

PAPERS/RAZPRAVE

MAIN GEOGRAPHICAL CHARACTERISTICS OF COMPETITIVE SPORTS IN SLOVENIA

TEMELJNE GEOGRAFSKE ZNAČILNOSTI TEKMOVALNEGA ŠPORTA V SLOVENIJI

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ABSTRACT

Main geographical characteristics of competitive sports in Slovenia

The geographical aspects of sport are rarely addressed, even though sport is an important element of the landscape and society. The aim of this research was to analyze the spatial distribution of competitive sport in Slovenia. This was done by analyzing registered athletes by statistical regions and municipalities, which involved the use of GIS and quantitative methods. We found that Slovenia is a relatively diverse country from a sporting-spatial perspective. Among statistical regions, Upper Carniola in the northwest has the highest number of registered athletes in relation to the population (3.7%), while Southeast Slovenia has the lowest (2.1%). Less than a third of sports federations show a clustered distribution of registered athletes, while municipalities with a higher degree of centrality of their center have more registered athletes per capita and a higher diversity of sectoral sports associations. The study contributes to the knowledge of the socio-cultural diversity of the country and raises a number of questions about the determinants of the distribution of sports disciplines.

KEY WORDS

sports geography, society, registered athlete, geographical information system, spatial analysis, Slovenia

IZVLEČEK***Temeljne geografske značilnosti tekmovalnega športa v Sloveniji***

Geografski vidiki športa so redko obravnavani, čeprav je šport pomembna prvina pokrajine in ima velik družbeni pomen. Namen raziskave je bil analizirati prostorsko razporeditev tekmovalnega športa v Sloveniji. To smo storili z analizo registriranih športnikov po statističnih regijah in občinah, ki je vključevala uporabo GIS-ov in kvantitativne metode. Ugotovili smo, da je Slovenija s prostorsko-športnega vidika razmeroma raznolika država. Med statističnimi regijami ima največ registriranih športnikov glede na število prebivalcev gorenjska (3,7 %), najmanj pa jugovzhodna Slovenija (2,1 %). Slaba tretjina športnih zvez kaže gručasto razporeditev registriranih športnikov, občine z višjo stopnjo centralnosti svojega središča pa imajo več registriranih športnikov na prebivalca in večjo raznolikost športnih zvez. Raziskava prispeva k poznavanju družbeno-kulturne raznolikosti države in odpira številna vprašanja o dejavnikih razporeditve športnih panog.

KLJUČNE BESEDE

geografija športa, društvo, registrirani športnik, geografski informacijski sistem, prostorska analiza, Slovenija

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1 Introduction

Sports and recreation have many significant benefits for people and society at large. This is true for Slovenia as well: many authors include a connection to nature, a rich network of social clubs, and the popularity of outdoor recreation, especially hiking and gardening, among the important cultural features of Slovenian people (Urbanc, Šmid Hribar, and Kumer 2020). It is therefore not surprising that membership in sports clubs and societies combining both amateur and competitive sports is very high (Šugman et al. 2003), and the widespread nature of social clubs forms the foundation for the sports model outside the school system (Kolar, Jurak, and Kovač 2010; Šugman 2016). Slovenians rank among the top Europeans in the frequency of participation in sports or physical activities (European ... 2017), and the country has been recognized as being highly developed in sports according to a number of indicators (Horvat and Mason 2022); sports constitutes an important element of the Slovenian national identity (Kotnik 2009; Topič and Coakley 2010). This raises the question whether participation in sports is a nationwide phenomenon or whether sports are more developed in some areas than in others. The same question can be extended to individual sports disciplines.

Until a few decades ago, sports was an overlooked research area in geography despite its significant impact on the economy and society at large and its indisputable ties to different spatial elements (Bale 2003). Nevertheless, there has been a recent increased interest in the geographical aspect of sports. The book *Sports Geography* is regarded as the milestone work on sports geography or the geography of sports (Bale 2003); it addresses the connection between sports, space, location, and landscape. A number of articles highlight how sports is connected to various as of yet unexplored aspects and call for interdisciplinary studies, for example its connection to tourism (Higham and Hinch 2006), health, recreation, and physical activity (Andrews 2016), urban geography (Koch 2018), and critical geography (Koch 2016). A number of studies have examined the distribution of sports infrastructure (Hoekman, Breedveld, and Kraaykamp 2015; Asefi and Ghanbarpour Nosrati 2020; Wang, Li, and Cheng 2023), the impact large sporting events have on the environment in space (Li and Luk 2011), the relationship between sports and spatial inequality (Rosso 2008; Tiran 2024), while some studies address the opportunities and pitfalls connected to Big Data (Tian 2018). In addition to being studied, sports geography is slowly being incorporated into teaching as well (Hall and Lin 2023; Kohe and Wise 2023).

The most relevant studies for this article are those that examine sports through the various spatial differences and factors. One study has determined, for example, that people in the north and west of Europe more often participate in sports than people in the south and east of Europe (Lera-López and Marco 2017), while larger cities are generally equipped with more sports infrastructure (Kozma et al. 2022). Various factors have been found to determine the prevalence of individual disciplines, especially population density (Rossing et al. 2016; Farah et al. 2018), and another study has concluded that local clubs are very important for developing sporting talent (Rossing et al. 2016). What is more, even political decisions can affect the spatial distribution of sports disciplines, as was the case with the so-called Portorož Decisions, which had a decisive impact on how sports were organized in Slovenia at the local and regional level (Šugman 1976).

Sports geography as the subject of this study is a completely undeveloped and marginalized branch of geography in Slovenia. *Šport* magazine, the central scientific journal for the theoretical and practical questions of sports in the country, has featured only a handful of studies with a geographical aspect; one rare case studied athlete relocation (Gobec, Zupančič, and Bon 2016). The geographical dimension has been absent even in articles providing an overview of individual sports disciplines (for example, Šimenko 2014), while some have offered regional overviews of sports development (for example, Pavlin 2006). Sports infrastructure has received some attention in relation to the geographical aspect; the spatial distribution of indoor sports facilities has been found to have suitable accessibility, with significant differences throughout the country (Starček and Petrovič 2013; Cigale et al. 2024). Some studies have researched the geography of leisure time recreational activities, providing an overview of the spatial distribution of ski slopes, hiking destinations, and natural bodies of water suitable for swimming (for example, Jeršič 1998).

So far, no study has examined the geographical diversity of Slovenia in terms of how its sports are organized and how many people participate in them; only a few partial studies on the subject have been done. The existence of important differences, which merit a more detailed examination, can be concluded from several health indicators (Nacionalni ... 2024) and survey research findings (Djomba 2012; Pori, Pori, and Sila 2013; Hafner Fink et al. 2022). The Slovenian Public Opinion survey, which has been measuring sports and recreational participation since 1973 and includes the basic geographical variables (region, settlement type), has determined that the most physically active inhabitants in Slovenia come from economically more developed regions in central and western Slovenia and suburban areas (Doupona Topič 2010; Sila 2010). These kinds of regional differences have been further confirmed by the latest survey research on living conditions, which ranked people from Upper Carniola and Carinthia as the most active in sports, while people in the Mura statistical region were the least active (Statistični ... 2022). Even less is known about the prevalence and popularity of individual sports disciplines and recreational activities. In terms of settlement type, Alpine skiing stands out as being significantly more popular in suburban environments, which the authors attribute to the improved accessibility to ski slopes both in terms of vicinity and affluence (Pori, Pori, and Sila 2013). The social aspects of participating in sports (for example, differences by gender, age, or education) in general as well as across individual disciplines have been significantly more studied than the geographical aspects, and recreational sports have been examined more than competitive sports.

The purpose of this research is to analyze the spatial distribution of competitive sports in Slovenia by its national sports federations (NSFs), thereby examining the diversity of sports in Slovenia. The main research question is whether significant differences occur at the state level in terms of how prevalent sports are as a whole and as individual sports disciplines.

2 Terminology, research area, data, methodology

2.1 Definition of key terms

This article uses the following key terms: registered athlete, sports society, and national sports federation. For the correct understanding of this article, we have included the definitions of these key terms as defined by the Olympic Committee of Slovenia, Association of Sports Federations (OCS-ASF) (Pogoj ... 2020).

A registered athlete means an individual who *»is registered as an athlete if they have reached the age of 12, is a member of a sports society that is a member of an NSF or SFDS-SPC [Sports Federation for the Disabled of Slovenia – Slovenian Paralympic Committee], where their participation in competitions under an official competition system has been confirmed by the OCS-ASF, and have been entered in the records of registered and categorized athletes«* as well as *»individuals who are under 12 years old but not younger than 10 years old who are registered for Olympic disciplines of individual sports in which athletes under 18 years are eligible to participate when competing in World Championships in the senior category«* (Pogoj ... 2020). The term registered athlete is gender neutral in this article.

Sports society means a *»society registered in accordance with the Societies Act and has in its constituent act defined sports as its main activity, and it is a member of a NSF and carries out physical education programs for children and youth oriented to quality and elite sports, quality or elite sports programs«* (Pogoj ... 2020).

Since a sports society can be a member of several different NSFs, we recorded such a society several times in our records for the purposes of this research: a note was added to the name of the society about the NSFs they are a member of. For clarity purposes, this kind of unit, which is actually a part of one sports society, was still recorded as a *sports society*. This research includes only those societies that had at least one registered athlete on the data validity date.

National Sports Federation (abbreviated to NSF or association) means an »association of societies registered in accordance with the Societies Act, and it is an NSF member of OCS-ASF or appropriate ISF [international sports federation]. The NSF is the holder of the official competition systems in the Republic of Slovenia« (Pogoji ... 2020).

2.2 Research area and data

The analysis of registered athletes was applied to the entire territory of the Republic of Slovenia. The data was gathered from various sources; the number of registered athletes and data about sports societies were acquired from the Olympic Committee of Slovenia and are valid as at 31 December 2023. The administrative units and data regarding the address coordinates were acquired from the Surveying and Mapping Authority of the Republic of Slovenia, and the population data for the second half of 2023 was attained from the Statistical Office of the Republic of Slovenia.

2.3 Placing data on registered athletes in space

The anonymized data about the registered athletes along with the addresses of the sports societies and the accompanying associations were interconnected in the MS Excel program. In the following step, we geocoded (Singh 2017) the addresses of the sports societies with registered athletes to place them on the map. The location of a few sports societies had to be determined by hand. After establishing this database, we merged the various data according to administrative units.

2.4 Distribution analysis of the registered athletes

The distribution analysis of the registered athletes was completed in several sections. At the state level, we calculated: the total number of registered athletes, the number of societies with registered athletes, the number of different NSFs, and the share of societies and registered athletes per NSF. At the level of statistical regions and municipalities, we calculated the ratio of registered athletes to the number of inhabitants; this way, the representation of individual NSFs is more comparable between regions or municipalities.

We analyzed the **spatial autocorrelation** (Haining 2001) of the ratio between the number of registered athletes and the number of inhabitants of a municipality for each NSF as well as the total sum of all NSFs. The global Moran's index was used for the calculation (Moran 1948). This test is used to determine the spatial correlation of the variable. The calculated Moran's index can range between -1 and $+1$. Values around 0 indicate a random spatial distribution of the high and low values. Values nearing 1 point to a positive spatial autocorrelation (i. e., clustered), while values nearing -1 indicate a negative spatial autocorrelation (i. e., dispersed; Travnikar and Juvančič 2018). The ESRI ArcGIS Pro 3.1.4 program was used for the calculations. The inverse distance for the spatial relationship and the Euclidean distance for the distance calculation were selected in the settings (Internet 1).

We also calculated the **entropy** for each municipality (Kononenko 2005; Grčić, Sibinović, and Ratkaj 2024) for the ratio between the number of registered athletes and the population size. This data revealed how many NSFs were present in an individual municipality. Entropy estimates the difficulty level of the classification problem and represents the expected amount of information necessary for classifying one example (Kononenko 2005). A high entropy indicates a very unpredictable system that requires more information to describe its outcomes. Inversely, a low entropy means the system is more predictable and less information is necessary for coding the results of the information. In our case, a high entropy means the number of registered athletes per NSF within a municipality is equally distributed across a large number of different NSFs. Inversely, a lower entropy means fewer NSFs in a municipality, in which most of the registered athletes may only be registered in a single NSF (further reducing entropy).

The share of registered athletes and the number of NSFs were compared to the level of centrality of the municipal center, also taking into account settlement clusters if they were in the same municipality (Nared et al. 2017).

A further analysis entailed calculating the **correlation** between the population size and the number of registered athletes and between the population size and the entropy of registered athletes per municipality. The correlation was also examined for individual NSFs in order to gain further insight into the distribution of the registered athletes, like the distribution analysis of the most popular NSFs at the municipal level (in this case, only those municipalities where an NSF is present were taken into account in order to avoid a large number of missing values; this is specifically noted in the results). The Spearman correlation coefficient was used, as most of the variables were not normally distributed.

3 Results

3.1 Basic data on the registered athletes

In late 2023, there were 2,037 sports societies in Slovenia with at least one registered athlete. Some societies were members of several NSFs (for example, the Jesenice Sports Society is a member of eight

Table 1: NSFs with the most registered athletes (note: this list features the 20 largest NSFs according to the number of registered athletes, constituting 85.9% of all registered athletes).

Sports Federation	Number of registered athletes	Share (%) of all registered athletes	Number of sports societies	Number of statistical regions in which the NSF societies operate	Number of municipalities in which the NSF societies operate
Football	15,281	23.9	255	12	151
Basketball	7,719	12.1	111	12	71
Volleyball	5,710	8.9	86	10	56
Handball	4,092	6.4	71	12	52
Athletics	3,703	5.8	66	12	50
Mountaineering	2,145	3.4	107	11	73
Skiing	2,115	3.3	98	11	55
Dancing	1,872	2.9	54	11	26
Swimming	1,496	2.3	30	11	18
Cycling	1,485	2.3	75	12	49
Judo	1,478	2.3	57	11	37
Gymnastics	1,377	2.2	44	10	23
Shooting	1,180	1.8	75	12	60
Tennis	864	1.4	59	11	36
Chess	822	1.3	53	12	46
Nine-pin bowling	730	1.1	54	12	46
Taekwondo	718	1.1	25	6	16
Kayaking	701	1.1	16	8	11
Hockey	695	1.1	9	4	6
Karate	644	1.0	63	12	42

