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ACTIVITIES OF LOCAL GOVERNMENT UNITS IN THE POPULARISATION AND PROMOTION OF A HEALTHY LIFESTYLE AMONG AN AGING RURAL SOCIETY – THE CASE OF POLAND

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ABSTRACT: Purpose: Three goals were set in the study, which was met: to present the expected changes in the population of Poland, discuss the concept of "living in health" and prognoses regarding this issue. Methodology: The objects of the study were rural and urban-rural communes of the Lesser Poland Voivodeship. The statistical analysis of collected survey data was used as the method. Findings: The level of health popularisation and promotion by Local Government Units (LGUs) is varied. The activities related to the popularisation and promotion of a healthy lifestyle are moderate in 47.9% of respondents in rural communes and 17.4% in urban-rural communes. The level of indebtedness has an impact on undertaking activities in the field of health popularisation and promotion but does not affect the availability of sports and recreation infrastructure. At the same time, too few actual observations were indicated for TSUs taking the full range of measures and having a debt level falling into the 21-30% group (76%). However, too many observations (126%) relate to debt levels of 11-20%. Access to sports infrastructure does not affect the level of health popularisation and promotion. The obtained answers indicate that 34.5% of rural communes and 10% urban-rural have no problem with access to recreational infrastructure, for 35.5% of respondents from rural communes and 11.8% from urban-rural, this is a moderate problem. Implications: The ageing society causes changes and consequences in all areas of socio-economic life. The activities of some local governments are insufficient, and there is a lack of consistency in their conduct in this area.

KEYWORDS: population forecasts, ageing of the population, physical activity, healthy lifestyle

Introduction

The problem of an ageing society is eagerly taken up in both journalistic and scientific publications. This is due to the character of the problem, proving the inevitable changes occurring around the world. Ageing in society is a major social and personal challenge. This difficult experience will affect everyone individually, their closest ones and entire communities. Ageing is not just a matter of the individual. There is a difficult problem of creating social and health security and organisation of general public space adapted to the needs of a growing group of older people. Demographic changes, the consequence of which is the ageing of societies, make it necessary to apply long-term governmental and local policies that support the needs of older people.

The ageing of the population is more and more noticeable in the case of Polish agriculture. Older people constitute an increasing proportion of people working in agriculture. The most numerous age groups among those running Polish farms are people aged 45-64 (GUS, 2017). Therefore, it should be assumed that the age structure of farmers will be further shifted towards the dominant share of older age groups.

The ageing of societies has been the subject of scientific analysis and public debate since the 1990s. Negative demographic trends are becoming more and more noticeable in all European Union countries. In Poland, it is expected that the problem of ageing will intensify in the coming years at a faster pace than in other European countries (Ciura & Szymańczak, 2012). Demographic ageing is a systematic increase in the percentage of elderly people in the population (Okólski, 2004). This means that the growth rate of the number of old people is greater than the growth rate of the population in general. The proportion of children in the total population is falling, and the proportion of older people is increasing. The greater share of elderly people in the overall rural population results mainly from the increase in life expectancy, low fertility rate and migration processes. The ageing of the population, both in cities and in the countryside, is a common phenomenon in most regions of the world. However, it is especially intense in Europe and North America.

The projected median age will increase in all European countries but at a different rate. According to forecasts, in 2030 Italy will have the highest median age among European countries, with half of the population aged 52 and more, and in 2060 the highest median (over 54) will occur in Slovakia and Poland (Giannakouris, 2008).

One of the characteristics of the ageing population process is the progressive ageing of the older population (Butler et al., 2004). In many European countries, seniors aged 80 and over are currently the fastest-growing group

DOI: 10.34659/eis.2023.85.2.598

in the entire population. In Poland, along with the progressive ageing of the population, the percentage of people in the oldest age group, 75/80 and more, is also expected to increase. This percentage will start to increase dynamically around 2025 when the age of 75 and more will be reached by people belonging to the generation of the post-war baby boom (Błędowski et al., 2012).

The issue of old age can be considered from two points of view: medical and social. Rapidly developing science, which is medicine, can ensure (under various conditions) maintaining human life until old age. Another issue is the quality of life in which they will exist. The latter is influenced by many factors that appear throughout life.

In this study, special attention will be devoted to the elderly and the possibility of influencing their lives through the activities of the local government in the field of promoting a healthy lifestyle, including existing sports infrastructure.

