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COMMON FORMS OF RECREATION AMONG RESIDENTS OF RURAL AREAS: THE CASE OF RESIDENTS IN LUBELSKIE VOIVODSHIP

POPULARNE FORMY REKREACJI WŚRÓD MIESZKAŃCÓW TERENÓW ROLNYCH: PRZYPADEK MIESZKAŃCÓW WOJEWÓDZTWA LUBELSKIEGO

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Abstract. Because of the correlation between an individual's health and physical activity, this study examines factors influencing the participation of rural residents in various recreational activities. Using survey data collected from rural residents of two areas of Lubelskie Voivodship, this paper fills the gap in research focused on rural residents. The response summary identifies the two most common forms of recreation among rural residents as walking and bicycling, recreation forms common in other European and non-European countries. To further identify personal characteristics and their relation to the frequency of recreational walking and biking, two equations were specified and estimated using latent dependent variable techniques. The results equation showed that females and farmers were more frequently walking than men or non-farming rural residents. In the case of recreational biking, married respondents, farmers, and residents of the northern area of Lubelskie were twice as likely to bike often or very often than the non-married, not employed in farming, and residents of the southern area. Results indicate that in addition to different demographic characteristics, location determines physical activity as reflected in recreational walking and biking, suggesting different approaches are needed to increase participation in either form of recreation among rural residents.

Introduction

Physical activity has been associated with positive effects on health maintenance and disease prevention. For example, physical activity reduces the risk of cardiovascular diseases, diabetes, and some types of cancer [U.S. Department of Health 2008]. Health benefits of physical activity are of utmost importance in an aging society like that in Poland. Walking is free and available to the widest segment of population regardless of age or income [Janke et al. 2016]. Recreational walking is the only form of regular exercise for many. The importance of moderate physical activity as a determinant of good health led to the recommendation to improve infrastructure supporting walking and biking [CDCP 2003, World Health Organization 2004]. Walking and biking in general contributes to lower carbon emissions and noise level [Sinnott et al. 2011] and recreational walking and biking develops a habit that encourages this form of transportation also for non-recreational activities. Moreover, both walking and biking contribute to a sense of community [Du Toit et al. 2007] because it is a display of a lifestyle that encourages human interaction.

Health benefits of such forms of physical activity like walking and biking are of primary importance because of their effects on the government health care costs and household health care expenditures. In a region such as Lubelskie, where the average household income is below the national average, recreational walking or biking is of particular relevance. Monthly expenditure on health in Lubelskie Voivodship amounted to 57.96 PLN, but, on average, a Polish household spent 53.95 PLN in 2014 [GUS 2015]. Only residents of Slaskie and Mazowieckie Voivodships spent more on health care than Lubelskie residents. Engaging rural population in the simplest forms of physical activities such as walking or biking can improve disease prevention, especially in rural areas where the access to health care is more difficult. Circulatory diseases

are the leading cause of death in Poland, but the rate is higher among rural population [www.efrwp.pl 2016]. Indeed the rates are higher for both rural men and rural women [Ciura 1998], while cancer rates are higher for rural men compared to their urban counterparts.

The recognition of the need for physical activity is reflected in enormous undertakings by local governments to build biking paths and renovate and expand hiking and walking trails in local parks in recent years. A large number of biking and walking trails was constructed with a contribution of funds from the European Union (EU). Although the largest number of new trails has been built in towns and cities throughout Poland, some of those funds have been made available to rural counties. A typical rural trail is designed to accommodate both walkers and bikers. New trails are often used for commuting to work or school by many rural residents as well as for recreation. Walking trails have been reported as beneficial in promoting physical activity, especially among women and low-income residents [Brownson et al. 2000].