Figure 1: Number of registered athletes (by sports society). ► page 15

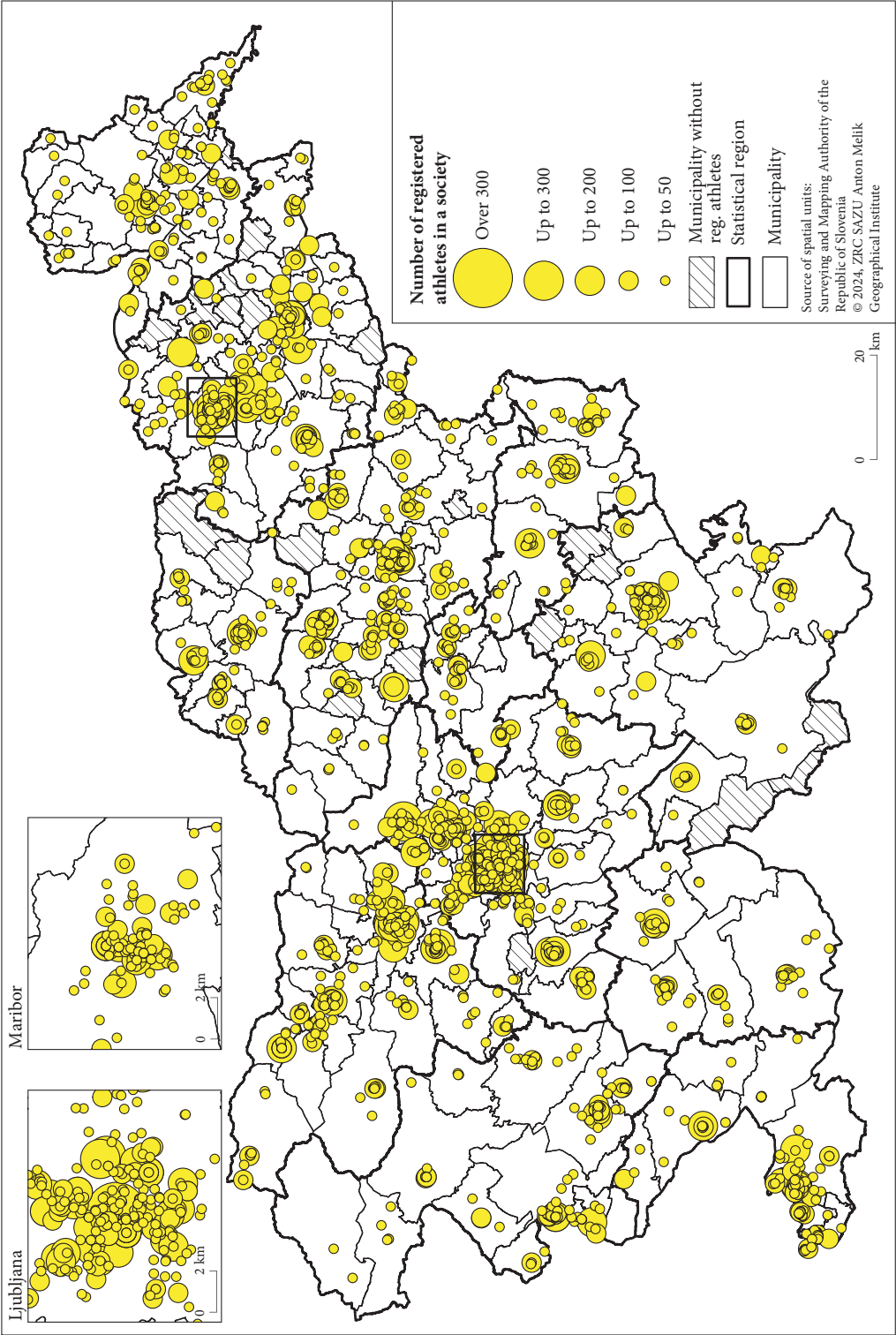


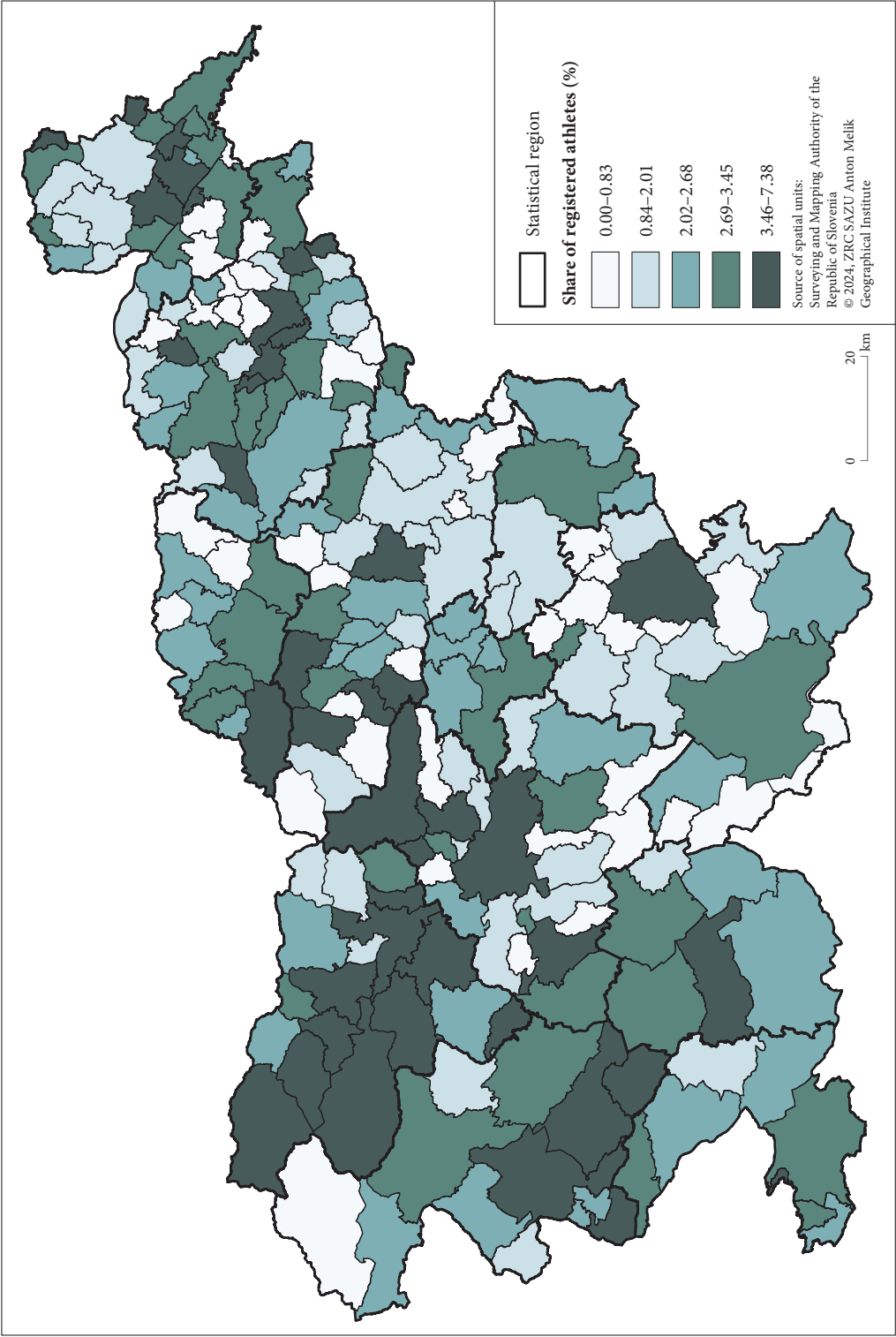
Table 2: Number of registered athletes in relation to the population size by statistical region.

Statistical region	Number of registered athletes	Number of inhabitants	Number of registered athletes in relation to the number of inhabitants (%)
Upper Carniola (<i>Gorenjska</i>)	7,732	209,324	3.7
Central Slovenia (<i>Osrednjeslovenska</i>)	19,278	564,297	3.4
Gorizia (<i>Goriška</i>)	3,714	118,361	3.1
Mura (<i>Pomurska</i>)	3,438	113,962	3.0
Coastal-Karst (<i>Obalno-Kraška</i>)	3,473	118,807	2.9
Drava (<i>Podravska</i>)	9,721	329,753	2.9
Carinthia (<i>Koroška</i>)	1,952	70,674	2.8
Littoral-Inner Carniola (<i>Primorsko-Notranjska</i>)	1,524	53,959	2.8
Savinja (<i>Savinjska</i>)	6,788	261,137	2.6
Central Sava (<i>Zasavska</i>)	1,360	57,283	2.4
Lower Sava (<i>Posavska</i>)	1,680	75,974	2.2
Southeast Slovenia (<i>Jugovzhodna Slovenija</i>)	3,163	147,406	2.1
Slovenia	63,823	2,120,937	3.0

Table 3: Average share of registered athletes by the level of centrality of the municipal center (Nared et al. 2017).

Degree of centrality	Share (%)
1. National center of international importance	3.90
2. Center of national importance	3.79
3. Center of regional importance	3.51
4. Center of inter-municipal importance	2.78
5. Center of local importance	2.41
6. Center of rural importance	2.12

Figure 2: Ratio between the number of registered athletes and the number of inhabitants in a municipality. The figure shows the five quantiles. ► page 17



different NSFs), which meant this research examined a total of 2,108 sports societies as defined in this study (for definition, see Chapter 2.1; Figure 1). The Olympic Committee database lists 63 NSFs. In total, there were 63,823 registered athletes in the societies, which makes up 3.0% of the Slovenian population.

Most of the sports societies and registered athletes fall under the Football Association (12.1% of societies and 23.9% of all registered athletes), followed by the Basketball Association (Table 1).

At the level of statistical regions (Table 2), Central Slovenia has the largest number of registered athletes (19,278). In terms of population, the statistical region most developed in sports according to this indicator is Upper Carniola in the northwest (3.7%), while the two statistical regions with the most underdeveloped sports are in the southeast, Lower Sava (2.2%) and Southeast Slovenia (2.1%). The latter also has the largest share of municipalities without a registered athlete.

At the municipal level, the most athletes are registered in Ljubljana (12,180), followed by Maribor (3,854), Kranj (2,605), Celje (1,919), Domžale (1,801), and Koper (1,626). 21 municipalities have no registered athletes, as they are very sparsely populated. Even when weighting the data by the number of inhabitants (Figure 2), there is a correlation with the level of centrality of the municipal center (Table 3; Figure 7). All city municipalities have above-average shares of registered athletes, except Velenje and Krško (2.7% each). Of the most populated municipalities, the highest share of registered athletes is in Murska Sobota (5.3%), Domžale, Ptuj (4.8% each), Kranj (4.6%), Škofja Loka and Vrhnika (4.3%), Ajdovščina (4.2%), Ljubljana (4.1%), and Radovljica (4.0%). Some of the smaller municipalities also rank at the top of this list, such as Vransko (7.4%), Ankaran and Starše (5.9% each), and Veržej (5.7%), which only have a few registered sports disciplines, but these are very popular (for example, football). Municipalities with a below-average share of registered athletes are mostly located in the hinterland of larger cities with a low level of centrality of the municipal center. Among the municipalities with a 3rd level of centrality, Brežice (2.2%) and Trbovlje (2.0%) stand out negatively, while among the municipalities with 4th level of centrality, Metlika (1.6%) and Muta (0.7%), which are smaller municipalities in this group, stand out negatively.

The spatial distribution in Slovenia was discovered to not be completely random, which is indicated by the spatial autocorrelation of the ratio between the number of registered athletes and the number of inhabitants, which indicated a clustered pattern (Moran's index: 0.161; z-value: 3.769; p-value: < 0.001).

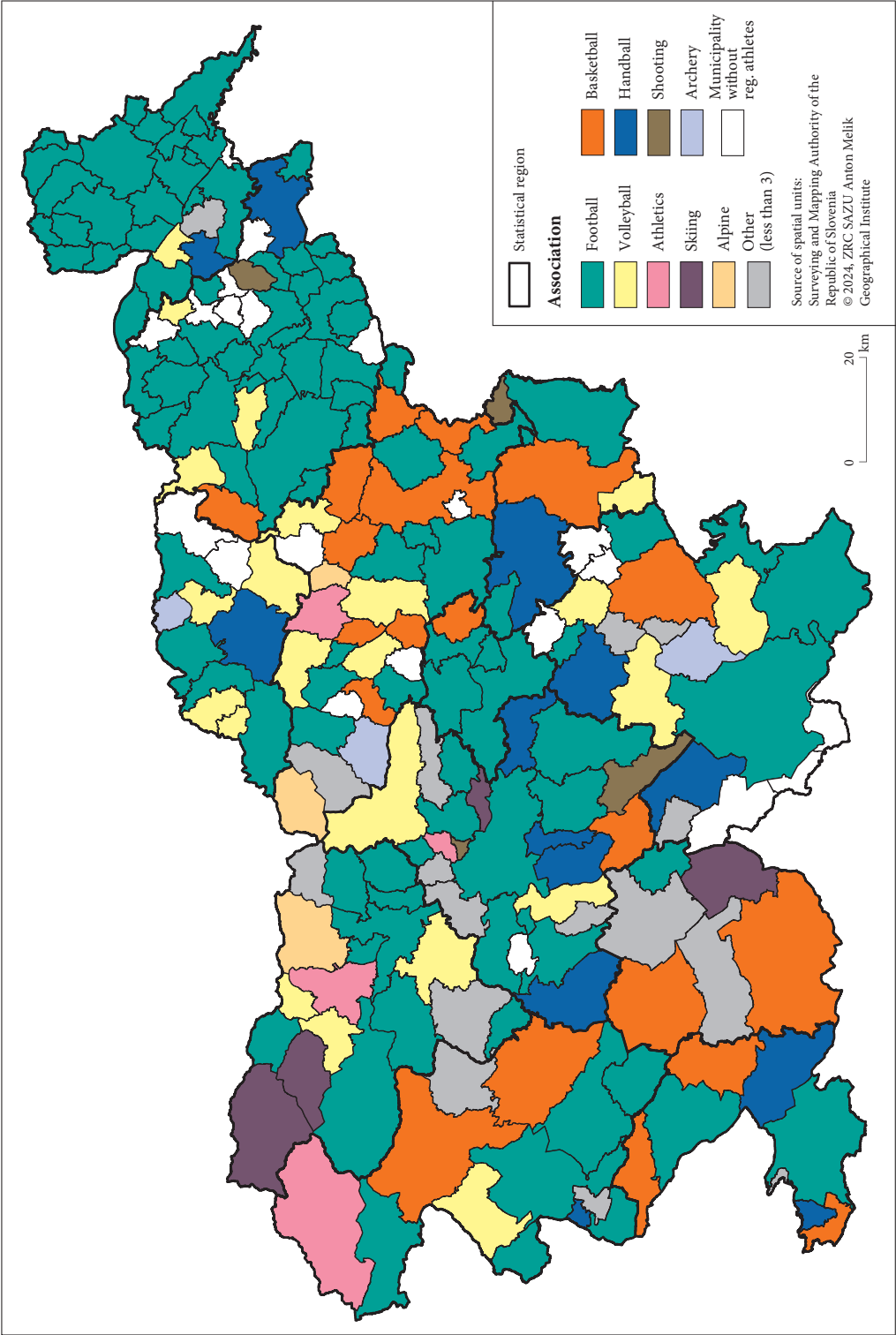
3.2 Spatial distribution of registered athletes by NSF

At the regional level, football is the most practiced sports discipline in 11 out of 12 statistical regions; it is especially prevalent in the Mura statistical region to the far east of the country, where over half of the registered athletes are footballers (52.4%). The only statistical region in which football is not the most popular sport is Littoral-Inner Carniola in the southwest. Football is in third place there, preceded by basketball and nine-pin bowling.

At the municipal level, football is the most widely represented sport in the majority of municipalities (in 102), especially in northeastern Slovenia, followed by volleyball (22), basketball (20), and handball (13). The other NSFs have the largest number of registered athletes in four municipalities or fewer (Figure 3). Football societies are present in over two thirds of the municipalities (151 out of 212).

Figure 3: NSFs with the most members by municipality according to the number of registered athletes.

