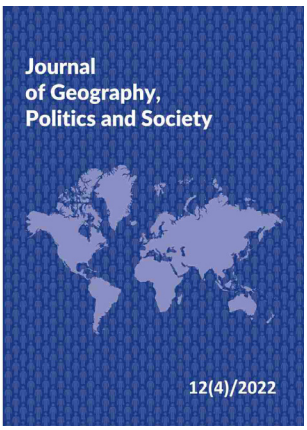

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CHANGES IN THE WAYS OF USING PLOTS IN ALLOTMENT GARDENS IN POLAND. A CASE OF SELECTED GARDENS IN THE ŁÓDŹ VOIVODSHIP

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Abstract
The The article attempts to check whether there is spatial regularity in the relationship between the model of agricultural and productive use of allotment gardens and the leisure and recreational model. The article also presents socio-demographic features of users nowadays defining the use of plots in gardens. The objectives were achieved by means of a direct inventory and a questionnaire survey conducted among users of five gardens: one located in Łódź and four located in the western part of the suburban zone of Łódź. As a result of the analysis, it was found that the farther from the center of Łódź, the less dominant the leisure and recreational model was. In addition, it was found that the users' professional activity and age are the socio-demographic features which today determine the way of using plots in gardens.

Key words
allotment gardens (AG), allotment gardening, use of allotment gardens, landscaping of allotment gardens.

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1. Introduction

The idea of allotment gardens comes from the circle of social activists from the end of the 19th century (Acton, 2010). Although the first gardens in Poland began to be created at the turn of the 19th and 20th centuries, their development on a wider scale took place only after the Second World War (Pawlikowska-Piechotka, 2010).

Allotment gardens perform many functions, having economic, social, cultural, educational, health and environmental benefits (among others, Drescher et al., 2006; Nettle, 2010; Perez-Vazquez et al., 2005). The relationship between an allotment plot and health is becoming an important and increasingly frequently discussed problem. Among others, two functions of gardens are emphasized. The first one is of an economic and social nature. The role of allotment gardens as a place of social activation conducive to the activity of economically inactive people and as a place of recreation and active leisure is emphasized (Duś, 2014; Mokras-Grabowska, 2020; Szkup, Pytel, 2016).

For the poorer and economically inactive people (including pensioners), activities carried out on plots in Family Allotment Gardens[1] are the only form of

[1] Rodzinny Ogród Działkowy (Family Allotment Garden) in Polish is commonly referred to with an acronym ROD. In this article the term allotment garden means a Family Allotment Garden.

active recreation (Matczak, Szkup, 2010; Szkup, 2013; Szkup, Pytel, 2015). In the past, gardens performed a clearly economic function by supplying agricultural produce to the population from the poorest social strata (Moran, 1990; Poniży et al., 2021; Riley, 1979). Over time, the agricultural and productive function of gardens has become much smaller than before. Changes in everyday life caused by the development of civilization (including the deluge of cheap food in hypermarkets) and political transformations in Poland, contributed to the intensification of the process of gradual change in the use of allotment gardens from agricultural and productive use to recreational use. Conducting research in 2008–2011 on a representative sample of 10 Łódź family allotment gardens, R. Szkup (2013) stated that at that time only one third of the plots (36.7%) were used exclusively for agricultural and productive purposes. This is related to the health aspect of the functioning of allotment gardens, including their positive impact on their users' health (Armstrong, 2000; Bell, et al., 2020; Turner et al., 2011; Twiss et al., 2003; van den Berg et al., 2010).

However, it should be borne in mind that the COVID-19 pandemic has changed not only the mental state of the population, but also many of their behaviors (Grabowski et al., 2021; Heitzman, 2020; Lorettu, 2021; Sozański et al., 2021), including spatial ones (Stępień et al., 2021). The models of the use of allotment gardens is no different (Schoen et al., 2021; Szkup, 2020). Therefore, it can be assumed that nowadays the recreational and sports model of the use of allotment gardens will become dominant.

The article attempts to verify whether the form of using plots in family allotment gardens in the era of the COVID-19 pandemic demonstrates spatial regularity. The hypothesis was formulated that the farther from the center a given allotment garden is located, the more important the model of agricultural and productive development of the plot is, and the smaller the recreational and sports model. In addition, the article aims to indicate the scale of such changes and to present the socio-demographic characteristics of users who nowadays decide to use plots in allotment gardens.

