lowest weight (0.177) was attributed to distance from an airport.

**Table 10.** Weight of access to the commune's administrative centre (based on Authors' own study)

| Characteristic | Division III – Communication accessibility | | | | | | | | | | Weighted mean of scores (pts) | Weight |
| | Point score | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| National roads | 8 | 4 | 13 | 4 | 47 | 13 | 30 | 59 | 30 | 174 | 3076 | 0.276 |
| District and commune roads | 4 | 4 | 0 | 4 | 34 | 25 | 38 | 60 | 43 | 170 | 3181 | 0.285 |
| Working train stations | 13 | 17 | 0 | 4 | 55 | 21 | 30 | 64 | 42 | 136 | 2924 | 0.262 |
| Distance from the airport | 64 | 25 | 47 | 4 | 72 | 38 | 38 | 34 | 17 | 43 | 1980 | 0.177 |
| Sum | | | | | | | | | | | 11161 | 1 |

The most important characteristic determining the commune's rural character (Table 11) was distance between the communal administrative centre and the nearest town with more than 20 thousand inhabitants, its weight being 0.238. Number of farms, share of agricultural land in commune's area and share of farms whose area exceed 5 ha were less frequently chosen by respondents, and their weights were, respectively, 0.201, 0.192 and 0.190. The least popular characteristic was the number of inhabitants per 1 ha of agricultural land, as its weight amounted to 0.179.

**Table 11.** Weight of characteristics related to commune's rurality (based on Authors' own study)

| Characteristic | Division IV – Commune's rurality | | | | | | | | | | Weighted mean of scores (pts) | Weight |
| | Point score | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| Number of farms | 38 | 34 | 26 | 8 | 76 | 17 | 51 | 55 | 26 | 51 | 2239 | 0.202 |
| Share of farms whose area is less than 5 ha | 38 | 43 | 25 | 13 | 76 | 47 | 26 | 55 | 17 | 42 | 2108 | 0.190 |
| Number of residents per 1 ha agricultural land | 30 | 34 | 34 | 30 | 106 | 43 | 25 | 38 | 25 | 17 | 1982 | 0.178 |
| Share of agricultural land in commune's area | 30 | 25 | 21 | 30 | 106 | 38 | 30 | 51 | 17 | 34 | 2132 | 0.192 |
| Distance between the commune's administrative centre and the nearest town with more than 20 thousand inhabitants | 21 | 17 | 13 | 30 | 30 | 21 | 51 | 85 | 21 | 93 | 2646 | 0.238 |
| Sum | | | | | | | | | | | 11107 | 1 |

### 3.2.2. Characteristics reflecting functional resources of tourism potential

The highest weight, 0.139 (Table 12), was calculated for characteristics determining tourism development in a commune (economic and political determinants), which is indicative of the fact that respondents chose the commune's ability to obtain EU funds for tourism as the most important characteristic. The respondents were slightly less interested in commune's expenses on tourism and those associated with commune promotion, as well as total commune income.

**Table 12**. Weight of characteristics affecting tourism development in a commune (based on Authors' own study)

| Division I – Economic and political determinants | | | | | | | | | | | Weighted mean of scores (pts) | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Characteristic | Point score | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| Total commune income | 8 | 13 | 0 | 13 | 55 | 30 | 47 | 51 | 55 | 110 | 2873 | 0.127 |
| Commune's expenses on tourism | 0 | 8 | 13 | 0 | 42 | 47 | 38 | 43 | 38 | 153 | 3029 | 0.134 |
| EU funding for tourism obtained by the commune | 4 | 0 | 9 | 13 | 25 | 21 | 34 | 72 | 42 | 162 | 3146 | 0.139 |
| Financial resources destined for commune's promotion | 0 | 9 | 4 | 17 | 30 | 25 | 47 | 93 | 47 | 110 | 2994 | 0.133 |
| Operation of agritourism associations and Local Activity Groups | 9 | 0 | 9 | 17 | 38 | 42 | 64 | 102 | 42 | 59 | 2778 | 0.123 |
| Commune's membership in Local Tourism Organisations | 17 | 0 | 17 | 21 | 47 | 59 | 25 | 127 | 22 | 47 | 2600 | 0.115 |
| Commune's Department of Tourism | 13 | 17 | 9 | 21 | 47 | 34 | 76 | 76 | 34 | 55 | 2593 | 0.115 |
| Tourism specialists at the commune office | 21 | 9 | 13 | 25 | 59 | 38 | 60 | 68 | 17 | 72 | 2538 | 0.113 |
| Sum | | | | | | | | | | | 22551 | 1 |

The average weight for these characteristics was 0.131. The weights calculated for: operation of agritourism associations and Local Action Groups, commune's membership in Local Tourism Organisations, the presence of Tourism Department at the commune's office and employed tourism specialists at the commune's office were as follows: 0.123, 0.115 and 0.113, respectively. It indicates that these characteristics constitute less important economic and political determinants. Weights of socio-demographic determinants (Table 13) ranged from 0.191 to 0.216. The highest value, 0.216, was given to entrepreneurship of people. Weights for the remaining characteristics affected by socio-demographic determinants were similar. It should be mentioned that the lowest weight, 0.191, was obtained for population density.