► page 19



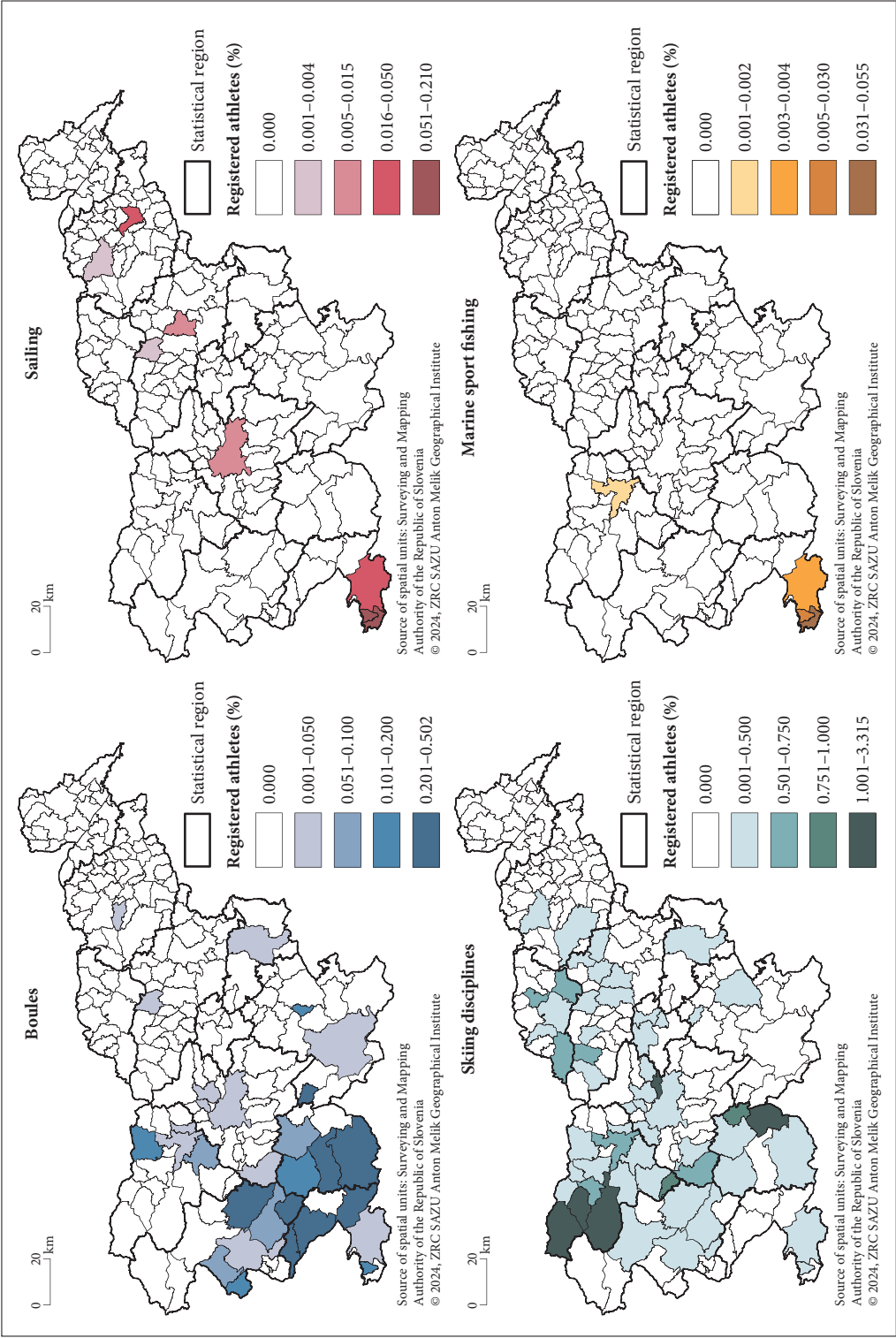
In order to analyze the spatial distribution pattern of registered athletes by individual disciplines and by municipalities, we calculated Moran's index of spatial autocorrelation for the ratio between the number of registered athletes and the number of inhabitants. It was determined that just under a third of the NSFs have a clustered distribution (20 associations; of those, 17 have $p < 0.05$ and a z-value of > 1.96), while the rest have random distributions (Table 4). None of the sports disciplines indicated a statistically significant dispersed distribution.

*Table 4: Distribution of individual NSFs in Slovenia according to the calculated Moran's index. Statistically significant cluster distributions of the number of registered athletes in relation to the number of inhabitants are marked in bold, associations that have a $p < 0.05$ are marked with *.*

Name of association	Moran's index	Z-value	P-value
Sailing*	0.662	21.773	< 0.001
Marine sports fishing*	0.600	22.605	< 0.001
Skiing*	0.534	13.975	< 0.001
Boules*	0.467	11.428	< 0.001
Rowing*	0.381	10.628	< 0.001
Football*	0.289	6.759	< 0.001
Alpine (mountaineering)*	0.172	4.138	< 0.001
Roller-skating sports*	0.153	6.095	< 0.001
Cycling*	0.135	3.274	0.001
Hockey*	0.134	5.425	< 0.001
Basketball*	0.110	2.738	0.006
Automotive sports*	0.108	2.868	0.004
Nine-pin bowling*	0.108	2.938	0.003
Ice skating sports*	0.107	5.356	< 0.001
Athletics*	0.086	2.087	0.037
Karate	0.073	1.852	0.064
Volleyball	0.072	1.765	0.077
Lawn hockey*	0.067	2.516	0.012
Floorball*	0.064	2.049	0.040
Baseball and softball*	0.024	2.009	0.045

Associations with a random distribution: American football, motor racing, badminton, billiards, boxing, bowling, cheer, curling, gymnastics, golf, disabled-Paralympic, judo, jiu-jitsu, kayaking, ice bowling, kickboxing, equestrian, aviation, archery, table tennis, Olympic weightlifting, orientation, darts, swimming, dancing, diving, powerlifting, fishing, wrestling, handball, roller skating, rugby, fencing, sledding, squash, shooting, surf and sup, chess, Thai boxing, taekwondo, tennis, triathlon, water polo

Figure 4: Number of athletes in NSFs with the most clustered distribution in relation to the number of inhabitants in the municipality. ► page 21



The highest Moran's indexes and corresponding most clustered spatial distributions were indicated for sailing, marine sports fishing, skiing disciplines, and boules. The first two correlated predominantly to municipalities with sufficiently large bodies of water (the same goes for rowing, which has the fifth highest Moran's index), while skiing disciplines are tied to mountains and hills in Alpine and Dinaric regions. Boules are present mostly in the Mediterranean areas in the southwest (Figure 4).

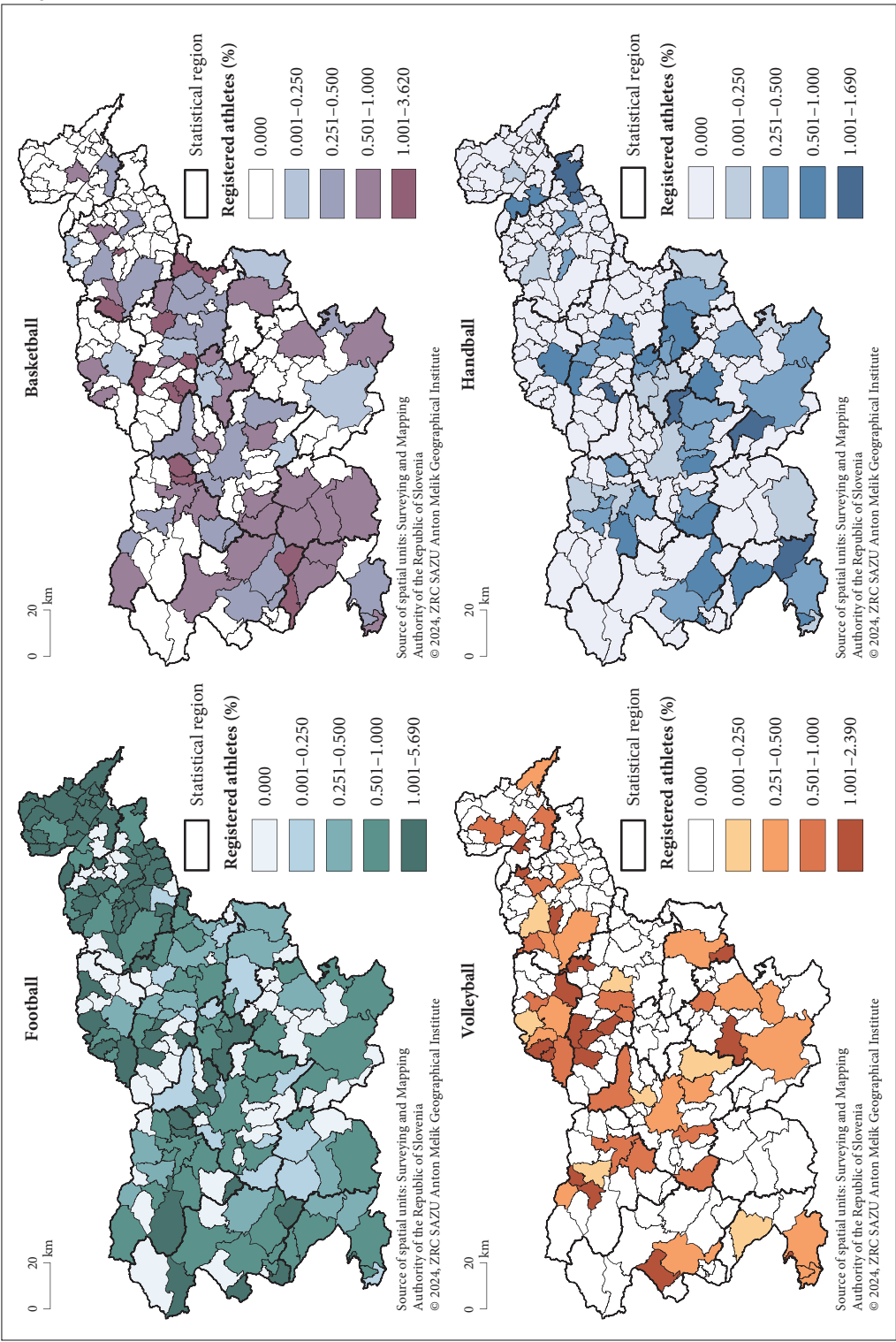
Some of the larger NSFs with a cluster distribution include football, basketball, and volleyball (the latter with somewhat less certainty, as $p = 0.077$). The maps (Figure 5) reveal that they do not often overlap: football is more prevalent in the northeast, basketball in the southwest and in the east, and volleyball in the north. Handball, the fourth most popular sport in Slovenia (Table 1), exhibits a random distribution, but it is noticeably more present in southeastern Slovenia, where the share of athletes is similar to those in football. The calculated Spearman coefficient has confirmed these findings, as the largest NSFs were often negatively linked (Table 5).

An interesting spatial distribution was also identified for some disciplines that do not have an (expressly) cluster distribution but appear only in individual statistical regions or municipalities. One example is lawn hockey, which is present only in the far northeast of the country with three societies. A similar situation was identified for wrestling, which is one of the most underdeveloped Olympic disciplines in Slovenia; it is almost exclusively present in eastern Slovenia with 93.3% of all registered wrestlers (most martial arts are more prevalent than the average in this part of country in general). Quite a few other sports disciplines express a more local or regional character, however, their elucidation would extend beyond the scope of this article.

Table 5: Spearman coefficient of the correlation between the most popular team sports. Each row only includes municipalities with at least one registered athlete in the association in the row. Statistically significant correlations ($p < 0.05$) are marked in bold.

	Football	Volleyball	Basketball	Handball	Municipalities with at least one member
Handball	-0.223	-0.281	-0.384		Handball associations (N = 52)
Basketball	0.115	-0.269		-0.240	Basketball associations (N = 71)
Volleyball	-0.167		-0.543	-0.479	Volleyball associations (N = 56)
Football		-0.181	-0.360	-0.368	Football associations (N = 151)

Figure 5: Number of registered athletes in the most popular team sports by the number of inhabitants.



3.3 Spatial diversity of sports disciplines

All 12 statistical regions have societies that are members of nine NSFs: athletics, karate, boules, cycling, basketball, football, handball, shooting, and chess (Table 1). The Central Slovenia statistical region has the most registered athletes in about three fifths of sports disciplines (37 out of 63). Of the 63 NSFs, this region has 57 present NSFs, followed by a similarly high number in Upper Carniola (50), Drava (47), and Savinja statistical regions (45); the number is relatively high in the Coastal-Karst statistical region (40), especially considering its relatively small population size. At the municipal level, Ljubljana has the most sports disciplines with registered athletes (37), Maribor has seven, and no other municipality has more than one such discipline.

The diversity level of NSFs in individual municipalities was calculated using entropy. The largest two (city) municipalities of Ljubljana and Maribor have the greatest diversity of registered athletes by NSF (both have an entropy over 4 bits), followed by Celje, Kranj, Nova Gorica, and Koper (value over 3.7 bits; Table 6). High values were also recorded in coastal municipalities, the Lower Sava region, the Ljubljana Basin, and in the belt of municipalities between Nova Gorica and Cerkljica (Figure 6).

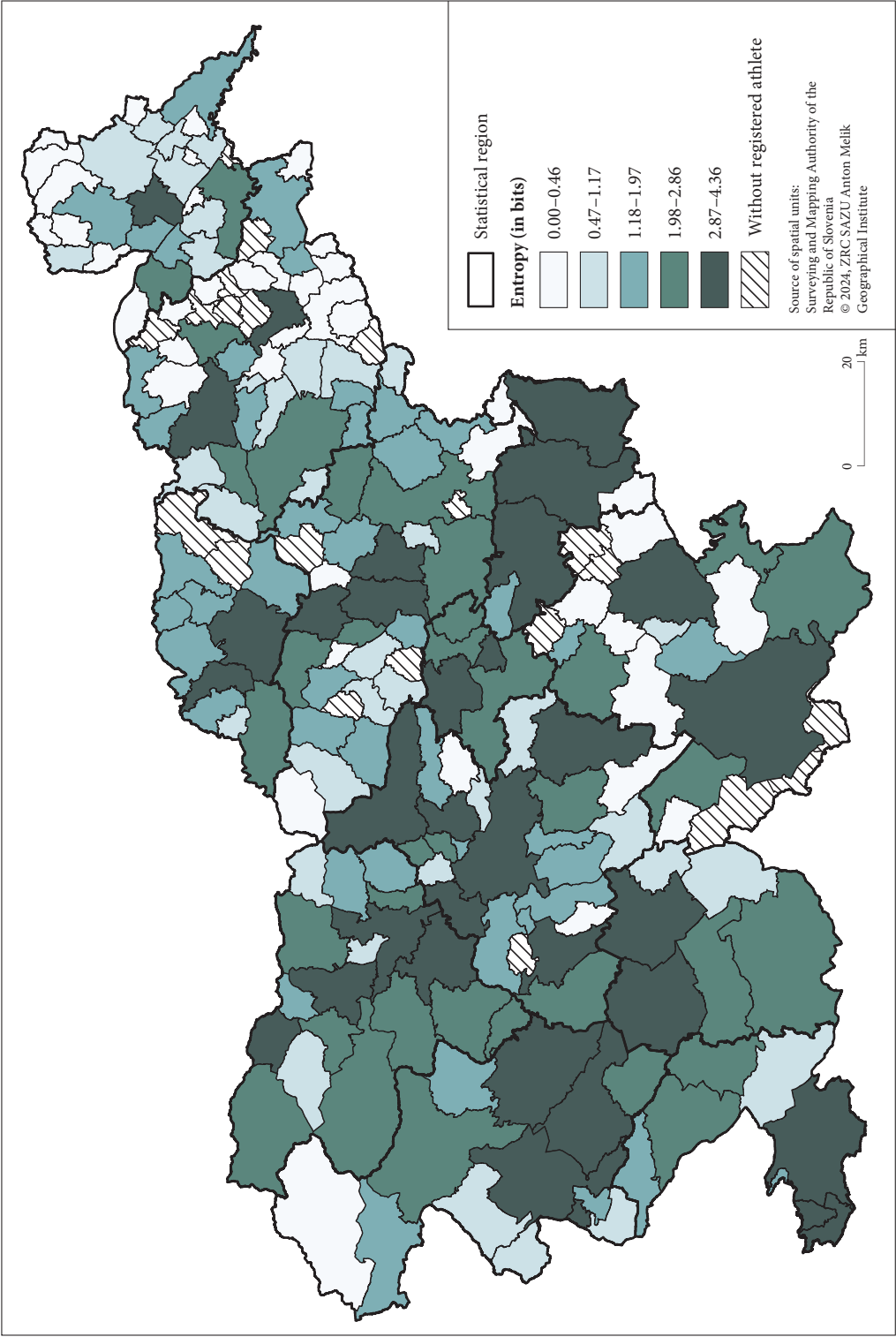
A more detailed analysis indicated a strong correlation of entropy with the level of centrality of the municipal center, similarly to the ratio between the number of registered athletes and the number of inhabitants. Especially Ravne na Koroškem (3.12) and Idrija (3.11), whose municipal centers have a 4th level of centrality, have a greater diversity of sports disciplines than expected, while Novo Mesto (3.45; 2nd level), Trbovlje (2.76; 3rd level), Ormož (1.75; 4th level) and Muta (1.35; 4th level) have a smaller diversity than expected.