This paper examines rural residents in Lubelskie Voivodship and their choice of recreational activities, especially two common forms of recreation across Europe: walking and biking. Whereas a number of studies examined choices of walking or biking for recreation among urban residents, studies of rural area residents are infrequent. In the case of Poland, the phenomenon of these two recreational activities in rural areas is relatively recent and is becoming more popular, despite common ownership of cars. The promotion of Lubelskie Voivodship has been encouraged because the area is considered one of the least developed EU regions and below the average population density in Poland. Such areas may benefit from the encouragement of recreational types of physical activity more so than the densely populated urban areas, where new trends in lifestyle (including forms of recreation) are more likely to be adopted. In particular, this study aims at identification of resident characteristics associated with both types of recreation and possible differences across two sections of Lubelskie Voivodship. Knowledge of relevant factors and their relationship to recreation permit to targeting various groups of residents with suitable messages including education about health benefits of physical activity. The current empirical examination is based on data obtained from a convenience sample of 200 respondents residing in two clusters of villages in 2013.

Walking and biking in Poland

Leisure-time walking is popular. In Poland, there is a long tradition of trail walking and millions of vacationers travel every year to southern Poland to take advantage of walking trails in picturesque mountain areas. In many towns and cities there are public parks that offer the opportunity for leisure walking. Opportunities in rural areas exist but require using a trail that often extends beyond the settlement. Many walking trails pass through villages traversing the landscape, often connecting various points of interest of historic importance or natural wonders. Villages located near forested areas offer more opportunities to walk. The common hobby of mushroom picking involves walking through the woods and meadows during the summer and fall and attracts both urban and rural residents. However, casual observations suggest that walking for leisure is less common in rural areas because such areas, due to the character of settlement, often lack suitable amenities that facilitate walking, e.g., parks. The construction of paved sidewalks, street lightning, and other technical infrastructure improvement in recent years have encouraged walking for leisure in rural areas and is consistent with studies showing the link between recreational walking and pedestrian infrastructure [Saelens, Handy 2003].

It is estimated that 64% of Polish households had a bicycle in 2005 [Kopta 2009], while 62% of households had a car in 2011 [Wykresy.net 2016]. Since 2005, the number of bicycles likely has increased because of the large domestic production and demand. There is a lack of data regarding bicycle presence on county roads or bike paths in Poland. The monitoring of traffic on district (powiat) roads indicated that, on average, 0.73% of all traffic was attributed to bikes [Kopta 2009]. However, in Lubelskie Voivodship the share was nearly twice as large and amounted to 1.39%, the second largest among all voivodships. Of the most frequented roads by bikers, two roads located in Lubelskie were among the top ten roads in the country in 2005. Neither of the two roads was in

the area covered by the survey discussed in this paper. For safety reasons, the use of main roads by bikers is not recommended and bikers use numerous newly built trails and bike paths.

Earlier studies showed that rural residents' physical activity was more often related to work than to recreation [Arnadottir et al. 2009]. Rural residents in particular were less likely to meet physical activity recommendations [Parks et al. 2003]. A study of recreational walking in Australia did not find differences between urban and rural residents [Leslie et al. 2007a, 2007b], while another study found that urban residents spent more time on recreational walking while rural residents biked [Van Dyck et al. 2010]. The perception of lack of safety lowered walking among Japanese men [Inoue et al. 2011], and walking and cycling for recreation among older adults in Belgium [Van Cauwenberg et al. 2012]. Walking has been of interest to public health policymakers for a while [Sallis et al. 2003] and led to focusing on "walkability" of neighborhoods and understanding what environmental features promote this form of recreation. Numerous local initiatives in rural Poland have focused on rural road safety, especially in and near villages, where foot traffic is heavier. Areas examined in the current study are rural with relatively low population density, while one of the areas is also located near a national park that has several walking and biking trails.

Material and methods

The prepared questionnaire covered a number of issues relevant to rural populations including various topics related to environmental quality, and probed respondents for their habits regarding outdoor recreation. One of the questions asked that a respondent indicate forms of recreation he or she practices and the frequency of recreating in that way. A list of eight forms of recreation including biking, walking, nordic walking, swimming, fishing, jogging/running, team sports (e.g. soccer), and "other," augmented by five levels of frequency, where 1 = almost never and 5 = very often. Walking and biking is also a form of transportation for the purpose of getting to work or shopping, but in this study the focus is on walking and biking for recreation. Village residents lack local public transportation and have always walked or biked, but either of these activities to recreate is becoming increasingly popular, especially with improvements in road safety.