On the basis of the problem outlined, a research question about a healthy lifestyle appears as one of the elements aimed at improving the situation of the elderly. In the face of an ageing population, are LGUs taking significant actions to promote a healthy lifestyle? To find the answer to this question, the following research objectives were formulated:

- presentation of demographic changes taking place in Poland,
- discussing the concept of "living in health" and indicating examples of its values,
- assessment of the possibilities of using sports infrastructure and promoting a healthy lifestyle to improve the situation of the elderly.

In order to accomplish the indicated objectives, three research hypotheses were formulated:

- H1: The level of health popularisation and promotion by LGUs that improve the situation of the elderly is varied.
- H2: The level of LGU debt has an impact on the level of LGU's commitment to promoting a healthy lifestyle.
- H3: Access to the sports infrastructure has an impact on the degree of popularisation and promotion of health.

In addition, the relationship between the level of LGU debt and access to sports and recreation infrastructure was examined.

The source of data for the analyses presented in the study is a survey conducted among the rural and urban-rural communes of the Lesser Poland Voivodeship in the period September – December 2018 in cooperation with the Regional Accounting Chamber in Krakow. In addition, the demographic data of the GUS, United Nations and Eurostat were used. Research methods used in the review part include demographic analyses as well as critical ana-

DOI: 10.34659/eis.2023.85.2.598

lysis of the literature. In the empirical part, the survey data were analysed using statistical tools.

An overview of the literature

Old age as a social phenomenon defines society through the specificity of age structure but also through an intergenerational culture that needs to be learned. The age of life is getting longer, so more and more generations must learn to live and function with each other and next to each other. The problem of old age and ageing and the issue of its solution are not only within the borders of the countries (permanent map). It is also associated with the circulation of information, experiences, ideas, migrations, and population flows (liquid map). Stopińska-Pająk (2018) also puts forward the thesis about the issue being resolved over countries (flight map) due to the fact that health difficulties, disabilities or inefficiency largely result from the quality of the ecosphere. The topic of "ageing Europe" should be considered taking into account not a single country but all maps simultaneously (Stopińska-Pająk, 2018).

The issue of old age should be considered, taking into account the topics connected with it, such as care for the elderly, because their level of efficiency is varied. The quality and kind of assistance provided to the elderly depends on the interaction of factors that can be grouped into three or even four levels. The first of them, micro, is associated with the support of a disabled person by family, neighbours, and friends, but also environmental help when the former are unable to cope. At the meso level, the activity of the local government is expressed, which carries out tasks commissioned from the headquarters, but also through various initiatives, it takes care of the shape of social policy, taking into account the needs of the local environment. The macro level concerns the establishment of social policy at the national level. At the mega level, it is a commitment to implement the regulations set by the fact that a given country belongs to international organisations (Szweda-Lewandowska, 2013).

Taking into account the factors determining the specifics of society, attention is directed to geographical and demographic reasons, such as size (population), population density, structure by sex and age, birth rate or average life expectancy. Planning, decision making and implementation of a specific policy are different in the case of a "small" community and different in the case of several million. When it comes to organising public spaces for the elderly, the importance will be of, for example, population density, the share of the number of elderly people in the total population, the possibilities to meet housing needs for this group, etc. (Karwińska, 2008) will be important.

DOI: 10.34659/eis.2023.85.2.598

An increasing number of people aged 50+ are becoming the subject of interest of companies operating in various industries. This group, which has enormous potential, is becoming more and more interested in actively spending free time due to growing awareness. The segment of clients aged 50+ is characterised by specific needs. The knowledge of buyers in this age group, their preferences and diverse financial possibilities can help attract new consumers. First, however, you must adapt the available offer to customer requirements. In this respect, there is still a gap/divergence in the market (Nestorowicz & Bronikowska, 2011).

Inevitable demographic changes are observed around the world. This entails the need to change their perception. This is not a distant topic for far-off countries. On the contrary, it is observed in Europe and Poland. Ageing is a challenge, but it also creates new opportunities. Opportunities for the development of new markets available to increasingly elderly inhabitants, which improve their condition, but also ensure a higher standard of living. Importantly, the changes must occur not only in the policy of European, national, but also regional and local authorities because these authorities are closest to the inhabitants and know their needs.