The calculation of the Spearman correlation coefficient revealed that the correlation between the number of inhabitants and the number of athletes is (predictably) very strong ($\rho = 0.88$, $p = 0.00$; $N = 212$), and the same goes for the number of inhabitants and entropy ($\rho = 0.83$, $p = 0.00$; $N = 191$; the numerus is smaller here, as 21 municipalities do not have any registered athletes, so no entropy was registered there). Municipalities with bigger populations therefore have more registered athletes and a larger diversity of NSFs.

Table 6: List of ten municipalities with the greatest diversity of registered athletes by NSF.

Municipality	Number of inhabitants	Level of centrality of the municipal center	Number of registered athletes	Number of present NSFs	Entropy of the share of registered athletes
Ljubljana	297,432	1	12,180	56	4.36
Maribor	113,245	1	3,854	38	4.25
Celje	49,104	2	1,919	34	3.83
Kranj	57,081	2	2,605	34	3.77
Nova Gorica	32,013	2	1,165	29	3.75
Koper	53,915	2	1,626	33	3.70
Kamnik	30,093	3	1,085	21	3.63
Velenje	33,675	3	926	28	3.51
Ajdovščina	19,898	3	832	20	3.51
Krško	25,992	3	703	18	3.49

Figure 6: Entropy of the share of registered athletes by NSF by individual municipality. The figure shows the five quantiles. ► page 25



4 Discussion

This research has determined that there are significant differences in the spatial distribution of competitive sports and individual sports disciplines across Slovenia. Sports societies are usually condensed in larger cities, especially in those with a greater level of centrality (Figure 7). Ljubljana boasts the largest number of registered athletes among Slovenian municipalities with about two thirds of sports disciplines, awarding it the title of the country's sports center or »sporting hotspot«. Other studies have also identified that sports are more concentrated in larger cities, as the development and functioning of sports clubs are dependent on the number of inhabitants, population density, and infrastructure (Farah et al. 2018; Kozma et al. 2022), giving larger cities a distinct advantage.

The Upper Carniola statistical region in the northwest is the most developed sporting region according to the number of registered athletes proportionate to the number of inhabitants: about two thirds of the municipalities express above average values of this indicator. Southeast Slovenia is the least developed in terms of sports, as just about half the number of people practice sports as the national average. It should be added that municipalities in Upper Carniola are the top performers in some health indicators, such as overnutrition and children's physical fitness (Statistični ... 2024), and they have the second largest surface area of sports objects per inhabitant (Starček and Petrovič 2013). This indicates that the presence and accessibility of sports is an important factor for both participating in sports as well as population health (Khan et al. 2012), and the important contributing factors are suitable conditions for practicing sports (Poljanšek and Strel 2017) and infrastructure (existing research of infrastructure's impact on sports participation have yielded mixed results; for example, Kokolakis, Castellanos-García, and Lera-López 2017). Our results are concurrent with various studies that have detected a higher level

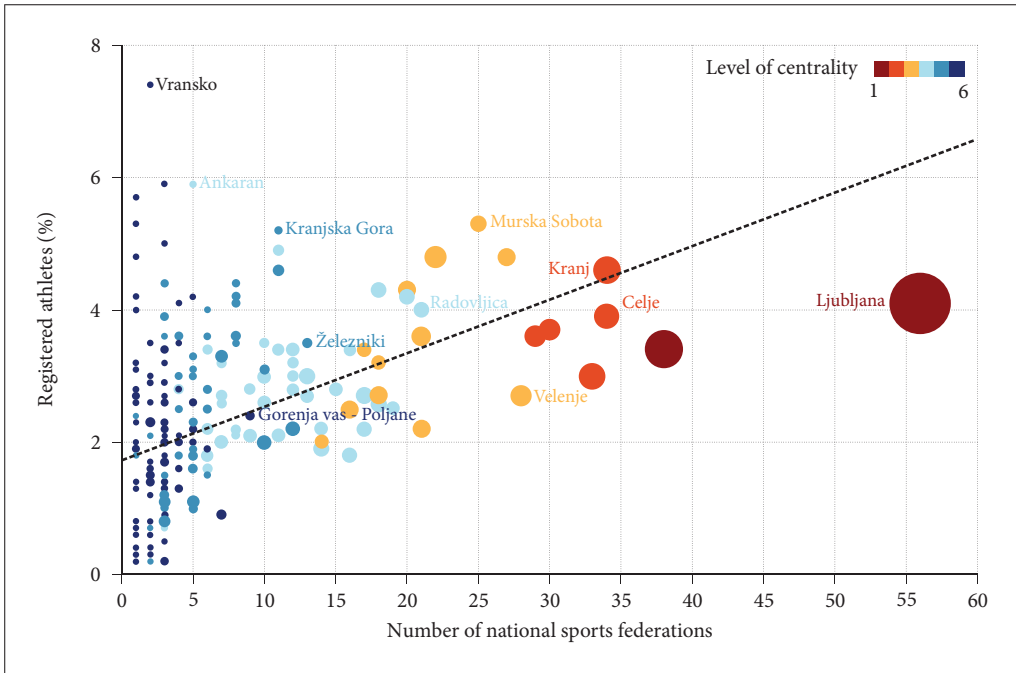


Figure 7: Correlation between the number of registered athletes along with the number of NSFs and the level of centrality of the municipal center. Each level of centrality names the municipality with the highest value of both indicators.

of physical activity in western and central Slovenia (Sila 2010). Despite certain differences between individual parts of the country, no major sports gaps were generally observed, and a similar finding was reported for sports infrastructure (Starček and Petrovič 2013). Based on this analysis, a general conclusion can be drawn that competitive sports is suitably accessible to the majority of the population of Slovenia. This raises the question of whether this is the result of polycentric policies from the past being also transferred to the field of sports.

The spatial distribution of the registered athletes relative to the number of inhabitants across the country is not quite random and rather indicates some particularities, which are to be expected considering the geographical diversity of Slovenia. About a third of the NSFs reflect a cluster dispersion of their registered athletes. Some of them have been shaped by natural conditions (winter and water sports, mountaineering), others by cultural and historical circumstances (for example, boules, ice hockey), while others are confined more locally due to the moderate popularity of sports disciplines that do not have a strong tradition in Slovenia (baseball, softball, lawn hockey). Other sports disciplines do have a more pronounced national significance: one such sport is football, the most practiced sport in 11 out of the 12 statistical regions and in over half of the municipalities where its sports societies are present. Interestingly, the analysis of the spatial autocorrelation has shown that football also has a cluster distribution: it is predominant especially in northeast Slovenia, especially in the Mura statistical region, where over half of the registered athletes practice the sport (52.4%). More research is necessary to answer the question of whether this is predominantly the consequence of favorable natural conditions, i.e., plenty of space and flat surfaces as the precondition for establishing football pitches, which are extremely prolific in the Mura region (Starček and Petrovič 2013), or whether other factors are at play as well (historical, political). One surprising finding was the cluster distribution of most of the team sports that are relatively less dependent on natural conditions compared to some other sports disciplines. It indicates the active impact that space – both physical and social – has on sports participation; this has also been indirectly detected by other studies (for example, Poljanšek and Strel 2017) and could be described as the local sports culture that strengthens or increases people's interest in sports in general or individual sports disciplines specifically. The diversity analysis of the sports disciplines has shown that sports societies from nine NSFs are present in all 12 statistical regions, also largely constituting the most popular sports disciplines in the country. Taking into account a further nine disciplines that are active in 11 statistical regions and five sports disciplines that occur in 10 regions, it can be concluded that despite some differences, Slovenia is a relatively cohesive country in terms of sports. In some statistical regions with fewer inhabitants, such as Littoral-Inner Carniola, Central Sava, and Carinthia, not even half of the NSFs are present, pointing to the weak »sporting capital« of these regions. A high correlation between the population size and service activities was also revealed in the analysis at the municipal level: the diversity of NSFs is greater in municipalities with more inhabitants and a higher level of centrality of the municipal center.

This research has some limitations. For a more comprehensive analysis, the data on the registered athletes should include their place of residence, which would provide an additional insight into the correlation between sports and the local environment. Regrettably, this data was not available. Another welcome addition would be the NSFs themselves being subdivided into individual disciplines (for example, within the Ski Association), which was not possible with the existing data. In future, the analysis could be enhanced by including data on categorized and elite athletes and perhaps by specifying the clubs that compete in league competitions, resulting in a more comprehensive picture of the development of competitive sports in the country.

The results of this research point to certain differences in the development of competitive sports and individual sports disciplines across Slovenia. An awareness of these differences is relevant for several reasons: for a start, they reveal the local conditions for participating in competitive sports (question of equal opportunity or sports for all). Although some studies show that athletes are prepared to relocate (Gobec, Zupančič, and Bon 2016), local sports societies are still crucially important for people to start

practicing a certain sport (Skille 2014; Rossing et al. 2016). This research can be used to expose the gaps in the network of sports societies, as these continue to be the foundation of how Slovenian sports are organized (Kolar, Jurak, and Kovač 2010). The study further highlights the social-cultural diversity of the country, as practicing sports is an important cultural characteristic of the country and helps shape the Slovenian identity. Finally, the research poses a number of questions and can be used to shape sports, recreational, and health policies at the national and local level.

5 Conclusion

Sports is rarely regarded as an important landscape element, despite its great economic and social significance, and studies on sports seldom feature any geographical aspects. This research sought to answer the question of whether there are significant differences in the spatial distribution of competitive sports and individual sports disciplines in Slovenia, something that has not been previously explored. Our stated aim was achieved by analyzing the distribution of registered athletes, sports societies, and their corresponding national sports federation (NSF) at the level of statistical regions and municipalities.

Upper Carniola in the northwest was found to have the most registered athletes per the number of inhabitants of the statistical regions, and Southeast Slovenia has the fewest. The most popular sport in the country is football, both according to the number of registered athletes and the number of regions and municipalities in which it is present. It is also the most widely represented NSF in 11 statistical regions and 102 municipalities. In terms of the spatial-sports aspect, Slovenia is a relatively diverse country, which is reflected in some local particularities and the differences in the representation of individual sports both at the regional and the local level. This was further confirmed by the analysis of the spatial autocorrelation in which about a third of NSFs have a cluster distribution of the registered athletes. Some associations and disciplines are clearly connected to the natural environment and conditions, such as sailing being concentrated in coastal municipalities or ski disciplines being prevalent in mountainous regions.

Certain differences were also detected in the distribution of the most popular team sports: football is more popular than the national average in the northeast; the same goes for basketball in the southwest and in the east, handball in the southeast, and volleyball in the north. Municipalities with a higher centrality level of its center have a larger share of registered athletes and a greater diversity of the present NSFs. Despite these differences and particularities, Slovenia can be labeled as cohesive in terms of sports, as the most popular team sports disciplines are present in most statistical regions.

The research has unveiled certain spatial patterns about how competitive sports are distributed in Slovenia, including some sporting hotspots and gaps. This distribution can be attributed to different factors, be they physical geographical (altitude, relief) or social geographical (cultural, political, historical, infrastructure), which must for now remain unexplored. Hopefully, this article at least partly fills the research gap in sports geography, while also sparking greater interest in the field.

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TEMELJNE GEOGRAFSKE ZNAČILNOSTI TEKMOVALNEGA ŠPORTA V SLOVENIJI

1 Uvod

Šport in rekreacija imata velik pomen in številne koristi za družbo in človeka. Tako je tudi v Sloveniji: med pomembne kulturne značilnosti Slovenije avtorji prištevajo povezanost z naravo, razvito društveno udejstvovanje in priljubljenost rekreacije na prostem, zlasti pohodništva in vrtnarjenja (Urbanc, Šmid Hribar in Kumer 2020). Posledično je tudi članstvo v športnih društvih in klubih, ki združujejo tako ljubiteljski kot tekmovalni šport, zelo množično (Šugman s sodelavci 2003), društveno življenje pa je temelj modela športa zunaj šolskega sistema (Kolar, Jurak in Kovač 2010; Šugman 2016). Slovenija se po pogostnosti rekreativnega udejstvovanja uvršča v evropski vrh (European ... 2017) in je po številnih kazalnikih prepoznana kot športno razvita država (Horvat in Mason 2022), šport pa je pomembna sestavina slovenske nacionalne identitete (Kotnik 2009; Topič in Coakley 2010). Pri tem pa se postavlja vprašanje, ali je športno udejstvovanje »vseslovenski« pojav oziroma ali so nekatera območja bolj športno razvita kot druga. Enako vprašanje velja za posamezne športne panoge.

Za šport je še pred nekaj desetletji veljalo, da je zapostavljeno raziskovalno področje geografije in to kljub njegovemu pomembnemu vplivu na gospodarstvo in družbo ter nesporni povezanosti z različnimi prvinami prostora (Bale 2003). Vseeno je v zadnjem času opaziti, da je zanimanje za geografske vidike športa v porastu. Za temeljno delo s področja geografije športa velja knjiga *Sports Geography* (Bale 2003), ki obravnava razmerja med športom, prostorom, lokacijo in pokrajino. Veliko prispevkov opominja na povezanost športa z različnimi vidiki in potrebo po interdisciplinarnem preučevanju, na primer na področjih turizma (Higham in Hinch 2006), zdravja, rekreacije in telesne dejavnosti (Andrews 2016), urbane geografije (Koch 2018) in kritične geografije (Koch 2016). Pogoste so raziskave o razporeditvi športne infrastrukture (Hoekman, Breedveld in Kraaykamp 2015; Asefi in Ghanbarpour Nosrati 2020; Wang, Li in Cheng 2023), vplivu velikih športnih dogodkov na okolje in prostor (Li in Luk 2011), razmerja med športom in prostorsko neenakostjo (Rosso 2008; Tiran 2024), omeniti pa velja tudi nekatere, ki obravnavajo priložnosti in pasti, povezane z velepodatki (angleško *big data*) (Tian 2018). Poleg raziskovanja se geografija športa počasi uveljavlja tudi v poučevanju (Hall in Lin 2023; Kohe in Wise 2023).

Z vidika pričujočega prispevka so zanimive zlasti raziskave, v katerih je v ospredju preučevanje športa skozi prostorske razlike in dejavnike. Tako je bilo ugotovljeno, da so na severu in zahodu Evrope bolj športno dejavni kot na jugu in vzhodu (Lera-López in Marco 2017), večja mesta pa imajo praviloma več športne infrastrukture (Kozma s sodelavci 2022). Na razširjenost posameznih panog vplivajo različni dejavniki, zlasti gostota prebivalstva (Rossing s sodelavci 2016; Farah s sodelavci 2018), ugotovljeno je bilo tudi, da so za razvoj športnih talentov pomembni lokalni klubi (Rossing s sodelavci 2016). Na prostorsko razmestitev športnih panog lahko vplivajo tudi politične odločitve, kot denimo tako imenovani portoroški sklepi, ki so v Sloveniji odločno posegli v lokalno in regionalno organiziranost športa (Šugman 1976).