The survey was implemented in the northern and southern parts of Lubelskie Voivodship. Randomly selected residents (a convenience sample) in the villages of Rakowiska, Janów Podlaski, Rossosz, Łomazy, Terespol, and Wisznice (all in Biała Podlaska district) were visited by an enumerator, who delivered copies of the survey instrument. A respondent self-administered the questionnaire and completed questionnaires were collected by the enumerator a few days later. A similar procedure was applied in surveying residents of Krynice (Tomaszów district), Komarów-Osada, Śniatycze, Dub, Janówka Zachodnia and Zubowice/Antoniówka (all in Zamość district). The survey was conducted between July 1 and August 12, 2013.

In addition to questions regarding the form and frequency of recreation, each respondent was asked to provide commonly collected socio-economic and demographic information about himself and his household. Most of those questions were identical to those used in the national census. Such information served to specify explanatory variables used in the empirical analysis.

The questions about the frequency of recreation types applied a five-step scale. The mid-step of the scale indicated that a respondent neither often nor seldom recreated in a particular way (Tab. 1). The summary of responses shows that only about one out of three respondents often walked for leisure and another fourth did it neither seldom nor often. Nearly one in ten respondents almost never walked for leisure. It is possible that this figure includes persons that suffer from health conditions limiting this type of recreation.

A very different picture emerges with regard to recreational biking. Three out of five respondents often or very often bike for leisure. Given that about two out of three Polish households have a bike, the figure of recreational bikers in the studied area suggests that almost every household that owns a bike uses it for recreation (although, most likely, also for non-recreational purposes).

Respondent and household characteristics differ between those answering questions about walking ($n = 174$) and biking ($n = 195$). The higher number of those responding about biking for

Table 1. Frequency performance of walking and biking as recreation among residents of selected rural areas of Lubelskie Voivodship

Tabela 1. Częstość spacerowania i jazdy na rowerze dla celów rekreacji wśród mieszkańców wybranych terenów wiejskich województwa lubelskiego

Frequency of participation/ <i>Częstość</i>	Percent of respondents participating in/ <i>Odsetek respondentów preferujących</i>	
	walking/ <i>spacer</i>	biking/ <i>jazda na rowerze</i>
Almost never/ <i>Prawie wcale</i>	9.20	8.72
Seldom/ <i>Rzadko</i>	34.48	16.82
Neither seldom nor often/ <i>Ani rzadko, ani często</i>	24.71	13.85
Often/ <i>Często</i>	24.71	43.08
Very often/ <i>Bardzo często</i>	9.20	17.44

Source: own study

Źródło: opracowanie własne

married (73.9%) than those indicating walking (72.2%). Respondents indicated a category of income and the average score was 3.15 and 3.12 for walker and biker groups, respectively (i.e. an income between 2,001 PLN and 2,500 PLN). Among respondents who walked for recreation, 40.8% were employed full time, while among those who biked, the fully employed accounted for 45.2%. More farmers responded to the question of walking for recreation (31.4%) than to the question about biking (29.3%).

Results

The empirical relationships defined the dependent variables as self-assessed frequency of walking or biking for recreation with various levels of intensity. The deliberate nature of the frequency scale suggests that the suitable estimation method is the ordered probity method. However, preliminary estimations show that using all frequencies was not statistically justified. Therefore, the dependent variable was modified. The options almost never were collapsed into a single category. Similarly, the two options from the other end of the scale (often and very often) were also combined into a single category. The final specification of the dependent variable consisted of three ordered categories ranging from almost never/seldom to neither often nor seldom, to often/very often. It is plausible that a larger sample size would permit a larger number of categories in the ordered probity specification, but not in the case of the sample at hand.

In the case of walking only two, but meaningful, explanatory variables are statistically significant (Tab. 2). Gender effect suggests that women are more likely to walk for recreation than men. The odds of women walking are more than five times larger than those of men walking for recreation. The gender difference is consistent with results from earlier studies in other countries. Consequently, men need to be motivated to undertake walking as recreational activity by possible education campaign linking physical activity and health. Also, farmers are more likely to walk for recreation than non-farmers. This result is a bit surprising because of differences in lifestyle between farmers and those not farming with the latter expected to more readily adopt new trends in lifestyle including participation in recreational activities. The odds of farmers walking for recreation are more than twice of those not engaged in farming.