Ageing is mentioned when there is an increase in the share of older people in the total population. The older age in the article will be understood as age 65+. An ageing population can be considered by analysing the age of 60 for women and 65 for men. However, the UN applies a uniform age for men and women, and it is 65 years (United Nations, 2021). In order for the analyses of data collected from the Central Statistical Office (GUS) to be comparable to UN studies, the threshold was adopted of 65 years. The ageing of society will be evidenced by the increase in the number of people aged 65 and more, i.e. post-working age (according to GUS – the age at which people usually end their work, i.e. for men – 65 years and more, for women – 60 years and more – GUS). Pre-working age is understood as one in which the population has not yet reached work capacity, i.e. the age group 0-17 years (GUS, 2021b). The working age is referred to as work capacity, which for men is in the range of 18-64 years, and for women – 18-59 years (GUS, 2021b). Therefore, the age of 65 is considered to be the beginning of old age (Kujawska, 2015). However, the indication of this age is not medical but more social. Health problems appear at different ages, and it is difficult to state clearly that at age 65, the state of health and well-being deteriorates significantly. The author does not agree with the opinion of Kujawska (2015), who believes that healthy people may experience problems related to ageing around 75-80 years old. The author's observations are quite different. However, the author agrees that the most common difficulties relate to problems with the movement system. In view of these considerations, it is reasonable to raise the issue of healthy life.

DOI: 10.34659/eis.2023.85.2.598

Whether extra years of life will be spent in health or in incomplete efficiency is extremely important. Healthy life years (also known as life expectancy without disability) are an important measure of the relative health of the population in the European Union (Eurostat, 2021).

Table 1. Healthy life years

	Healthy life years at birth			Healthy life years at age 65		
	Females	Males	Difference	Females	Males	Difference
EU-28	64.2	63.5	0.7	10.1	9.8	0.3
Poland	64.6	61.3	3.3	8.9	8.2	0.7

Source: authors' work based on Eurostat [21-07-2021].

The data from 2016 presented in Table 1 indicate that the healthy life expectancy for Polish new-borns is about 65 years for women and just over 61 years for men. The EU average is 64.2 years for women and 63.5 years for men. Residents of the European Union at the age of 65 could expect, according to assumptions, about 10 years of healthy life. Whereas Poles could enjoy health for about 8-9 years.

Physical activity is a form of supporting life in health. It is one of the elements affecting physical and mental fitness. Its role in everyday life is getting more and more attention, trying to realize that the earlier you take care of your physical condition the better. The information provided by the National Cancer Registry shows that too little movement is the cause of, among others, the increasing risk of chronic diseases. A sedentary lifestyle and a poor diet contribute to the increased incidence of colorectal cancer. By exercising, you can reduce your risk of illness by a quarter, and in people who are slim even by half. The situation is similar with the prevention of breast cancer. Intense physical activity not only affects body weight, but also hormone levels. Most effectively, however, the occurrence of breast cancer is prevented by sport practiced in the period of youth (National Register of New-borns). Physical activity should become an element of a healthy lifestyle for all residents, regardless of their age. Often the authorities of LGUs have to face the challenge of providing appropriate conditions to facilitate physical activity, especially among the elderly.

Demographic forecasts are prepared for different periods depending on the institution making it. Forecasts up to 2100 can be found on the websites of the United Nations (United Nations, 2021), according to which in Poland there will be 23 033 thousand residents. According to Eurostat estimates, in 2100 Poland will have 27 524 thousand residents (Eurostat, 2021). On the

DOI: 10.34659/eis.2023.85.2.598

other hand, the Central Statistical Office (GUS, 2021a) does not provide such distant predictions, but "only" until 2050. Of course, one can discuss the usefulness and truthfulness of such distant forecasts, or even question them. Nevertheless, they provide a basis for further consideration, e.g. on long-term social policy.

Table 2 presents the expected changes in the population of Poland according to the GUS, the UN and Eurostat. As you can see, the most favourable for Poland are the predictions of the European Statistical Office, and the least of the UN. Big differences between the above-mentioned forecasts are visible in 2045 and 2050.

Table 2. Forecasted changes in the population of Poland [in thousands]

Year	GUS (G)	UN (O)	EUROSTAT (E)	G-O	G-E	O-E
2020	38 138	37 847	37 968	291	170	-121
2025	37 741	37 515	37 810	226	-69	-295
2030	37 185	36 945	37 398	240	-213	-453
2035	36 477	36 178	36 821	299	-344	-644
2040	35 668	35 283	36 174	385	-506	-892
2045	34 817	34 310	35 513	507	-696	-1 203
2050	33 951	33 295	34 861	656	-910	-1 567

Source: authors' work based on GUS, UN, Eurostat [19-07-2021].