Geografija športa, v katero spada pričujoča raziskava, je v Sloveniji povsem nerazvita in marginalizirana veja geografije. V reviji Šport, osrednji strokovni reviji za teoretična in praktična vprašanja športa pri nas, lahko zasledimo zgolj peščico raziskav z geografsko vsebino, na primer na temo selitev športnikov (Gobec, Zupančič in Bon 2016). Geografske razsežnosti ne zasledimo niti v člankih, ki obravnavajo pregled posameznih športnih panog (na primer Šimenko 2014), omeniti pa velja nekatere regionalne preglede razvoja športa (na primer Pavlin 2006). Z geografskega vidika je bolj raziskana športna infrastruktura: prostorska razpršenost pokritih športnih objektov je z vidika dostopnosti ugodna, se pa znotraj države pojavljajo nekatere pomembne razlike (Starček in Petrovič 2013; Cigale s sodelavci 2024). Na

tem mestu velja omeniti tudi raziskave, ki sodijo v sklop geografije prostega časa in ponujajo pregled prostorske razširjenosti smučišč, planinskih ciljev in naravnih kopališč (na primer Jeršič 1998).

Doslej še nihče ni temeljiteje preučeval geografske raznolikosti Slovenije z vidika športne organiziranosti ali udeleženosti; na to temo je bilo doslej opravljenih le nekaj parcialnih raziskav. Da so med območji pomembne razlike, ki so vredne podrobnejše obravnave, lahko sklepamo iz nekaterih kazalnikov zdravja (Nacionalni ... 2024) in anketnih raziskav (Djomba 2012; Pori, Pori in Sila 2013; Hafner Fink s sodelavci 2022). Iz raziskave Slovensko javno mnenje, ki športno-rekreativno dejavnost meri že vse od leta 1973 in vključuje tudi osnovne geografske spremenljivke (regija, tip naselja), izhaja, da so telesno najbolj dejavni prebivalci gospodarsko bolj razvitih regij v osrednji in zahodni Sloveniji ter primestnih območjih (Doupona Topič 2010; Sila 2010). Tovrstne regionalne razlike je potrdila tudi zadnja anketna raziskava o življenjskih pogojih, po kateri so najbolj športno dejavni na Gorenjskem in Koroškem, najmanj pa v Pomurju (Statistični ... 2022). Ravno tako je malo znanega o razširjenosti in množičnosti posameznih športno-rekreativnih panog. Glede na tip naselja najbolj izstopa alpsko smučanje, ki je bistveno bolj popularno v primestnih okoljih, kar avtorji pripisujejo tamkajšnji boljši dostopnosti smučišč, tako z vidika oddaljenosti kot stroškov (Pori, Pori in Sila 2013). Tako za športno udeleževanje nasploh kot po posameznih panogah velja, da so družbeni vidiki (na primer razlike po spolu, starosti ali izobrazbi) mnogo bolje preučeni v primerjavi z geografskimi, rekreativni šport pa je bolje preučen od tekmovalnega.

Namen raziskave je zato analizirati prostorsko razporeditev tekmovalnega športa v Sloveniji po nacionalnih panožnih športnih zvezah (NPŠZ) in s tem preučiti raznolikost športa znotraj Slovenije. Osrednje raziskovalno vprašanje je, ali znotraj države prihaja do pomembnih razlik v razširjenosti športa in posameznih športnih panog.

2 Pojmi, raziskovalno območje, podatki, metodologija

2.1 Razlaga glavnih pojmov

V prispevku pogosto uporabljamo naslednje ključne pojme: registrirani športnik, športno društvo in nacionalna panožna športna zveza. Na tem mestu za pravilno razumevanje prispevka predstavljamo definicije teh izrazov Olimpijskega komiteja Slovenije – Združenja športnih zvez (OKS-ZŠZ) (Pogoji ... 2020).

Registrirani športnik je posameznik, ki »se registrira kot športnik, če je star najmanj 12 let, je član športnega društva, ki je včlanjeno v NPŠZ ali ŠIS-SPK [Zveza za šport invalidov Slovenije – Slovenski paralimpijski komite], in ima s strani OKS-ZŠZ potrjen nastop in je vpisan v evidenco registriranih in kategoriziranih športnikov«, prav tako pa tudi »posameznik, mlajši od 12 let, vendar ne mlajši od 10 let, ki je registriran v olimpijskih športnih disciplinah individualnih športnih panog, pri katerih lahko na svetovnih prvenstvih v članski kategoriji nastopajo športniki mlajši od 18 let« (Pogoji ... 2020). Izraz registrirani športnik je v članku spolno nevtralen.

Športno društvo »je društvo, ki je registrirano v skladu z Zakonom o društvih in ima v temeljnem aktu šport opredeljen kot pretežno dejavnost in je včlanjeno v NPŠZ in izvaja programe športne vzgoje otrok in mladine, usmerjenih v kakovostni in vrhunski šport, programe kakovostnega ali vrhunškega športa« (Pogoji ... 2020).

Ker je lahko posamezno športno društvo včlanjeno v več različnih nacionalnih panožnih športnih zvez, smo v raziskavi tako društvo ustrezno vodili v evidenci večkrat – imenu društva smo zato pripisali še informacijo, za katero vrsto nacionalne panožne športne zveze gre. Zaradi lažjega razumevanja smo tovrstno enoto, ki je dejansko del športnega društva, še vedno imenovali *športno društvo*. V raziskavo so vključena zgolj tista, ki so imela na dan veljavnosti podatkov vsaj enega registriranega športnika.

Nacionalna panožna športna zveza (krajše športna zveza ali zveza) je »zveza društev, registrirana v skladu z Zakonom o društvih, ki je včlanjena v skupino NPŠZ v OKS-ZŠZ ali v ustrežno MŠF [mednarodno športno federacijo]. NPŠZ je nosilec uradnih tekmovalnih sistemov v Republiki Sloveniji« (Pogoji ... 2020).

2.2 Raziskovalno območje in podatki

Analiza registriranih športnikov je bila izvedena za območje Republike Slovenije. Podatke smo zbrali iz različnih virov; število registriranih športnikov in podatke o športnih društvih smo pridobili pri Olimpijskem komiteju Slovenije in se nanašajo na dan 31. 12. 2023. Administrativne enote in podatke o koordinatah naslovov smo pridobili na Geodetski upravi Republike Slovenije, podatke o številu prebivalcev v drugi polovici leta 2023 pa na Statističnem uradu Republike Slovenije.

2.3 Umestitev podatkov o registriranih športnikih v prostor

Anonimizirane podatke o registriranih športnikih ter naslovih športnih društev in pripadajočih športnih zvezah smo medsebojno povezali v programu *MS Excel*. V naslednjem koraku smo s pomočjo geokodiranja (Singh 2017) naslovov športnih društev športna društva z registriranimi športniki postavili v prostor. Za nekaj športnih društev smo morali lokacijo določiti ročno. Na podlagi vzpostavljenе baze smo različne podatke združili po administrativnih enotah.

2.4 Analiza razporeditve registriranih športnikov

Analizo razporeditve registriranih športnikov smo opravili v več sklopih. Na ravni države smo izračunali: celokupno število registriranih športnikov, število društev z registriranimi športniki, število različnih športnih zvez ter deleža društev in registriranih športnikov po športnih zvezah.

Na ravni statističnih regij in občin smo izračunali delež registriranih športnikov glede na število prebivalcev; na ta način je zastopanost posameznih športnih zvez med regijami oziroma občinami bolj primerljiva.

Za vsako športno zvezo in tudi seštevke vseh zvez smo analizirali **prostorsko avtokorelacijo** (Haining 2001) razmerja med številom registriranih športnikov in številom prebivalcev po občinah. Za izračun smo uporabili globalni Moranov indeks (Moran 1948). S tem testom ugotavljamo stopnjo prostorske povezanosti spremenljivke. Izračun Moranovega indeksa lahko obsega vrednost med -1 in $+1$. Vrednosti okoli 0 pomenijo naključno razporeditev visokih in nizkih vrednosti v prostoru. Vrednosti, ki so bližje 1, kažejo na pozitivno prostorsko avtokorelacijo oziroma gručasto razporeditev, vrednosti blizu -1 pa na negativno prostorsko avtokorelacijo oziroma razpršeno razporeditev (Travnikar in Juvančič 2018). Izračun smo opravili v programu *ESRI ArcGIS Pro 3.1.4*. V nastavitvah smo pri prostorskem razmerju izbrali inverzno razdaljo in pri izračunu razdalje evklidsko razdaljo (Internet 1).

Za vsako občino smo izračunali tudi **entropijo razredov** (Kononenko 2005; Grčić, Sibinović in Ratkaj 2024) z vidika razmerja med številom registriranih športnikov in številom prebivalcev. Ta podatek nam je pokazal, kako raznolika je zastopanost športnih zvez znotraj posamezne občine. Entropija razredov (v nadaljevanju uporabljamo skrajšan izraz *entropija*) ocenjuje težavnost klasifikacijskega problema in pomeni pričakovano količino informacije, ki jo potrebujemo za klasifikacijo enega primera (Kononenko 2005). Če je entropija visoka, to pomeni, da je sistem zelo nepredvidljiv in da je za opisovanje njegovih izidov potrebnih več informacij. Nasprotno pa nizka entropija pomeni, da je sistem bolj predvidljiv in da je za kodiranje izidov potrebnih manj informacij. V našem primeru visoka entropija pomeni, da je število registriranih športnikov po športnih zvezah (razredih) znotraj občine zelo enakomerno razporejeno med veliko različnih športnih zvez. Nasprotno pa manjša entropija pomeni, da je znotraj občine manj športnih zvez, med katerimi je lahko (kar še zmanjšuje entropijo) večina registriranih športnikov registrirana le znotraj ene zveze.

Delež registriranih športnikov in število zvez smo primerjali s **stopnjo centralnosti občinskega središča**, upošteva tudi stična naselja, v kolikor so znotraj iste občine (Nared s sodelavci 2017).

Poleg omenjenih analiz smo izračunali še **stopnjo korelacije** med številom prebivalcev in številom registriranih športnikov ter med številom prebivalcev in entropijo registriranih športnikov (po občinah). Korelacijo smo izračunali tudi med posameznimi športnimi zvezami za pridobitev dodatnega vpogleda v razmestitev registriranih športnikov, denimo pri analizi razmestitve najbolj zastopanih športnih zvez na ravni občin (v tem primeru smo upoštevali le tiste občine, kjer se ta zveza pojavi in se na ta način izognili velikemu številu manjkajočih vrednosti; pri opisu rezultatov je na to posebej opozorjeno). Uporabili smo Spearmanov koeficient korelacije, ker večina spremenljivk ni bila normalno porazdeljena.

3 Rezultati

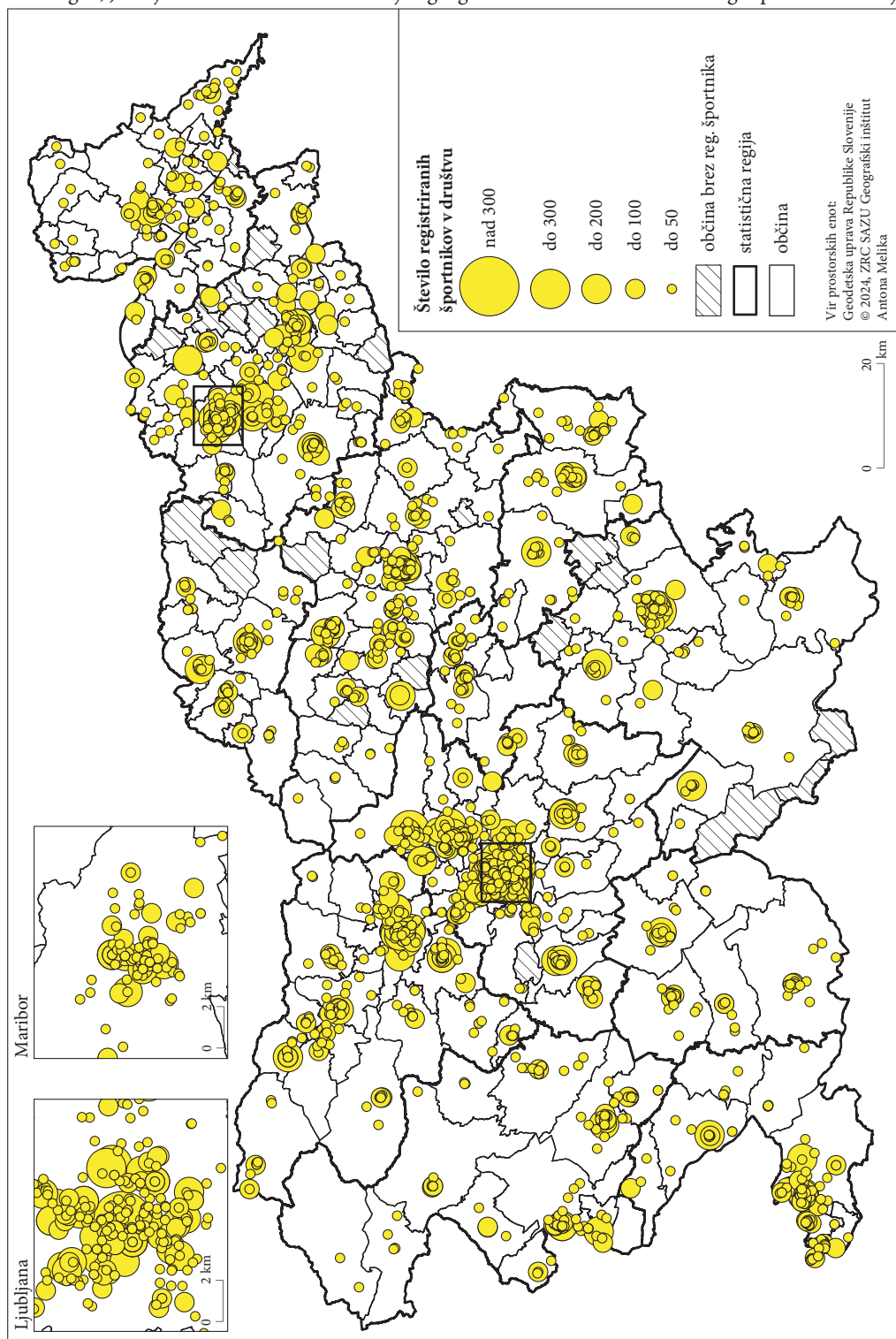
3.1 Osnovni podatki o registriranih športnikih

Ob koncu leta 2023 je bilo v Sloveniji 2037 športnih društev, ki so imela vsaj enega registriranega športnika. Nekatera društva so bila včlanjena v več športnih zvez (na primer Športno društvo Jesenice

Preglednica 1: Športne zveze z največ registriranimi športniki (opomba: prikazanih je največjih 20 športnih zvez po številu registriranih športnikov, kar je 85,9 % vseh registriranih športnikov).