Table 3 shows the ordered logit estimation results in the case of recreational biking. The explanatory variables are socio-economic and demographic characteristics and location. Among

recreation than those about walking reflects the stronger preference for biking over than walking. This result differs from the reported stronger preference for walking than biking in studies from other countries [Roovers et al. 2002]. The difference in the number of recreational walkers and bikers and the different preference for either form of recreation suggests the separate review of descriptive statistics. In the case of walking, the average respondent was 42.6 years old and 42.7 years old in the case of biking. Nearly 24% of those indicating walking frequently had a university degree, but a slightly larger share (26%) had a university degree among those indicating biking frequently. The average household size differed slightly and was marginally larger for walkers (3.75 persons) than for bikers (3.71). However, those indicating biking frequently were more likely to be

Table 2. Estimation results of the logit equation of recreational walking frequency among rural residents in Lubelskie Voivodship

Tabela 2. Wyniki obliczeń częstości rekreacyjnego spacerowania wśród mieszkańców wsi w wojewodztwie lubelskim przy zastosowaniu metody logitowej

Variable name/ <i>Nazwa zmiennej</i>	Estimated coefficient/ <i>Współczynnik</i>	Significance level/ <i>Poziom istotności</i>	Odds Ratio/ <i>Iloraz szans</i>
Intercept 1	-0.0858	0.01	NA
Intercept 2	1.2294	1.84	NA
Education/ <i>Wykształcenie</i>	-0.1251	0.08	0.9
Income/ <i>Dochód</i>	-0.1818	1.04	1.0
Fulltime employed/ <i>Pełne zatrudnienie</i>	0.7230	2.13	0.8
Farmer/ <i>Rolnik</i>	0.8208	2.91	2.3
Age/ <i>Wiek</i>	-0.0198	1.12	1.0
Gender/ <i>Płeć</i>	1.6423	21.26	1.5
Marital status/ <i>Stan cywilny</i>	0.2746	0.29	2.6
Child presence/ <i>Dziecko*</i>	-0.1701	0.17	1.7
Northern region/ <i>Obszar północny**</i>	-0.5432	2.15	0.6

* one child in a household/*jedno dziecko w gospodarstwie domowym*; ** villages of/*miejscowości: Rakowiska, Janów Podlaski, Rossosz, Łomazy, Terespol, Wisznice*; NA – not applicable/*brak odniesienia*

Source: own calculations

Źródło: obliczenia własne

the explanatory variables, three are statistically significant. Among them, being married seems to increase recreational biking frequency, suggesting that couples are more likely to use this form of recreation compared to non-married respondents. Also, farmers were more likely to bike for recreation than those of a different employment status. The result suggests that farmers actually think about recreation and choose biking more often than other groups in the studied sample. Finally, the residents of the northern area were more likely to practice recreational biking than those living in the southern part of Lubelskie. The area in the southern part has a visually more attractive and diversified landscape, but apparently those residing in the northern part bike more often, possibly because of easier access to bike-friendly infrastructure. The southern part of Lubelskie has a less developed overall technical infrastructure and its safety perception may be a factor of less frequent biking for recreation. The odds associated with each of the three variables suggest that those who a married,

Table 3. Estimation results of the ordered logit equation of recreational biking frequency among rural residents in Lubelskie Voivodship

Tabela 3. Wyniki obliczenia równania częstości rekreacyjnej jazdy rowerem wśród mieszkańców wsi w Wojewodztwie Lubelskim