Table 3 presents the GUS forecasts for changes in the population of Poland. The data it contains are ranked according to a decreasing index of population dynamics in 2050/2018. This is therefore an indication of the voivodeships in which demographic changes will be most visible. The Opole Voivodeship is noteworthy, whose population in 2050 will constitute 75% of that of 2018, and Świetokrzyskie – 79%. Slight changes in the population will apply to the following voivodeships: Masovia, Pomerania, Lesser Poland and Subcarpathia.

The problem of the impact of actions taken by local government units on the situation of an ageing society has become the subject of numerous research studies, examples of which can be found in the international literature on the subject. Among the research topics undertaken, the authors' attention was drawn to two research trends, the results of which indicate the existence of relationships between the ageing of the population and the structure of expenditure of the government and local government authorities and between the level of debt of local government units and the amount of expenditure allocated to the implementation of the tasks of these units.

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Table 3. Forecasted changes in the population of Poland by voivodeships

Year / Voivodeship	2018	2020	2025	2030	2035	2040	2045	2050	2050-2018	2050/2018
	in thousand									%
Masovia	5 403	5 388	5 416	5 418	5 401	5 375	5 348	5 319	-85	98
Pomerania	2 334	2 324	2 335	2 334	2 323	2 307	2 287	2 266	-68	97
Lesser Poland	3 401	3 396	3 407	3 403	3 384	3 355	3 319	3 279	-121	96
Greater Poland	3 494	3 490	3 490	3 471	3 435	3 389	3 340	3 288	-206	94
Subcarpathia	2 129	2 115	2 096	2 068	2 030	1 982	1 929	1 870	-259	88
Poland	38 411	38 138	37 741	37 185	36 477	35 668	34 817	33 951	-4 461	88
Lubusz	1 015	1 010	997	980	958	933	906	879	-136	87
Kuyavia-Pomerania	2 078	2 065	2 039	2 004	1 960	1 909	1 854	1 799	-279	87
Lower Silesia	2 901	2 867	2 826	2 773	2 709	2 638	2 566	2 495	-406	86
Warmia-Masuria	1 429	1 421	1 399	1 371	1 336	1 296	1 253	1 208	-221	85
West Pomerania	1 701	1 692	1 667	1 635	1 595	1 549	1 501	1 453	-248	85
Podlaskie	1 182	1 168	1 147	1 122	1 092	1 059	1 022	982	-199	83
Lublin	2 118	2 096	2 050	1 996	1 933	1 862	1 788	1 711	-407	81
Łódź	2 466	2 434	2 374	2 306	2 232	2 153	2 075	1 999	-467	81
Silesia	4 534	4 478	4 370	4 245	4 108	3 965	3 821	3 681	-853	81
Świętokrzyskie	1 242	1 226	1 194	1 157	1 117	1 072	1 024	977	-265	79
Opole	987	967	936	902	865	826	785	745	-242	75

Source: authors' work based on GUS [19-07-2021].

The local government unit represents the community and administrates its funds. The idea of New Public Management appeared in public administration (Eshuis & Klijn, 2012), which has influenced and continues to influence public sector reforms, introducing methods and management techniques specific to the private sector so far. Local Government Units can develop activities focused on the place promotion, treating them as a factor significantly affecting regional development. Local authorities have a central role to play in popularising and promoting health.

The results of published international studies have shown that the ageing of the population influences the elements of government and local government spending, especially in the area of social welfare, education and health, including the popularisation and promotion of behaviours influencing a healthy lifestyle of the elderly (Sanz & Velázquez, 2007; Shelton, 2008; Tepe & Vanhuysse, 2009; Krieger & Ruhose, 2013).

DOI: 10.34659/eis.2023.85.2.598

Jäger and Schmidt (2016) argue that the growing number of elderly voters has contributed to the decline in public investment rates. Thus, raising public investment levels might become increasingly difficult in greying democracies. The results of the questionnaire surveys confirm the existence of specific preferences of elderly people regarding the social expenditure of local government units. Sørensen (2013) conducted a cross-section survey-data for 22 countries and estimated a regression model explaining respondents' public spending preferences. The results show that elderly people want less education spending and more health care spending. The results of a survey conducted by Cattaneo and Wolter (2009) among Swiss society also show that elderly people have a clear tendency to spend public resources on health and social security than on education.