Figure 1 shows the location of allotment garden in the context of the division into poviats[2]. As can be seen, the Zacisze allotment garden is located on the outskirts, but still within the administrative boundaries of Łódź (approx. 9 km in a straight line from the center of Łódź). Near the border of Łódź, but already in the Pabianice poviat, there are two allotment gardens: Pod Borem and Kalina (approx. 10 and 13 km). Much farther away are the Żeromski allotment gardens (approx. 25 km) and Wolinka (approx. 39 km).

2. Materials and Methods

The research in all five gardens was carried out during the COVID-19 pandemic, at the turn of August and September in 2020 and in 2021. The main materials were obtained using the survey method (questionnaire interview). Direct inventory of plots in the examined gardens was also conducted.

Fig. 1. Location of the examined allotment gardens in the context of the division into poviats
Source: Own elaboration.

[2] A *powiat* (poviat) is the second-level unit of local government and administration in Poland, equivalent to a county, district or prefecture in other countries (LAU-1).

Due to the fact that there is no database of legal and actual users of allotment gardens in Poland (Moskalonek et al., 2020), the questionnaire survey was not representative. Despite the lack of representativeness, a significant number of questionnaire interviews were conducted – 386 (Tab. 1), i.e. interviews were conducted with nearly half of all users of the surveyed gardens. In addition, more than 90% of all plots in the gardens were inventoried. Since the questionnaire interview was conducted in direct contact with the respondents, despite maintaining social distance, some users refused to participate in the study (in all gardens there were about 10% of such cases – more in 2020 than in 2021). It should also be noted that despite repeated visits to the gardens, about 1/4 of the plots were not used during the research (there were no users on these plots).

The **Zacisze Family Allotment Garden** is located at 17A Kasprowicza Street in Nowosolna, which currently is part of the Łódź-Widzew district. The garden is located in the immediate vicinity of a forest and areas used for agriculture. The Zacisze allotment garden neighbors on several other gardens – the Polanka allotment garden, the Tulipan allotment garden, the Jaśmin allotment garden and the Relaks allotment garden. The garden was created in 1980 and originally had 125 plots. Due to the location of the garden in the vicinity of a now defunct rubbish dump, at the end of the 1990s, a protection zone was designated for sanitary reasons and thus some of the plots in the garden were liquidated. Currently, the Zacisze allotment garden is a small garden in terms of the number of plots, with 76 plots. Although the total area of the garden is 8.44 ha, the area of plots in the garden is only 3.2 ha. The garden is used in 100% by the inhabitants of Łódź.

The **Kalina Family Allotment Garden** is located in the city of Konstantynów Łódzki. It consists of two parts. The first (larger) one is mainly accessible from Lutomierska Street, the other one – from Krzywa Street. The initiative to create a garden arose in 1983, and the construction of the garden took 2 years. The Kalina allotment garden neighbors on two other gardens –the Malwa allotment garden and the Zgoda allotment garden, with which it once shared a connection to the water supply. Currently, the Kalina allotment garden comprises 169 plots. 127 plots are located in the southern part, while in the northern, smaller part – 42 plots. The total area of the garden is 8.22 ha. In the vast majority the garden is used by the inhabitants of Łódź.

The **Pod Borem Family Allotment Garden** is located in the city of Konstantynów Łódzki on Józefów Street. In the immediate vicinity of the garden there are detached houses. The river Ner flows 750 m away. The Pod Borem allotment garden was established in 1980 as the implementation of the application of the NSZZ «Solidarność» trade union submitted to the management of then functioning «Konstilana» wool factory. The «Konstilana» factory acquired an area intended for the garden. At that time, 155 plots with a total area of 8.64 ha were allotted. In 2006, the adjacent Pod Górką allotment garden was incorporated into the garden. Currently, the Pod Borem allotment garden consists of 179 plots. The total area of the garden is 12.20 ha. The garden is mostly used by the inhabitants of Łódź and Konstantynów Łódzki.

The **Żeromski Family Allotment Garden** is located in Łask, in the Kolumna district in Miła and Przedwiośnie streets. The garden complex is bordered only by clusters of detached houses, and there is a large forest complex and Łask-Kolumna railway station nearby. The garden was founded in 1962 on the initiative of local residents who wanted to create a garden to grow their own vegetables and fruits. The garden area was originally a wet wasteland that was drained and reclaimed. Over time, a pond was dug in the garden. Currently, the Żeromski allotment garden has 135 plots with the total area of the garden being 5.77 ha. The garden is mostly used by the inhabitants of Łódź.