športna zveza	število registriranih športnikov	delež (%) od vseh registriranih športnikov	število športnih društev	število statističnih regij, v katerih delujejo društva zveze	število občin, v katerih delujejo društva zveze
nogometna	15.281	23,9	255	12	151
košarkarska	7719	12,1	111	12	71
odbojkarska	5710	8,9	86	10	56
rokometna	4092	6,4	71	12	52
atletska	3703	5,8	66	12	50
planinska	2145	3,4	107	11	73
smučarska	2115	3,3	98	11	55
plesna	1872	2,9	54	11	26
plavalna	1496	2,3	30	11	18
kolesarska	1485	2,3	75	12	49
judo	1478	2,3	57	11	37
gimnastična	1377	2,2	44	10	23
strelska	1180	1,8	75	12	60
teniška	864	1,4	59	11	36
šahovska	822	1,3	53	12	46
kegljaška	730	1,1	54	12	46
tekvondo	718	1,1	25	6	16
kajakaška	701	1,1	16	8	11
hokejska	695	1,1	9	4	6
karate	644	1,0	63	12	42

Slika 1: Število registriranih športnikov (po športnih društvih). ► str. 36



je včlanjeno v osem različnih športnih zvez), kar pomeni, da je športnih društev, kot jih pojmuje v naši raziskavi, skupaj 2108 (za definicijo glej poglavje 2.1; slika 1). V podatkovni zbirki Olimpijskega komiteja Slovenije je 63 športnih zvez. Skupaj je bilo v društvih 63.823 registriranih športnikov, kar je 3,0 % slovenskega prebivalstva.

Največ športnih društev in registriranih športnikov spada pod okrilje nogometne zveze (12,1 % društev in 23,9 % vseh registriranih športnikov), po številčnosti športnih društev in registriranih športnikov pa sledi košarkarska zveza (preglednica 1).

Na ravni statističnih regij (preglednica 2) je največ registriranih športnikov v osrednji Sloveniji (19.278). Glede na število prebivalcev je po tem kazalniku najbolj športna statistična regija gorenjska (3,7 %), najmanj pa obe statistični regiji na jugovzhodu države, posavska (2,2 %) in jugovzhodna Slovenija (2,1 %). Slednja ima tudi največji delež občin brez registriranega športnika.

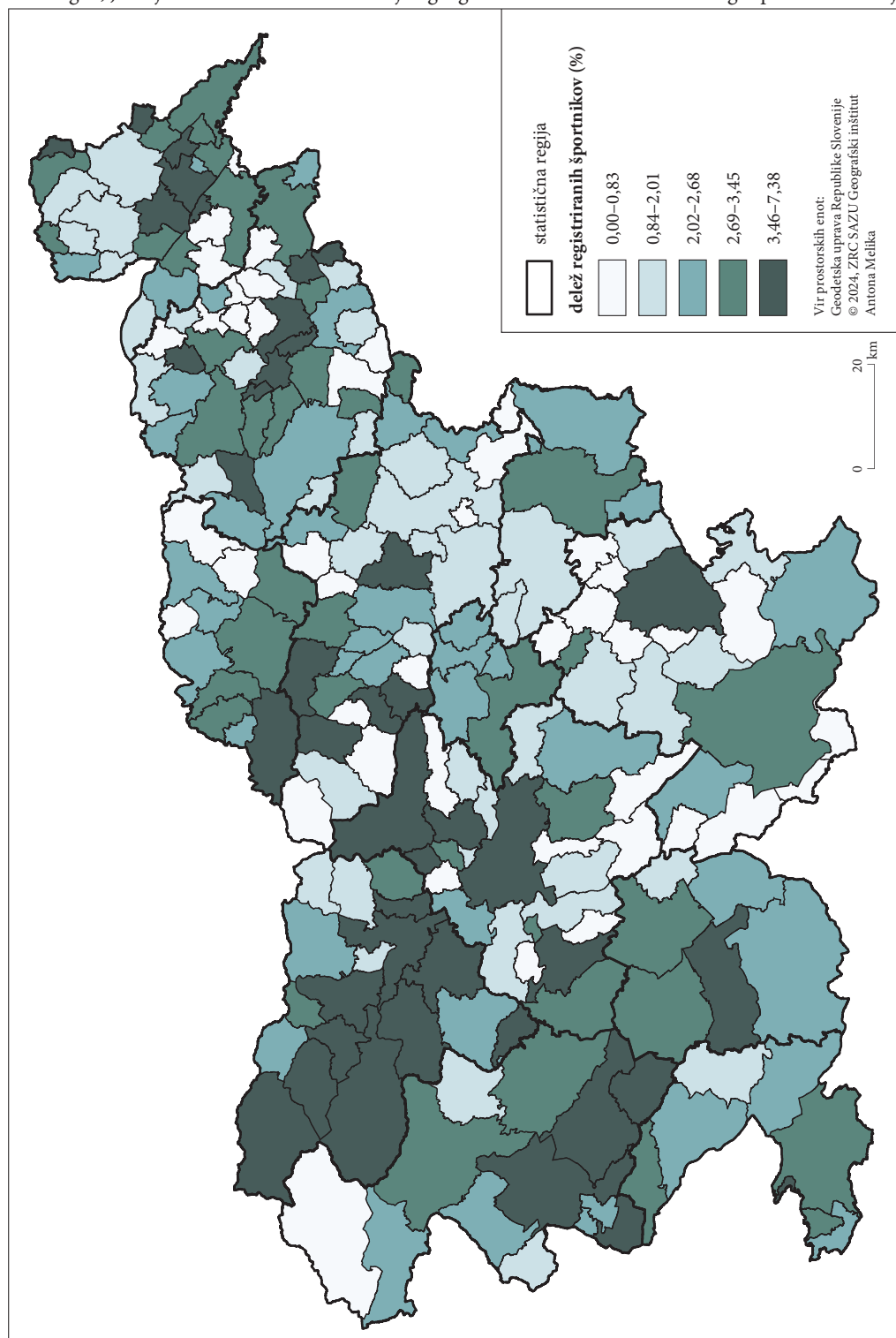
Preglednica 2: Število registriranih športnikov v primerjavi s številom prebivalcev po statističnih regijah.

statistična regija	število registriranih športnikov	število prebivalcev	število registriranih športnikov glede na število prebivalcev (%)
gorenjska	7732	209.324	3,7
osrednjeslovenska	19.278	564.297	3,4
goriška	3714	118.361	3,1
pomurska	3438	113.962	3,0
obalno-kraška	3473	118.807	2,9
podravska	9721	329.753	2,9
koroška	1952	70.674	2,8
primorsko-notranjska	1524	53.959	2,8
savinjska	6788	261.137	2,6
zasavska	1360	57.283	2,4
posavska	1680	75.974	2,2
jugovzhodna Slovenija	3163	147.406	2,1
Slovenija	63.823	2.120.937	3,0

Preglednica 3: Povprečni delež registriranih športnikov glede na stopnjo centralnosti občinskega središča (Nared s sodelavci 2017).

stopnja centralnosti	delež (%)
1. nacionalno središče mednarodnega pomena	3,90
2. središče nacionalnega pomena	3,79
3. središče regionalnega pomena	3,51
4. središče medobčinskega pomena	2,78
5. središče lokalnega pomena	2,41
6. središče vicinalnega pomena	2,12

Slika 2: Razmerje med številom registriranih športnikov in številom prebivalcev po občinah. Razredi so pripravljeni s petimi kvantili. ► str. 38



Na ravni občin je največ registriranih športnikov v Ljubljani (12.180), sledijo Maribor (3854), Kranj (2605), Celje (1919), Domžale (1801) in Koper (1626). Brez registriranih športnikov je 21 občin, ki so vse po številu prebivalcev zelo majhne. Tudi če podatek obtežimo glede na število prebivalcev (slika 2), se pokaže povezanost s stopnjo centralnosti občinskega središča (preglednica 3, slika 7). Nadpovprečen delež registriranih športnikov imajo vse mestne občine, razen Velenja in Krškega (po 2,7 %). Med večjimi občinami po številu prebivalcev imajo najvišji delež Murska Sobota (5,3 %), Domžale in Ptuj (po 4,8 %), Kranj (4,6 %), Škofja Loka in Vrhnika (po 4,3 %), Ajdovščina (4,2 %), Ljubljana (4,1 %) in Radovljica (4,0 %). Na vrh tega seznama se sicer uvršča nekaj manjših občin, kot so Vransko (7,4 %), Ankaran in Starše (5,9 %) ter Veržej (5,7 %), v katerih je prisotnih le nekaj panog, a so te zelo številčne (na primer nogomet). Občine s podpovprečnim deležem registriranih športnikov so večinoma v zaledju večjih mest z nižjo stopnjo centralnosti občinskega središča. Med občinami s središčem 3. stopnje centralnosti negativno izstopata Brežice (2,2 %) in Trbovlje (2,0 %), med občinami s središčem 4. stopnje centralnosti pa Metlika (1,6 %) in Muta (0,7 %), ki v tej skupini sicer spadata med manjše občine.

Da prostorska razporeditev registriranih športnikov v Sloveniji ni povsem naključna, kaže tudi izračun prostorske avtokorelacije razmerja med številom registriranih športnikov in številom prebivalcev, ki je pokazal na gručast vzorec (Moranov indeks: 0,161; z-vrednost: 3,769; p-vrednost: < 0,001).

3.2 Prostorska porazdelitev registriranih športnikov po športnih zvezah

Na regionalni ravni je nogomet najbolj množična športna panoga v 11 od 12 statističnih regij; izrazito prevladuje zlasti v pomurski, kjer se z njim ukvarja več kot polovica registriranih športnikov (52,4 %). Edina statistična regija, kjer nogomet ni najbolj množičen šport, je primorsko-notranjska: tam je šele na tretjem mestu, pred njim sta košarka in kegljanje.

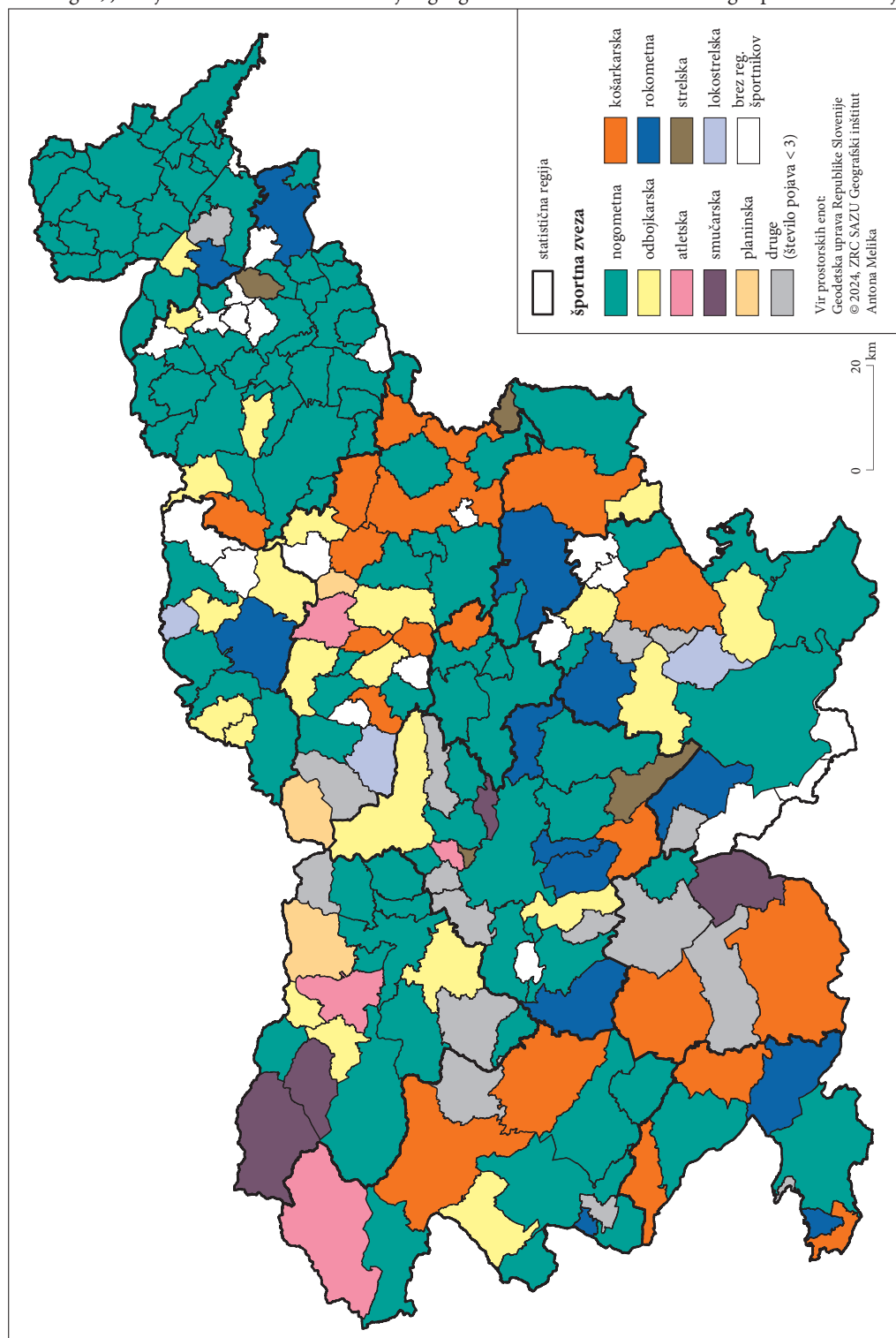
Na občinski ravni je v največ občinah najbolj zastopan nogomet (v 102), zlasti v severovzhodni Sloveniji, sledijo odbojka (22), košarka (20) in rokomet (13). Preostale zveze se kot vodilne po številu športnikov pojavljajo v štirih občinah ali manj (slika 3). Nogometna društva so sicer prisotna v več kot dveh tretjinah občin (151 od 212).

Za analizo prostorskega vzorca porazdelitve registriranih športnikov po različnih panogah po občinah smo opravili izračun Moranovega indeksa prostorske avtokorelacije za razmerje med številom registriranih športnikov in številom prebivalcev. Ugotovili smo, da je slaba tretjina športnih zvez (20 zvez; od tega 17 s $p < 0,05$ in z-vrednostjo $> 1,96$) gručasto razporejena, preostale pa so naključno razporejene (preglednica 4). Nobena izmed športnih panog ni kazala statistično značilne razpršene porazdelitve.

Najvišje Moranove indekse in s tem najbolj gručasto prostorsko porazdelitev imajo jadrnanje, športni ribolov na morju, smučarske panoge in balinanje. Prvi dve sta vezani predvsem na občine z dovolj velikimi vodnimi površinami (enako velja za veslanje, ki ima peti najvišji Moranov indeks), smučarske panoge pa na gorovja in hribovja v alpskem in dinarskem svetu. Balinanje je razširjeno zlasti na Primorskem in Notranjskem (slika 4).

Med večjimi športnimi zvezami, ki imajo gručasto razporeditev, lahko izpostavimo nogometno, košarkarsko in odbojgarsko (slednja sicer z nekoliko večjo negotovostjo, saj je $p = 0,077$). Iz zemljevidov (slika 5) je razvidno, da se med seboj pogosto ne prekrivajo: nogomet je bolj zastopan na severovzhodu, košarka na jugozahodu in na Savinjskem, odbojka pa na Koroškem in Savinjsko-Šaleškem. Rokomet, ki je četrta najbolj številčna športna panoga v Sloveniji (preglednica 1), ima naključno razporeditev, je pa opazno bolj prisotna v jugovzhodni Sloveniji, kjer ima podobno visok delež športnikov kot nogomet. Z izračunom Spearmanovega koeficienta korelacije smo ta opažanja potrdili, saj se je izkazalo, da so te največje športne zveze med seboj pogosto negativno povezane (preglednica 5).