Local authorities have responsibility for wider policy areas, which can have a significant impact on the physical activity of the local population. It was confirmed that the property and financial situation of local government units, and especially the level of their debt, have a negative impact on the amount of expenditure allocated to the implementation of tasks of these units (Oxley & Martin, 1991; Jäger & Schmidt, 2016). Thus, a research gap appears, as the impact of the level of indebtedness of local government units on the specific type of expenditure allocated to the promotion of a healthy lifestyle among the elderly was not studied.

Sainto et al. (2016) examined the cross-sectional and longitudinal associations between the area-level population ageing and the subjective well-being of older individuals. Findings from two survey projects suggested cross-validity in the positive effect of area-level population ageing on older adults' well-being. Studies carried out in various countries prove that the subjective well-being of older people could be affected by community characteristics (Gao et al., 2017; Levasseur et al., 2015; Li et al., 2005). These findings suggest that creating cohesive neighbourhoods may encourage elders to participate in social activities and promote a healthy lifestyle.

The actions of local self-government authorities undertaken in communes may therefore have an impact on the degree of popularisation and promotion of health among the elderly, which may contribute to extending the period of "healthy life". Already in the 1980s, it was confirmed that in environments with a higher elderly concentration, older residents tended to have greater activity participation (Lawton et al., 1984). Still, the literature emphasises that only a few studies have examined the impact of factors related to the place of residence on the health and healthy lifestyle of the elderly (Sainto et al., 2016; Vogelsang & Raymo, 2014).

Research conducted by O'Brien (2014) reveals that local councils have differing abilities to provide age-friendly local infrastructure. The author claims that the challenges in this topic are greater overall for regional, rural

DOI: 10.34659/eis.2023.85.2.598

and fringe councils compared to metropolitan. As essential task of LGUs which affects the quality of life of elderly people is providing infrastructure tailored to their needs and capabilities (Maj-Waśniowska & Jedynak, 2020).

Currently, there are many changes related to the local infrastructure (Broniewicz et al., 2021). It should also be noted that access to sports infrastructure for older people is seen as one of the factors by which local authorities can influence the perception of the immediate environment as friendly to the elderly (Edwards & Tsourous, 2006; Lui et al., 2009). The results of the cited international research became the starting point for the authors to undertake their own research, leading to the verification of the formulated research hypotheses.

Research methods

The presented empirical research is based on an opinion survey carried out by employees of the College of Economy, Finance and Law of the Cracow University of Economics in cooperation with the Regional Accounting Chamber in Krakow in September-December 2018 as part of the project "Problems and challenges of local government units in the era of ageing society". The subject of the survey was the opinion of communes on the opportunities and threats that the progressing ageing of the society and the development of the silver economy bring to the implementation of communal tasks.

The survey was conducted using the CAWI method among all communes of the Lesser Poland Voivodeship. In a few cases, given the technical conditions, it was also possible to provide a survey in the form of a questionnaire on paper form containing a set of questions identical to the electronic version. During the research, it turned out that in some communes, answering individual questions required the exchange of information between physically distant departments, and the survey available at one computer station hindered the formulation of reliable answers.131 units provided full answers. The answers came mainly from rural communes (67.2%) and urban-rural (25.2%). There were 5.3% of urban communes and 2.3% of cities with poviat rights. The debt in the analysed communes was in the range of 21-30% (in the case of 29.8% of respondents), 11-20% (24.4% of respondents), 1-10% (17.6% of LGU). People in the pre-working age constituted on average 20.99% of LGU residents participating in the survey, 62.7% in the working age and 16.3% in the post-working age.

Responses to the survey were provided by representatives of Local Government Units from rural and urban-rural communes.