The **Wolinka Family Allotment Garden** is located in the town of Zduńska Wola on Lipowa Street. In the vicinity of the Wolinka allotment garden there are detached houses, a city beltway, a combined heat and power plant and a large housing estate. A few hundred meters away there are large industrial plants – Wola and Zwoltex. The planning for the establishment of the Wolinka allotment garden began in 1967, and the garden itself was open to use in 1970. The Wolinka allotment garden was established on the wave of mass creation of allotment gardens in socialist Poland on the initiative of the central authorities, and with the intention to be used by the working class. Trade unions from the Wola plant largely contributed to the creation of the Wolinka allotment garden – it was mainly the employees of this factory who were the first users of plots. Currently, the Wolinka allotment garden has 237 plots, and the total area of the garden amounts to 7.42 ha. The garden is used in over 90% by the inhabitants of Zduńska Wola.

Among the 386 surveyed plot users, there were no people living permanently or having a residence abroad. Over 84% of users were people living in Łódź. Among the respondents, there was a slight predominance of women (51.0%) over men (49.0%).

Table 1. Percentage structure of the surveyed users of the examined allotment gardens.

	Total	Wolinka	Żeromski	Kalina	Pod Borem	Zacisze
Total number of plots	796	237	135	179	169	76
Number of surveyed users	386	63	54	100	100	69
Percentage of plots surveyed	48.5	26.6	40.0	55.9	59.2	90.8
Sex:						
male [%]	49.0	58.7	57.4	38.0	52.0	44.9
female [%]	51.0	41.3	42.6	62.0	48.0	55.1
Age:						
Median age of the respondents [years]	54.4	58.2	62.8	53.5	50.7	51.4
under 40 years old [%]	17.4	12.7	0.0	18.0	26.0	30.4
40-49 years old [%]	17.4	17.5	7.4	25.0	21.0	16.0
50-59 years old [%]	21.2	23.8	22.2	20.0	21.0	18.8
60–69 years old [%]	25.4	20.6	53.7	15.0	19.0	18.8
70–79 years old [%]	16.2	15.9	16.7	22.0	12.0	14.5
80 years old and over [%]	2.4	9.5	0.0	0.0	1.0	1.5
Occupational status:						
unemployed [%]	2.8	7.9	0.0	3.0	0.0	2.9
employed [%]	53.3	42.9	29.6	61.0	71.0	62.3
retired and pensioners [%]	43.9	49.2	70.4	36.0	29.0	34.8
Place of residence:						
Łódź [%]	84.2	0.0	83.3	81.0	51.0	100.0
Other cities of the Łódź agglomeration [%]	15.8	100.0	16.7	19.0	49.0	0.0

Source: own study, based on field research in allotment gardens.

Which in the case of the Łódź Voivodeship is not surprising – the research conducted by the present author in Łódź allotment gardens in 2008–2014 also shows that the sex structure of users of Łódź allotment gardens is very similar to the sex structure of the inhabitants of Łódź, where there is a small surplus of women over men (Szkup, 2013; Szkup, Pytel, 2015). A slight majority of women may also testify to the greater activity of women during the COVID-19 pandemic. On the other hand, the surplus of men was clearly visible among garden users aged 50–79. The allotment garden users' age is related to their professional activity (Szkup, 2013); the dominant groups in the study were professionally active and relatively young users (median age: 54.4 years), who constituted 56.7%, people with vocational education (32.2%), those with a large family (59.1%) and those who defined their financial situation as average (76.4%). The analysis used classification and regression trees (CART) (see: Klusowski, 2020; Steinberg, 2009).

3. Results and Discussion

The role played in human life by family allotment gardens is reflected, among others, in the way of the development and use of the plot itself. The very physiognomy of the plot can tell a lot about its owner. A well-maintained plot, with maximally used and developed space, proves a very strong, emotional relationship between the owner and the used piece of land. Anyone who has had the opportunity to visit an allotment garden can notice that nowadays two types of plots dominate: a typically agricultural and productive plots dominated by fruit and vegetable plantings (sometimes small greenhouses) and plots with well-maintained lawns, with grassy mini football and volleyball fields, which only serve relaxation and sports recreation (Mokras-Grabowska, 2020; Szkup, 2013).