**Table 13**. Weight of tourism development determinants for the commune (based on Authors' own study)

| Characteristic | Division II – Socio-demographic determinants | | | | | | | | | | Weighted mean of scores (pts) | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Point score | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Number of responses | | | | | | | | | | | |
| Age dependency ratio (number of individuals not in the labour force per 1 working age person | 12 | 12 | 47 | 13 | 72 | 34 | 55 | 64 | 17 | 56 | 2403 | 0.199 |
| Unemployment rate | 30 | 8 | 21 | 47 | 51 | 25 | 60 | 60 | 21 | 59 | 2381 | 0.197 |
| Population density (number of people per 1 km$^2$) | 17 | 29 | 17 | 25 | 77 | 30 | 64 | 68 | 25 | 30 | 2308 | 0.191 |
| Self-organisation of the society (number of foundations and associations registered in the REGON system per 1 thousand people) | 13 | 13 | 30 | 47 | 60 | 38 | 42 | 72 | 25 | 42 | 2360 | 0.196 |
| Entrepreneurship of people (private economic entities registered in the REGON system per 1 thousand people) | 25 | 4 | 13 | 21 | 42 | 51 | 55 | 60 | 30 | 81 | 2617 | 0.217 |
| Suma | | | | | | | | | | | 12069 | 1 |

Tables 14 and 15 show calculated weights for each section comprising, respectively, structural and functional resources of tourism potential. The highest weight (0.7) is associated with political and economic determinants, the lowest value being obtained for availability of road connections and area's rurality (0.1 each).

**Table 14.** Weight of the divisions belonging to the structural resources of tourism potential (based on Authors' own study)

| Division | Sum of Weighted mean of scores (pts) | Weight |
|---|---|---|
| Tourism advantages | 121.04 | 0.4 |
| Tourist-oriented infrastructure | 146.76 | 0.4 |
| Communication accessibility | 29.22 | 0.1 |
| Commune's rurality | 29.08 | 0.1 |
| Sum | 326.10 | 1 |

**Table 15**. Weight of the divisions belonging to the functional resources of tourism potential (based on Authors' own study)

| Division | Sum of Weighted mean of scores (pts) | Weight |
|---|---|---|
| Economic and political determinants | 59.03 | 0.7 |
| Socio-demographic determinants | 31.59 | 0.3 |
| Sum | 90.63 | 1 |

# 4. Conclusions

The assumed research hypothesis was confirmed. The characteristics representing structural resources which had the greatest impact on rural tourism development included: presence of natural water bodies in the commune, number of historic buildings/sites, number of food and beverage serving establishments, convenient road access to the commune's administrative centre and distance between the locality and the nearest town whose population exceeds 20 thousand inhabitants. Among functional resources, indicators which may enhance an area's attractiveness for tourists include acquisition of EU funds and commune's expenses on tourism, as well as entrepreneurship of inhabitants. In many cases, average scores for the examined indicators varied significantly according to gender of respondents, as confirmed by statistical analysis.

Weights are a measure of importance of characteristics pertaining to structural and functional resources, and they were calculated based on scores given by respondents. The obtained indicators (weights), describing importance of characteristics affecting rural tourism development, will be used in the future to assess the tourism potential of rural areas, and to compare regions in terms of this potential by means of multidimensional comparative analysis. Such comparison will allow us to indicate the most attractive region in natural and cultural terms, one that is also best prepared to fulfil tourist functions.

Of the examined characteristics describing tourist advantages, the highest scores were given to forests, natural water bodies, health-related advantages, national parks and landscape parks. Also, these characteristics yielded the highest values of weights. The highest weight cultural advantages included historic building/sites, although women also pointed to regional products, and men to museums and national remembrance sites.

The most important characteristics of tourist development of a rural area chosen by respondents included number of agritourism farms, number of bedspaces provided by this type of accommodation, food and beverage serving establishments, tourist trails, cycle routes, life-guarded swimming sites and beaches. However, analysis of individual characteristics of tourist infrastructure according to gender revealed that men also paid much attention to ski lifts, winter sports equipment rental shops, bicycle rental shops and water sports equipment rental shops.

The structural resources pertaining to tourism potential of rural areas also include convenient road access, and the most critical component according to the respondents involves the connection to the commune's administrative centre via communal, district and national roads.

Characteristics of commune rurality were among traits indicated by the respondents as the least important. However, it should be stressed that, of these features, the highest scores were given to distance from the commune's administrative centre to the nearest town whose population exceeds 20 thousand inhabitants. Both women and men pointed to this characteristic as the most important, however, it proved to be more sought-after by women.

According to respondents, economic and political determinants have more influence on tourism development in a commune than socio-demographic characteristics. Both women and men who participated in the survey chose acquisition of EU funds for tourism as the most important economic and political determinant, which was followed by commune's expenses on tourism, financial resources allocated to promote the commune, activity of agritourism associations and Local Action Groups. Of the socio-political determinants, the characteristics which received the highest scores included entrepreneurship of people and self-organisation of the community.

## Acknowledgments

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