The conducted surveys verified the research hypotheses H1-H3 formulated earlier on the basis of the analysis of the distribution of answers to indi-

DOI: 10.34659/eis.2023.85.2.598

vidual questions in the survey, and the answers "I do not know" or "I have no opinion" were omitted. For the analysis of results, the χ2 independence test was used, in which the null hypothesis about the lack of relationship between the analysed variables is tested. The H0 hypothesis should be rejected if the statistics χ2 given by the formula:

$$\chi 2 = \sum \frac{(Ei - Oi)^2}{Oi}. \quad (1)$$

exceed the table value for the assumed level of significance and the number of degrees of freedom given by the formula r = (k-1) * (w-1), where k is number of column and w is a number of verse. A significance level of 0.05 was used in the study. During the interpretation, it should be noted that empirical values were > 5 (Mamcarczyk, 2022).

Results of the research

The H1 hypothesis was verified based on the distribution of answers that the surveyed units gave to the question What actions to improve the situation of the elderly are undertaken in your commune? One of the areas studied was the popularisation and promotion of a healthy lifestyle. Respondents provided answers to this question on a scale of 0-3, where 0 meant lack of knowledge on the subject, 1 that LGU do not take action in this area, 2 activities are undertaken to a moderate extent, and 3 that activities are undertaken to the full extent.

The results obtained indicate that the activities related to the popularisation and promotion of a healthy lifestyle are moderate in 47.9% of respondents in rural communes and 17.4% in urban-rural communes. The full range of activities is used in 10.7% of rural LGUs and 6.6% in urban-rural. 11.6% of rural communes and 1.7% urban-rural communes do not take up the activities. Therefore, referring to the research hypothesis (H1), it should be stated that there are grounds to claim that the degree of popularisation and promotion of health by LGUs affecting the improvement of the situation of the elderly is varied. There can be several reasons for this type of distribution. One of them can be the level of debt.

Figure 1 draws attention to the relationship between the level of debt of a given LGU in relation to income from 2017 and the scope of activities aimed at popularising and promoting health. A moderate level of activity is visible regardless of the level of debt. For the χ2 test, due to the appropriate number of intervals, the level of debt was divided into 3 groups, i.e. 1-10%, 11-20%, 21-30%.

DOI: 10.34659/eis.2023.85.2.598

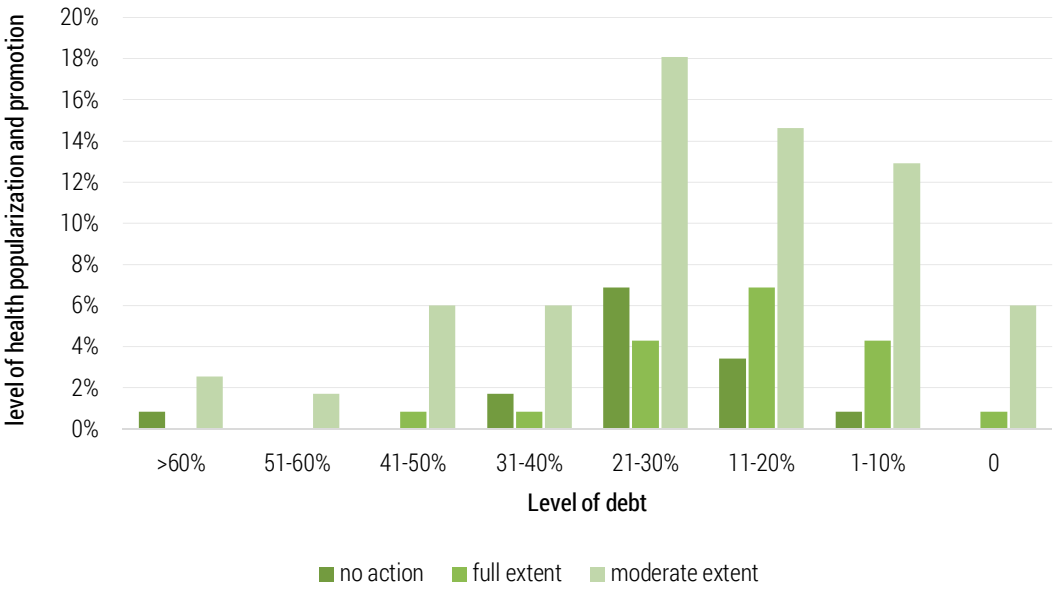

Figure 1. The level of debt versus the level of health popularisation and promotion

Table 4. Results of the χ2 test in the analysis of independence between the level of debt and the degree of health popularisation and promotion

	Ei			Oi		Ei/Oi	
debt level	full range of activities	moderate activities	sum	full range of activities	moderate activities	full range of activities	moderate activities
1-10%	5	15	20	5.1	14.9	99%	100%
11-20%	8	17	25	6.3	18.7	126%	91%
21-30%	5	21	26	6.6	19.4	76%	108%
Sum	18	53	71				

In Table 4, apart from the values necessary to calculate χ2, the share of empirical values in the expected values is also presented. The conditional formatting used allows highlighting the occurred relationships between the entities. The light grey colour indicates too few real observations in the case of LGUs taking the full range of activities and having the level of debt belonging to the group 21-30% (76%). However, too many observations (126%) are in the case of debt at the level of 11-20%.