While studying the Łódź family allotment gardens, R. Szkup (2013) distinguished two basic models of plot development:

1. The model of agricultural and productive development of the plot – it concerned plots dominated by the area related to cultivation of land (a garden and vegetable area and an orchard area). In addition to buildings and communication space, there may be residual amounts of wooded areas and poorly invested sports and recreational areas.
2. The model of recreational and sports development of the plot – it concerned plots in which poorly invested sports and recreational space dominates (sports fields, playgrounds for children and grass areas), intended for leisure and recreational sports (volleyball, football, badminton, etc.). In this model, the area related to the cultivation of soil usually does not exceed 15%, and there is often a few percent of a wooded area. In extreme cases, the aforementioned model included plots with a high degree of investment in the form of professionally built swimming pools or recreational ponds.

The research conducted in 2008–2011 by R. Szkup (2013) showed that in the space of Łódź family allotment gardens, the areas associated with quasi-agricultural land use definitely predominated, and in eight out of ten gardens, the areas associated with agricultural and productive use of the plot exceeded 45%.

The inventory of the plot area carried out in five gardens of the Łódź Voivodeship shows that currently as many as four out of five gardens are dominated by poorly invested leisure areas (mainly well-maintained lawns and fields for sports games), which account for over 60% of the area in these gardens (Fig. 2). Only in the Wolinka allotment garden in Zduńska Wola, do agricultural and productive areas slightly dominate, accounting for just over 46%. Agricultural and productive areas (fruit, vegetable and orchard farming) statistically constitute just over 1/4 of the plot area in gardens. The Zacisze allotment garden in Łódź stands out in this respect, in which the agricultural and productive area constitutes only 14.1%. The presented data prove that in the studied gardens, agricultural and production plots are displaced by plots used for leisure and recreational purposes.

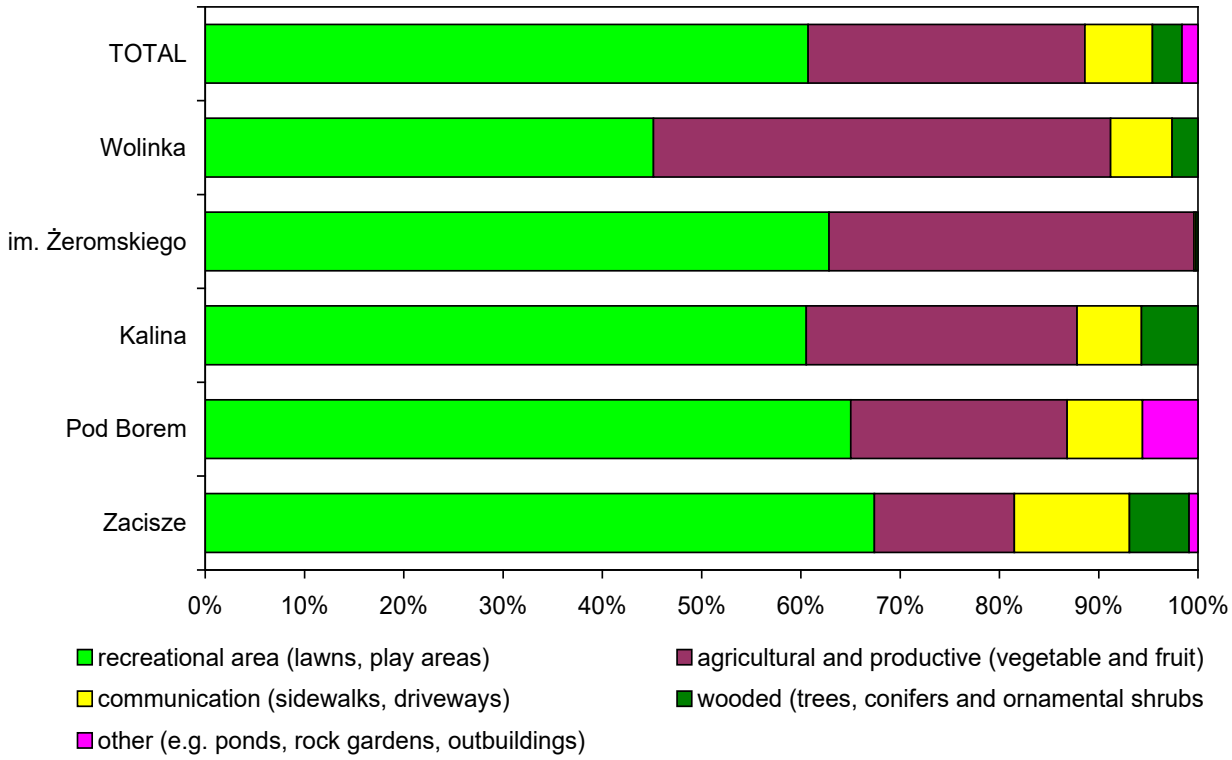

Fig. 2. Structure of plot area use in the examined gardens.
Source: own study, based on field research in allotment gardens.