Variable name/ <i>Nazwa zmiennej</i>	Estimated coefficient/ <i>Współczynnik</i>	Significance level/ <i>Poziom istotności</i>	Odds Ratio/ <i>Iloraz szans</i>
Intercept 1	-2.6407	0.01	NA
Intercept 2	-2.1387	0.03	NA
Education/ <i>Wykształcenie</i>	0.0550	0.90	1.1
Income/ <i>Dochód</i>	0.0042	0.98	1.0
Fulltime employed/ <i>Pełne zatrudnienie</i>	-0.2084	0.69	0.8
Farmer/ <i>Rolnik</i>	0.8339	0.99	2.3
Age/ <i>Wiek</i>	-0.0021	0.92	1.0
Gender/ <i>Płeć</i>	0.3778	0.27	1.5
Marital status/ <i>Stan cywilny</i>	0.9510	0.08	2.6
Child presence*/ <i>Dziecko</i>	0.5162	0.19	1.7
Northern region**/ <i>Obszar północny</i>	0.6674	0.07	1.9

Explanations: see tab. 2/*Objaśnienia: jak w tab. 2*

Source: own calculations

Źródło: obliczenia własne

are farmers, or reside in the northern area are about two times more likely to frequently bike for recreation than those not married, having non-farm related employment status, or living in the southern part of Lubelskie.

Conclusions

This study examines factors associated with choosing to walk or bike for recreation by rural residents of two areas in Lubelskie Vovidsip. Earlier studies showed that among the socio-economic and demographic factors, gender, education, and income influence recreational walking or biking in addition to the perception of safety. Factors influencing recreational walking and biking in rural areas of Lubelskie are only partially similar. The positive effect of marital status suggests that recreating solo is less likely. The difference in location effect may, to some extent, reflect access to infrastructure and safety perception. Recreational walking frequency is the domain of women and men seem to lack motivation to engage in this form of recreation. Also, farmers in the studied vil-lages seem to be more likely to walk for leisure than residents who do not farm although it would seem that those not farming tend to adopt new lifestyle trends, including recreation, more readily.

In contrast to well-organized biking lobbies in large cities [Lubaczewska, Grochowski 2011], bikers in rural areas have little leverage in forcing changes to roads and sidewalks that recognize the needs of bikers. Local governments often lack knowledge and experience in offering solutions (e.g., roads, bike parking places) that encourage recreational biking and facilitate biking to work or school. Recreational walkers, including those practicing nordic walking, also often face limited access to walking paths designed with their needs in mind. They have to share the road with other traffic, which discourages recreational walking in rural areas. Assistance in the area of design and financing projects that permit safe walking and biking seems a worthwhile goal of public policy, especially given the health benefits and their importance for work productivity, reduction of household expenditure on medical services, and life quality of rural residents. Ultimately, healthier rural residents benefit the government budget by requiring less health care from government clinics.

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Streszczenie

Celem pracy jest próba oceny związku pomiędzy zdrowiem a aktywnością ruchową i zweryfikowanie czynników wpływających na uczestnictwo mieszkańców terenów wiejskich w różnych formach rekreacji. Wykorzystano badanie ankietowe wśród mieszkańców wsi dwóch rejonów województwa lubelskiego. Pozyskane dane wskazują, że najpowszechniejszymi formami rekreacji są spacerowanie i jazda na rowerze – formy rekreacji powszechne w innych krajach w Europie i na świecie. W celu zidentyfikowania cech respondentów i ich związków ze spacerowaniem i jazdą na rowerze dla rekreacji, sformułowano dwa równania częstotliwości tych form rekreacji i obliczono je za pomocą techniki regresji zmiennej ukrytej. Wyniki wskazują, że kobiety oraz rolnicy częściej niż mężczyźni i nie-rolnicy spacerowali w celach rekreacyjnych. W przypadku rekreacyjnej jazdy na rowerze, respondenci pozostający w związku małżeńskim, rolnicy oraz mieszkający w północnym obszarze województwa lubelskiego mieli dwa razy większy iloraz szans uprawiania tej formy rekreacji niż osoby niebędące w stanie małżeńskim, niepracujący w rolnictwie oraz mieszkające w południowej części województwa. Wyniki badań sugerują potrzebę odmiennego podejścia do zwiększenia uczestnictwa w tych formach rekreacji wśród mieszkańców wsi w obu obszarach badawczych, poza uwzględnieniem czynników demograficznych.

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