Slika 3: Najbolj zastopane športne zveze po občinah glede na število registriranih športnikov. ► str. 40



*Preglednica 4: Razporeditev posameznih športnih zvez v Sloveniji glede na Moranov indeks. Statistično značilno gručaste porazdelitve števila registriranih športnikov glede na število prebivalcev so označene s krepkim tiskom, z * so označene zveze, ki imajo $p < 0,05$.*

ime zveze	Moranov indeks	z-vrednost	p-vrednost
jadralna*	0,662	21,773	< 0,001
športni ribolov na morju*	0,600	22,605	< 0,001
smučarska*	0,534	13,975	< 0,001
balinarska*	0,467	11,428	< 0,001
veslaška*	0,381	10,628	< 0,001
nogometna*	0,289	6,759	< 0,001
planinska*	0,172	4,138	< 0,001
kotalkarski športi*	0,153	6,095	< 0,001
kolesarska*	0,135	3,274	0,001
hokejska*	0,134	5,425	< 0,001
košarkarska*	0,110	2,738	0,006
avto šport*	0,108	2,868	0,004
kegljaška*	0,108	2,938	0,003
drsalni športi*	0,107	5,356	< 0,001
atletska*	0,086	2,087	0,037
karate	0,073	1,852	0,064
odbojgarska	0,072	1,765	0,077
hokej na travi*	0,067	2,516	0,012
floorball*	0,064	2,049	0,040
baseball in softball*	0,024	2,009	0,045

zveze z naključno razporeditvijo: ameriški nogomet, avto-moto, badminton, biljardna, boksarska, bowling, cheer, curling, gimnastična, golf, invalidska-paralimpijska, judo, ju-jitsu, kajakaška, kegljanje na ledu, kickboxing, konjeniška, letalska, lokostrelska, namiznoteniška, olimpijsko dviganje uteži, orientacijska, pikado, plavalna, plesna, potapljaška, powerlifting, ribiška, rokoborba, rokometa, rolkarska, rugby, sabljaška, sankarska, squash, strelska, surf in sup, šah, tajski boks, tekvondo, teniška, triatlonska, vaterpolska

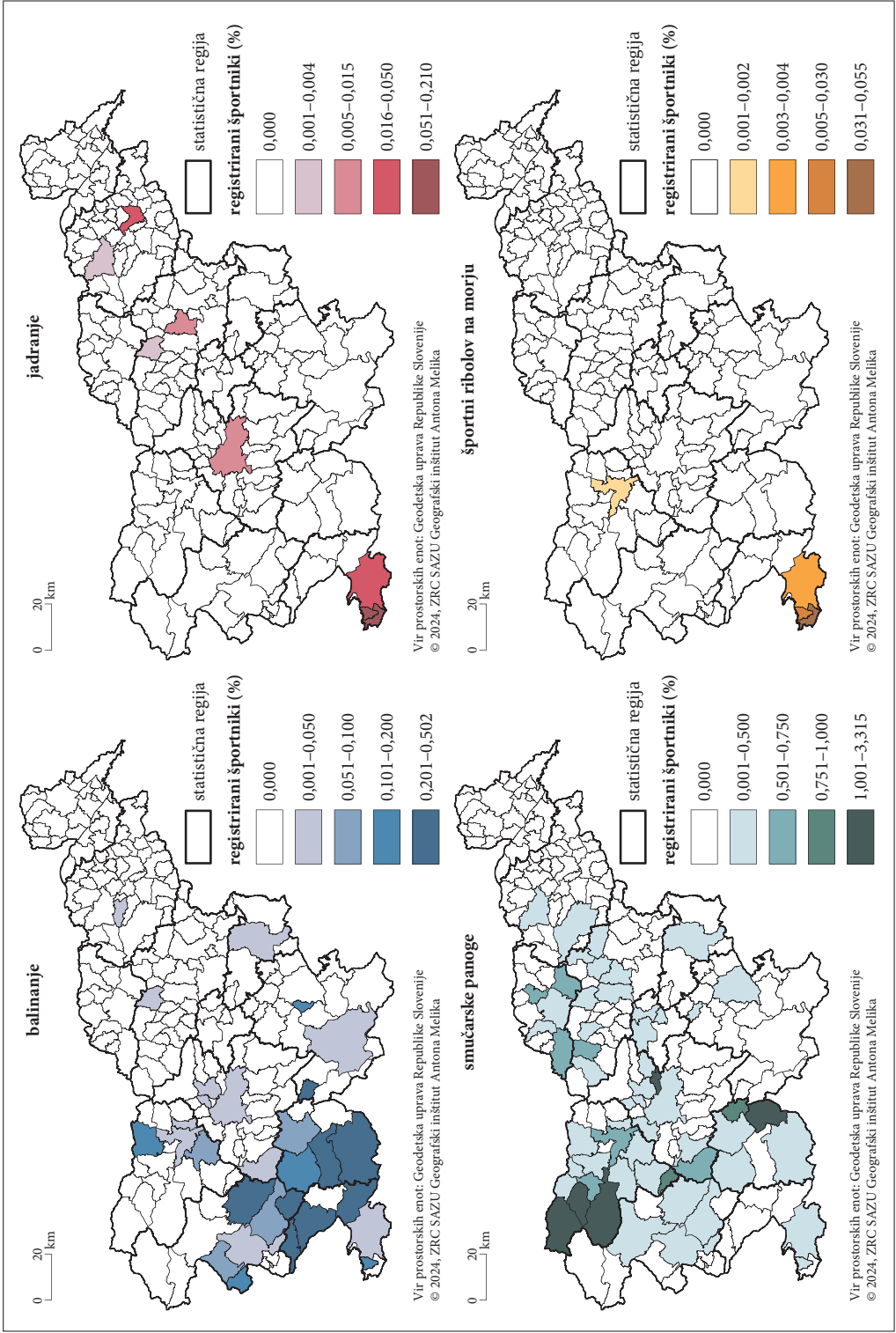
Preglednica 5: Spearmanov koeficient korelacije med največjimi ekipnimi športi. V vsaki posamezni vrstici so v izračun vključene le občine, kjer je vsaj en registriran športnik znotraj zveze, ki je zapisana v vrstici. Statistično značilne povezanosti ($p < 0,05$) so označene s krepkim tiskom.

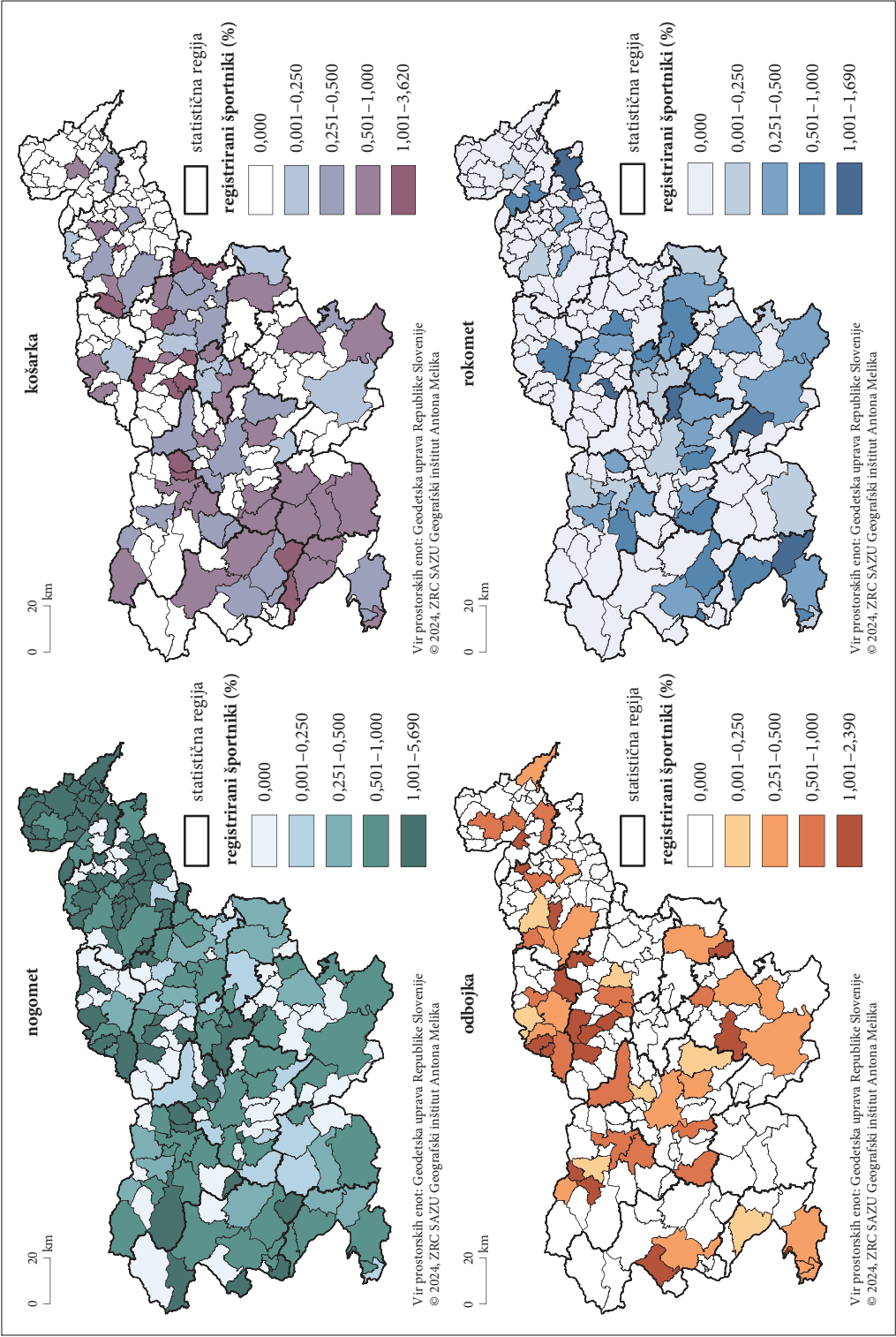
	nogomet	odbojka	košarka	rokometa	vključene občine z vsaj enim članom
rokometa	-0,223	-0,281	-0,384		rokometa zveze (N = 52)
košarka	0,115	-0,269		-0,240	košarkarske zveze (N = 71)
odbojka	-0,167		-0,543	-0,479	odbojgarske zveze (N = 56)
nogomet		-0,181	-0,360	-0,368	nogometne zveze (N = 151)

Slika 4: Število športnikov v panogah z najbolj gručasto razporeditvijo v razmerju do števila prebivalcev občine. ► str. 42

Slika 5: Število registriranih športnikov v največjih ekipnih športih glede na število prebivalcev.

► str. 43





Zanimivo prostorsko porazdelitev imajo tudi nekatere panoge, ki sicer niso (izrazito) gručasto porazdeljene, a se pojavljajo zgolj v posameznih statističnih regijah ali občinah. Tako je hokej na travi prisoten zgolj v Pomurju, kjer se z njim ukvarjajo v treh klubih. Podobno je rokoborba, ki je ena najmanj razvitih olimpijskih panog v Sloveniji, prisotna skoraj izključno na vzhodu Slovenije, od koder prihaja 93,3 % vseh registriranih rokoborcev (nasplošje je v tem delu države večina borilnih športov nadpovprečno zastopana). Bolj lokalnega ali regionalnega značaja je še kar nekaj drugih športov, vendar bi njihova obravnava presegla namen tega prispevka.

3.3 Območna raznolikost športnih panog

V vseh 12 statističnih regijah so prisotna društva v okviru devetih športnih zvez: atletske, karate, kegljaške, kolesarske, košarkarske, nogometne, rokometne, strelske in šahovske (preglednica 1). V slabih treh petinah športnih panog (37 od 63) ima največ registriranih športnikov osrednjeslovenska statistična regija. Izmed 63 športnih zvez jih je v osrednjeslovenski prisotnih 57, veliko jih imajo tudi gorenjska (50), podravska (47) in savinjska (45), glede na razmeroma majhno število prebivalcev tudi obalno-kraška statistična regija (40). Na občinski ravni ima največ panog z največ registriranimi športniki Ljubljana (37), Maribor jih ima sedem, nobena od preostalih občin pa ne več kot ene.

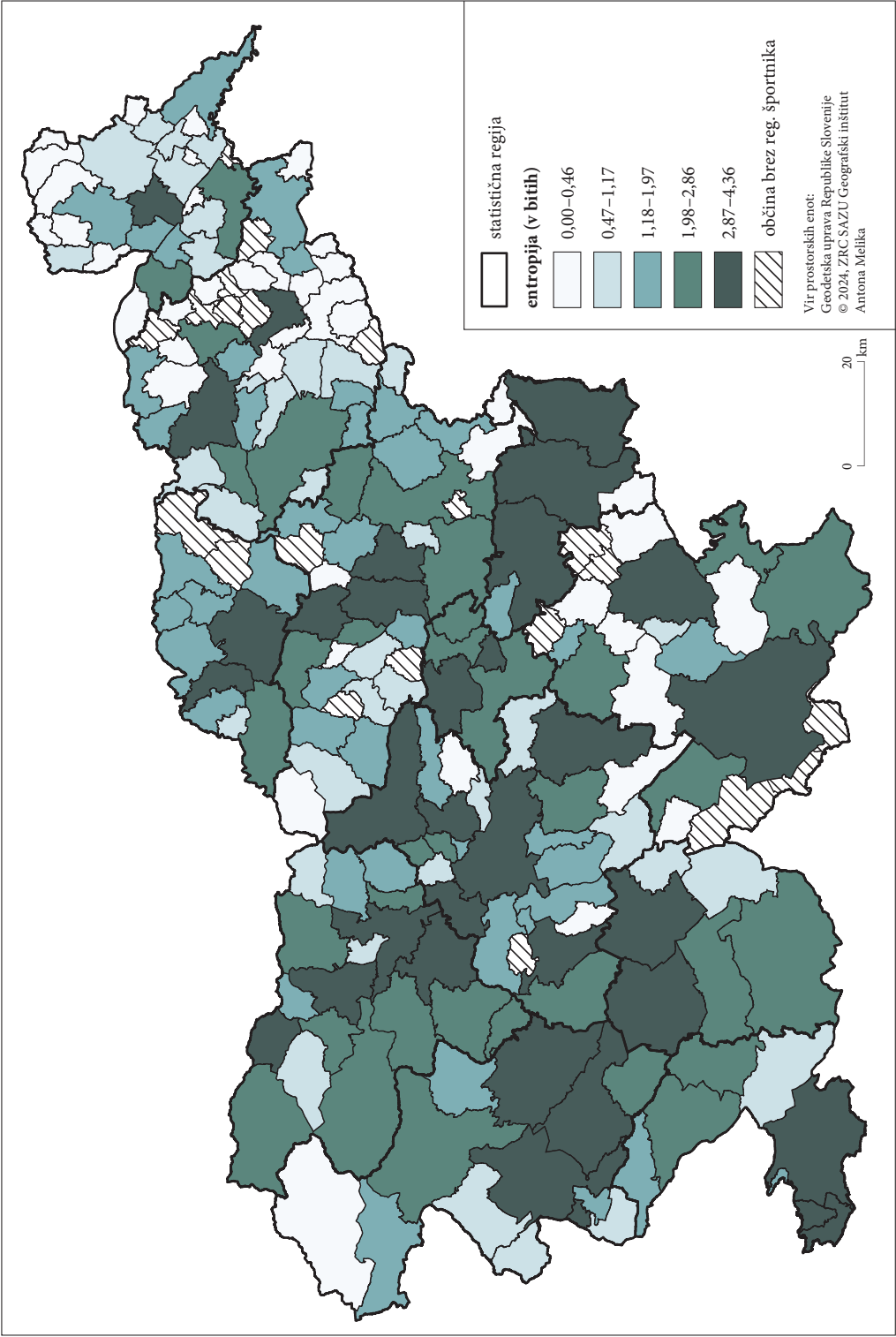
Stopnjo raznolikosti športnih zvez znotraj posameznih občin smo izračunali s pomočjo izračuna entropije razredov. Največjo raznolikost registriranih športnikov po športnih zvezah imajo po številu prebivalcev največje (mestne) občine Ljubljana in Maribor (obe imata entropijo nad 4 bite), nato sledijo Celje, Kranj, Nova Gorica in Koper (z vrednostmi nad 3,7 bitov; preglednica 6). Visoke vrednosti so opazne tudi v obalnih občinah, Posavju, Ljubljanski kotlini in v pasu občin med Novo Gorico in Cerknico (slika 6).