By comparing the obtained results with the distance of these gardens from the center of Łódź, one can see that with the increase in this distance – the importance of recreational and sports function decreases (Tab. 2). Only in the case of the Żeromski garden, there is a slight disturbance of this regularity (Fig. 2). Table 3 presents the structure of land use in the five studied gardens depending on the socio-demographic characteristics of their users. The CART method showed that the degree of professional activity, age and place of residence of users have the greatest impact on the use of plots.

Table 2. Structure of the use of plots used exclusively for recreational and agricultural purposes.

Alotment garden	Distance from the center of Łódź [km]	Plots used exclusively for recreational purposes [%]	Parcels used exclusively for agricultural-productive purposes [%]
Zacisze (Łódź)	9	61.2	12.3
Pod Borem (Konstantynów Łódzki)	10	59.8	20.1
Kalina (Konstantynów Łódzki)	13	55.2	24.1
Żeromski (Łask-Kolumna)	25	57.1	32.7
Wolinka (Zduńska Wola)	39	39.8	41.5
Total		56.7	23.5

Source: own study, based on field research in allotment gardens.

Table 3. Structure of plot area use depending on socio-demographic characteristics of users.

	Lot Size:				
	recreational area (lawns, playgrounds) [%]	agricultural-productive (vegetable and fruit farming) [%]	Communication (sidewalks, driveways) [%]	wooded (trees, conifers and ornamental shrubs) [%]	other (e.g. ponds, rock gardens, outbuildings) [%]
male	58.2	29.6	7.2	3.1	1.9
female	63.2	26.3	6.3	2.9	1.3
under 40 years old	63.4	21.5	8.0	4.3	2.8
40-49 years old	62.0	22.1	8.7	4.0	3.2
50-59 years old	62.6	27.5	6.8	1.8	1.3
60–69 years old	58.2	31.5	5.7	3.7	0.9
70–79 years old	56.2	35.6	4.4	3.4	0.4
80 years old and over	42.1	50.8	4.0	3.1	0.0
higher education	62.0	23.6	8.7	3.9	1.8
secondary education	65.3	26.4	5.0	1.8	1.5
vocational education	55.8	33.8	6.3	2.6	1,5
primary education	59.5	25.2	8.3	5.4	1.6
retired and pensioners	58.7	32.1	5.4	3.2	0.6
employed	61.9	25.3	7.7	2.7	2.4
unemployed	73.1	16.8	5.1	5.0	0.0
unmarried person	69.4	19.5	6.6	4.0	0.5
unmarried person with a child	51.3	43.7	5.0	0.0	0.0
married person with no children	63.1	22.1	8.8	3.5	2.5
married person with children	57.9	32.1	5.9	2.6	1.5
financial situation better than average	56.9	31.7	7.2	3.2	1.0
average financial situation	62.1	27.0	6.5	2.9	1.5
financial situation worse than average	54.4	29.1	8.9	3.2	4.4
Łódź	62.1	25.6	7.2	3,5	1.6
other cities of the Łódź agglomeration	58.4	31.9	5.9	2,2	1.6

Source: own study, based on field research in allotment gardens.

Despite the fact that in the studied gardens, leisure area definitely displaces agricultural-productive area, the latter is most intensively cultivated by retired persons and pensioners (32.1%). Leisure and recreational areas are developed and used more often by unemployed (73.1%) and working persons (61.9%). The use of plots in the examined gardens is significantly influenced by the users' age. The conducted research shows that the development of plots in a manner enabling the cultivation of land is the domain of mainly older people (over sixty years of age). Elderly persons very often come from rural areas – they emigrated to the city in times of industrial prosperity. However, they retained the habits of their youth, including their love for cultivation. On the opposite pole there are young people who treat a plot in an allotment garden mainly as a place of recreation unrelated to farming. The conducted research clearly shows that with the age of the plot user, the share of agricultural and productive area increases, and the share of leisure and recreational area decreases.