Because the statistics $\chi2 = 1.1$ is less than the critical value of 5.99 (for significance level $\alpha = 0.05$ and 2 degrees of freedom), the hypothesis about the independence of variables should be confirmed. This means that the level of indebtedness has no impact on undertaking activities in the field of health

DOI: 10.34659/eis.2023.85.2.598

popularisation and promotion. Therefore, the H2 hypothesis should be confirmed as false.

In the next part of the survey, in order to verify the H3 hypothesis, the answer to the question, what problems most often affect the elderly in your commune? Was analysed along with the area's Limited access to sport and recreation infrastructure. Respondents again answered this question on a scale of 0-3, where:

- 0 – no opinion on this topic,
- 1- the phenomenon is not a problem,
- 2 – it is a moderate problem,
- 3 – a serious problem.

The obtained answers indicate that 34.5% of rural communes and 10% of urban-rural have no problem with access to recreational infrastructure, for 35.5% of respondents from rural communes and 11.8% from urban-rural this is a moderate problem, and only for 6.4% from rural and 1.8% from urban-rural is serious. Due to the small percentage of these last answers (Table 5), they were omitted in the $\chi 2$ analysis.

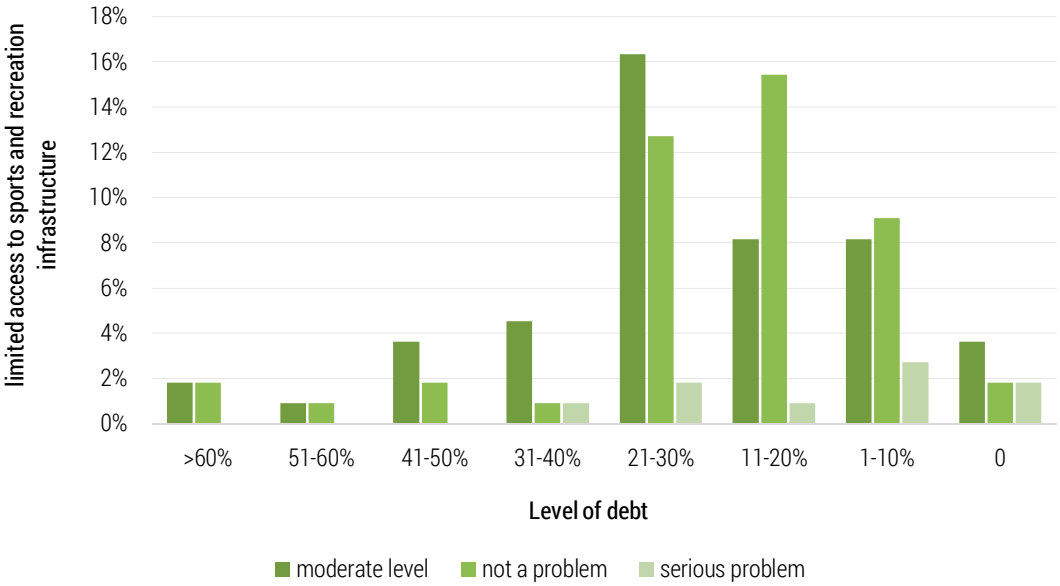

Figure 2. Level of debt and limited access to sports and recreation infrastructure

In Table 5, in addition to theoretical and expected values, the relationships between them were given. The number of LGU observations in which limited access to sports infrastructure is a moderate problem (debt 11-20%) should be 26% higher (74% light grey). Values marked in black indicate that actual observations could be about 20-23% less.