Podrobnejša analiza pokaže močno povezanost entropije s stopnjo centralnosti občinskega središča, torej podobno kot pri razmerju med številom registriranih športnikov in številom prebivalcev. Večjo raznolikost športnih panog od pričakovane imata zlasti Ravne na Koroškem (3,12) in Idrija (3,11), katerih občinski središči sta 4. stopnje centralnosti, manjšo pa Novo mesto (3,45; 2. stopnja), Trbovlje (2,76; 3. stopnja) ter Ormož (1,75; 4. stopnja) in Muta (1,35; 4. stopnja).

Preglednica 6: Seznam desetih občin z največjo raznolikostjo registriranih športnikov po športnih zvezah.

občina	število prebivalcev	stopnja centralnosti občinskega središča	število registriranih športnikov	število prisotnih športnih zvez	entropija deleža registriranih športnikov
Ljubljana	297.432	1.	12.180	56	4,36
Maribor	113.245	1.	3854	38	4,25
Celje	49.104	2.	1919	34	3,83
Kranj	57.081	2.	2605	34	3,77
Nova Gorica	32.013	2.	1165	29	3,75
Koper	53.915	2.	1626	33	3,70
Kamnik	30.093	3.	1085	21	3,63
Velenje	33.675	3.	926	28	3,51
Ajdovščina	19.898	3.	832	20	3,51
Krško	25.992	3.	703	18	3,49

Slika 6: Entropija deleža registriranih športnikov po športnih zvezah v posamezni občini. Slika prikazuje pet kvantilov. ► str. 45

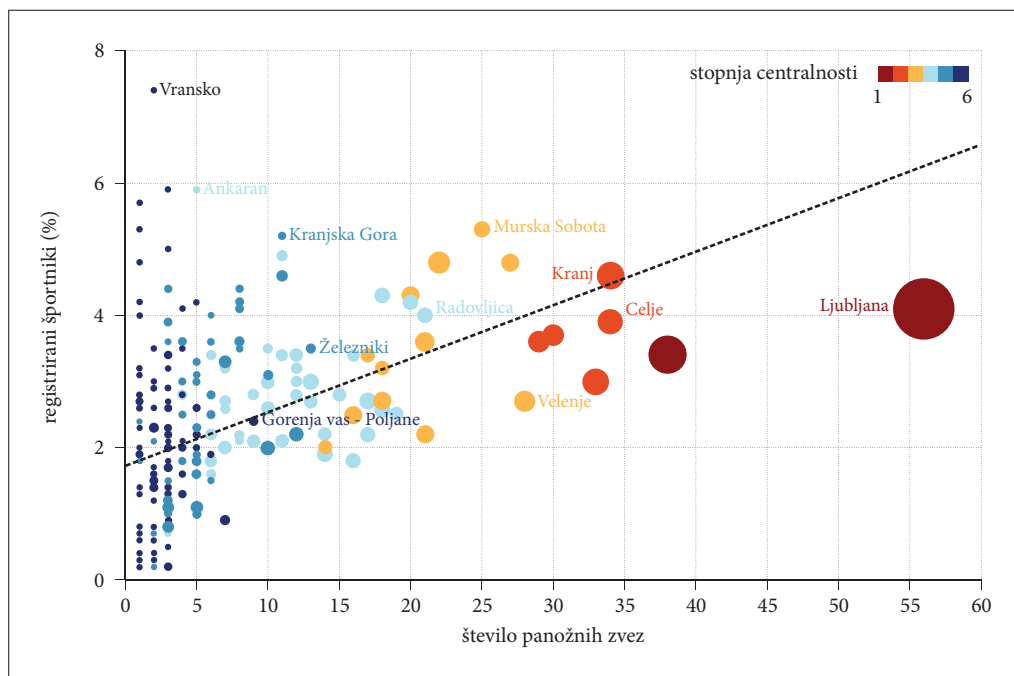


Izračun Spearmanovega koeficienta korelacije je pokazal, da je povezanost med številom prebivalcev in številom športnikov (pričakovano) zelo močna ($\rho = 0,88$, $p = 0,00$; $N = 212$), enako velja za število prebivalcev in entropijo ($\rho = 0,83$, $p = 0,00$; $N = 191$; tu je numerus manjši, saj 21 občin nima registriranih športnikov, zato tam ni entropije). Prebivalstveno večje občine imajo torej več registriranih športnikov in večjo raznolikost športnih zvez.

4 Razprava

V raziskavi smo ugotovili, da znotraj Slovenije prihaja do pomembnih razlik v prostorski razširjenosti tekmovalnega športa in posameznih športnih panog. Športna društva so zgoščena zlasti v večjih mestih, še posebej v tistih z večjo stopnjo centralnosti (slika 7). Ljubljana ima največ registriranih športnikov med slovenskimi občinami v slabih dveh tretjinah panog, zaradi česar jo lahko označimo tudi za športno središče države oziroma športno »vročo točko«. Osredotočenost športa v večjih mestih opazajo tudi druge raziskave, saj na razvoj in delovanje športnih klubov vplivajo prebivalstveno zaledje, gostota prebivalstva in infrastruktura (Farah s sodelavci 2018; Kozma s sodelavci 2022), tu pa so večja mesta v prednosti.

Po številu registriranih športnikov glede na število prebivalcev je sicer najbolj športna gorenjska statistična regija, kjer imata nadpovprečno vrednost tega kazalnika kar slabi dve tretjini občin, najmanj pa jugovzhodna Slovenija, kjer se s športom ukvarja skoraj dvakrat manj ljudi od državnega povprečja. Ob tem velja dodati, da so gorenjske občine najuspešnejše po nekaterih kazalnikih zdravja, kot sta prekomerna prehranjenost in telesni fitnes otrok (Statistični ... 2024), in imajo drugo največjo površino



Slika 7: Povezanost števila registriranih športnikov in števila panožnih zvez s stopnjo centralnosti občinskega središča. Za vsako stopnjo centralnosti so poimensko navedene občine z najvišjo vrednostjo vsakega izmed kazalnikov.

športnih objektov na prebivalca (Starček in Petrovič 2013). To kaže na pomen prisotnosti in dostopnosti športa tako za športno udejstvovanje kot za zdravje prebivalstva (Khan s sodelavci 2012), pri čemer so pomembni tako pogoji za športno udejstvovanje v naravi (Poljanšek in Strel 2017), kot infrastruktura (dosedanje raziskave njenega vpliva na športno udejstvovanje so sicer dale mešane rezultate; na primer Kokolakis, Castellanos-García in Lera-López 2017). Dobljeni rezultati se ujemajo z raziskavami, ki so večjo stopnjo telesne dejavnosti zaznale v zahodni in osrednji Sloveniji (Sila 2010). Celokupno gledano kljub določenim razlikam med posameznimi deli države v njej ni opaziti večjih »športnih vrzeli«, podobno kot to velja za športno infrastrukturo (Starček in Petrovič 2013). Na podlagi te analize lahko torej na splošno rečemo, da je tekmovalni šport večjemu delu slovenskega prebivalstva ustrezno dostopen. Ob tem se postavlja vprašanje, ali je to tudi posledica policentričnih politik v preteklosti, tudi na področju športa.

Prostorska razporeditev števila registriranih športnikov glede na število prebivalcev v državi ni povsem naključna oziroma kaže nekatere posebnosti, ki so glede na geografsko pestrost Slovenije pričakovane. Približno tretjina panožnih zvez kaže gručasto razporeditev svojih registriranih športnikov. Nekatere izmed njih so takšne zaradi naravnih pogojev (zimski in vodni športi, planinstvo), druge zaradi kulturnozgodovinskih okoliščin (na primer balinanje, hokej na ledu), tretje zaradi skromne razvitosti panog, ki v Sloveniji nimajo večje tradicije (baseball, softball, hokej na travi) in so zato lokalno omejene. Druge panoge so bolj nacionalnega značaja: takšen je nogomet, ki je najbolj množična športna panoga v 11 od 12 statističnih regij in v več kot polovici občin, kjer so prisotna športna društva. Vendar je analiza prostorske avtokorelacije pokazala, da ima tudi nogomet gručasto razporeditev: prevladuje zlasti v severovzhodni Sloveniji, še posebej v pomurski statistični regiji, kjer se z njim ukvarja več kot polovica registriranih športnikov (52,4 %). Za odgovor na vprašanje, ali je to predvsem posledica dobrih naravnih pogojev – veliko prostora in ravnega površja, ki je predpogoj za postavitve nogometnih igrišč, ki so v Pomurju zares številna (Starček in Petrovič 2013) – ali tudi drugih dejavnikov (zgodovinskih, političnih), bi bile potrebne dodatne raziskave. Nasploh preseneča gručasta razporeditev večine ekipnih športov, ki so v primerjavi z drugimi panogami manj odvisni od naravnih pogojev. To kaže na aktiven vpliv prostora – tako fizičnega kot družbenega – na športno udejstvovanje, ki ga posredno zaznavajo tudi druge raziskave (na primer Poljanšek in Strel 2017) in bi ga lahko opisali tudi kot »lokalno športno kulturo«, ki povečuje ali utrjuje zanimanje bodisi za šport nasploh bodisi za posamezne panoge.

Analiza raznolikosti panog je pokazala, da so v vseh dvanajstih statističnih regijah prisotna društva v okviru devetih športnih zvez – večinoma so to tudi najbolj množične športne panoge v državi. Če upoštevamo še devet panog, ki se pojavljajo v enajstih statističnih regijah, in pet panog, ki se pojavljajo v desetih, lahko ugotovimo, da je Slovenija kljub nekaterim razlikam razmeroma kohezivna država z vidika športa. V nekaterih, sicer prebivalstveno manjših statističnih regijah, kot so primorsko-notranjska, zasavska in koroška, je sicer prisotnih manj kot polovica panožnih zvez, kar kaže na šibek »športni kapital« teh regij. Močno povezanost s številom prebivalstva in storitvenimi dejavnostmi je pokazala tudi analiza na ravni občin – raznolikost športnih zvez je večja v prebivalstveno večjih občinah z višjo stopnjo centralnosti njihovega središča.

Pričujoča raziskava ima tudi nekatere omejitve. Za celovitejšo analizo bi bilo treba uporabiti tudi podatke o registriranih športnikih po kraju bivanja, ki bi obenem dali tudi dodaten vpogled v povezanost med športom in lokalnim okoljem, vendar teh podatkov nismo imeli na voljo. Prav tako bi bila dobrodošla delitev zvez na posamezne panoge (denimo znotraj smučarske zveze), česar pa obstoječi podatki niso omogočali. V prihodnje bi bilo analizo smiselno nadgraditi tudi s kategoriziranimi in vrhunskimi športniki ter morebiti s prisotnostjo klubov v ligaških tekmovanjih, s čimer bi pridobili še celovitejšo sliko razvitosti tekmovalnega športa znotraj države.

Rezultati pričujoče raziskave kažejo na razlike v razvitosti tekmovalnega športa in posameznih športnih panog znotraj Slovenije. Poznavanje teh razlik je pomembno z več vidikov: v prvi vrsti odstirajo lokalne pogoje za udejstvovanje v tekmovalnem športu (vidik enakih možnosti oziroma športa za vse). Čeprav nekatere študije kažejo, da so se športniki pripravljeni seliti (Gobec, Zupančič in Bon 2016),

so lokalna športna društva še vedno ključnega pomena za začetek ukvarjanja z določeno športno panogo (Skille 2014; Rossing s sodelavci 2016). Zato je pričujoča raziskava koristna z vidika odkrivanja vrzeli v mreži športnih društev, ki so še vedno temelj slovenske športne organiziranosti (Kolar, Jurak in Kovač 2010). Raziskava prispeva tudi k poznavanju družbeno-kulturne raznolikosti države, saj je šport pomembna kulturna značilnost Slovenije in sooblikuje slovensko identiteto. Raziskava hkrati odpira številna vprašanja in je lahko v oporo pri oblikovanju športnih, rekreativnih in zdravstvenih politik tako na nacionalni kot na lokalni ravni.

5 Sklep

Šport je le redko obravnavan kot pomembna prvina pokrajine, čeprav ima velik gospodarski in družbeni pomen, v športnih raziskavah pa se le redko pojavijo geografske vsebine. Raziskava je skušala odgovoriti na vprašanje, ali znotraj Slovenije prihaja do pomembnih razlik v prostorski razširjenosti tekmovalnega športa in posameznih športnih panog, kar do zdaj v Sloveniji še ni bilo preučeno. Navedeno smo ugotavljali z analizo razporeditve registriranih športnikov, športnih društev in njihovih pripadajočih panožnih zvez na ravni statističnih regij in občin.

Med statističnimi regijami ima največ registriranih športnikov na prebivalca gorenjska, najmanj pa jugovzhodna Slovenija. Najbolj razširjen šport v državi je nogomet, tako po številu registriranih igralcev kot po številu regij in občin, v katerih je prisoten. V 11 statističnih regijah in 102 občinah je tudi najbolj zastopana športna zveza.

S prostorsko-športnega vidika je Slovenija razmeroma raznolika država, kar se kaže v nekaterih lokalnih posebnostih oziroma v razlikah v zastopanosti posameznih športov tako na regionalni kot na lokalni ravni. To podkrepljuje tudi analiza prostorske avtokorelacije, v kateri slaba tretjina športnih zvez izkazuje gručasto razporeditev registriranih športnikov. Pri nekaterih zvezah oziroma panogah se kaže povezanost z naravnim okoljem oziroma pogoji, kot sta na primer zgoščenost jadrnanja v obalnih občinah ali smučarskih panog v hribovitih predelih. Ugotovili smo tudi razlike v razširjenosti največjih ekipnih športov: tako je nogomet nadpovprečno zastopan v Pomurju in Podravju, košarka na Notranjskem in Savinjskem, roket na Dolenjskem in v Posavju, odbojka pa na Koroškem. Občine z višjo stopnjo centralnosti svojega središča imajo večji delež registriranih športnikov in večjo raznolikost prisotnih športnih zvez. Navkljub tem razlikam in posebnostim Slovenijo lahko označimo za kohezivno državo z vidika športa, saj so najbolj množične športne panoge prisotne v večini statističnih regij.

Raziskava tako odstira določene prostorske vzorce pri razmestitvi tekmovalnega športa v Sloveniji, vključno s športnimi vročimi točkami in vrzelmi. Razmestitev ima svoje vzroke v različnih dejavnikih, tako naravnogeografskih (na primer nadmorska višina, relief) kot družbenogeografskih (na primer kulturnih, političnih, zgodovinskih, infrastrukturnih), ki pa ostajajo neraziskani. Upati je, da bo pričujoči članek vsaj deloma zapolnil raziskovalno vrzel na področju geografije športa, hkrati pa povečal zanimanje za preučevanje geografskošportnih vsebin.

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6 Viri in literatura

Glej angleški del prispevka.