The collected material also indicates that agricultural-productive areas are less frequently developed and used by inhabitants of Łódź (25.6%) than by inhabitants of cities of the Łódź agglomeration (31.9%). The manner of development and use of plots in the analyzed gardens is much less differentiated by such socio-demographic features as their users' age, education, family situation or financial status (Tab. 2). The seasonality and frequency of stay on the used plot also testify to the ways of using the gardens. «The more often and the longer a person stays in the garden, the greater the role it plays in his life» (Szkup, 2013, p. 178). The holiday period was the time of the most intensive use of the examined allotment gardens; intensive use began at the end of April and ended in mid-September (Fig. 3). In the peak months – in July and August ––users stayed on their plots on average for about 18 days a month (in June – 17 days).

The most intensively used gardens in the studied period were the Żeromski allotment garden in Łask-Kolumn and the Wolinka allotment garden in Zduńska Wola. The garden with the smallest period of use was the Zacisze allotment garden in Łódź – in this garden the use was maintained at a maximum of 12–13 days in the summer months. This may be explained by the peripheral location of the garden in relation to the large housing estates in Łódź and the fact that the garden is located near a defunct and reclaimed landfill site, which may result in its less intensive use.

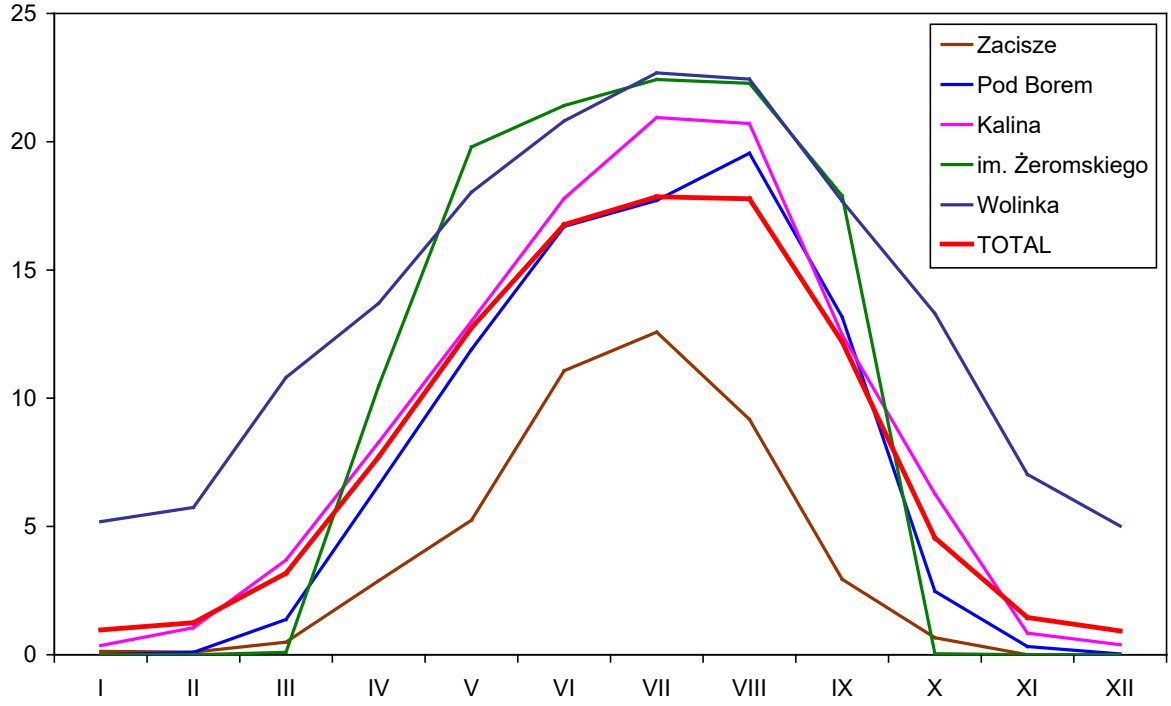

Fig. 3. Seasonality of use of the surveyed gardens (number of days per month).
Source: own study, based on field research in allotment gardens.

4. Conclusions

The analysis of the collected research material indicates that during the COVID-19 pandemic the model of recreational and recreational use of plots dominated in the Łódź agglomeration. It can be clearly seen that the further away from the center of Łódź, the more the importance of this model decreases in favor of the agricultural and productive

use model. However, due to the impact of factors of a local nature, this is not unambiguously clear.

The described diversity can be related to the regularity of a greater importance of the leisure and recreational model in large cities and their immediate vicinity. This regularity is even more pronounced during the pandemic. The users' working status, age and place of residence have the greatest impact on the use of plots.

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