DOI: 10.34659/eis.2023.85.2.598

Table 5. Results of the χ2 test in the analysis of independence between the level of debt and limited access to sports and recreation infrastructure

	Ei			Oi		Ei/Oi	
debt level	moderately affected	not a problem	Sum	moderately affected	not a problem	moderately affected	not a problem
1-10%	9	10	19	8.9	10.1	101%	99%
11-20%	9	17	26	12.2	13.8	74%	123%
21-30%	18	14	32	15.0	17.0	120%	82%
Sum	36	41	77				

Due to the fact that the statistics χ2 = 2.701, so this value is less than the critical value = 5.99 (for significance level α = 0.05 and 2 degrees of freedom), the null hypothesis about the independence of variables should be confirmed. Thus, at the significance level of 0.05, it can be confirmed that the level of debt is not associated with the problem of limited access to sports and recreation infrastructure.

Table 6. Results of the χ2 test in the analysis of independence between limited access to sports and recreation infrastructure and the degree of popularisation and promotion of a healthy lifestyle

	Ei				Oi			Ei/Oi		
infrastructure problem/ promotion a healthy lifestyle	no action	activities to the full extent	moderate activities	Sum	no action	activities to the full extent	moderate activities	no action	activities to the full extent	moderate activities
affect in moderate extent	8	8	34	50	5.7	10.3	34.0	141%	78%	100%
are not a problem	3	12	32	47	5.3	9.7	32.0	56%	124%	100%
Sum	11	20	66	97						

The data in the last part of Table 6 (Ei /Oi) indicate a greater than expected number of actual observations (141%) of LGUs that have a moderate problem with access to infrastructure and, at the same time, do not take measures to promote a healthy lifestyle. On the other hand, there are too few observations in the absence of problems with access to sports and recreation infrastructure (56%).

Statistics χ2 = 3.043, therefore, this value is less than the critical value = 5.99 (for significance level α = 0.05 and 2 degrees of freedom), so the null

DOI: 10.34659/eis.2023.85.2.598

hypothesis on the independence of variables should be confirmed. Thus, at the significance level of 0.05, it can be confirmed that the degree of popularisation and promotion of a healthy lifestyle does not depend on access to sports and recreation infrastructure.

In view of the above calculations, it should be concluded that H3: Access to sports infrastructure affects the level of popularisation and promotion of health is false.

Discussion and conclusions

The process of ageing in rural society and its consequences have been recognised for many years. It should be noted, however, that in many European countries, there is still a period of discussion on this problem and taking strategic decisions regarding the subjective and objective scope of the policy towards the elderly. These decisions are also related to determining the method of financing the assumed policy and setting its priorities.

Undoubtedly, the problem of ageing requires the involvement of many entities, including local government units. Hence the topic of conducting actions to improve the situation of the elderly is justified. This topic is currently due to demographic data confirming the increase in the number of such people in Poland.

The results of empirical research have shown that activities related to the popularisation and promotion of a healthy lifestyle in the vast majority of respondents are moderated and do not depend on the level of debt of LGUs. In promoting a healthy lifestyle, access to sports and recreation infrastructure also plays a role, with which there is no problem, or it is moderate. The conducted analyses indicate that it does not depend on the level of LGU debt. $\chi 2$ analysis showed no relationship between limited access to sports and recreation infrastructure and the degree of popularisation of a healthy lifestyle. The result, however, raises some practical doubt. It seems that one way to encourage the local community to participate in physical activity is to ensure its access to sports and recreation infrastructure.

When answering the question posed in the introduction of the study on undertaking significant activities of local government units promoting a healthy lifestyle, it should be said that it is a moderate assessment of the possibilities of using sports infrastructure and promoting a healthy lifestyle to improve the situation of the elderly.

The assumed goals have been achieved. On the one hand, attention was paid to encouraging a healthy lifestyle, and on the other, to sports and recreation infrastructure. Co-occurrence of both will improve the situation of the elderly in rural and urban-rural communes. In particular, the lack of physical

DOI: 10.34659/eis.2023.85.2.598

activity, which is part of a healthy lifestyle or insufficient amount, can lead to cancer, as noted in the article.

Acknowledgements

The publication was financed from the subsidy granted to the Cracow University of Economics – Project "Support of publishing activity 2023".

The contribution of the authors

Conception, M.M., Ł.P. and P.Z.; literature review, M.M., Ł.P. and P.Z.; acquisition of data, M.M., Ł.P. and P.Z.; analysis and interpretation of data, M.M., Ł.P. and P.Z.

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DOI: 10.34659/eis.2023.85.2.598