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140-153 **MATEJA VOLGEMUT**
ALENKA FIKFAK
ALMA ŽAVODNIK
LAMOVSĚK

THE IMPACT OF PUBLIC OPEN SPACE ON THE IMAGE OF SMALL TOWN CENTRES
IN SLOVENIA

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Domzale



Grosuplje



Kamnik



Litija



Slovenska Bistrica



Slovenske Konjice



Skofja Loka



Trbovlje

FIG. 1 CENTRES OF EIGHT SELECTED TOWNS



MATEJA VOLGEMUT¹, ALENKA FIKFAK², ALMA ZAVODNIK LAMOVŠEK³

¹ UNIVERSITY OF LJUBLJANA, FACULTY OF ARCHITECTURE, ZISOVA 12, 1000 LJUBLJANA

 ORCID.ORG/0009-0009-4212-7038

² UNIVERSITY OF LJUBLJANA, FACULTY OF ARCHITECTURE, ZISOVA 12, 1000 LJUBLJANA

 ORCID.ORG/0000-0003-2064-0016

³ UNIVERSITY OF LJUBLJANA, FACULTY OF CIVIL AND GEODETIC ENGINEERING, JAMOVA CESTA 2, 1000 LJUBLJANA

 ORCID.ORG/0000-0001-6033-3358

mateja.volgemut@fa.uni-lj.si

alenka.fikfak@fa.uni-lj.si

alma.zavodnik@fgg.uni-lj.si

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THE IMPACT OF PUBLIC OPEN SPACE ON THE IMAGE OF SMALL TOWN CENTRES IN SLOVENIA

IMAGE OF THE CITY
PUBLIC OPEN SPACE (POS)
SLOVENIA
SMALL TOWNS
TOWN CENTRE

Despite all the principles of sustainable urban design, more and more spaces in small town centres are getting dedicated to traffic. Public open spaces (POS) in these towns are mainly reserved for car traffic, and social activities have been in decline. All at the expense of transportation space and built-up areas. As a result, there are fewer and fewer POS, which provide well-being and comfort to people, are accessible to all and are also attractively designed, allowing the development of a wide range of activities, and contributing to a town's good image. Therefore, the aim of this paper is to determine the state of provision of POS in the centres of selected small towns in Slovenia and to assess the image of these town centres. Using

various methods and instruments, we tested the hypothesis of whether there is a relationship between POS and the image of town centres. We used a cartographic method and a questionnaire survey, as well as statistical methods, in order to confirm the hypothesis. The study has revealed that groups of morphologically similar small towns are statistically different from each other in terms of observed relationships between POS and the image of the town centre. Therefore, a morphological analysis approach is very important in terms of evaluating the relationship between POS and the image of town centres. In conclusion, recommendations are given for the design of POS in small town centres.

INTRODUCTION

The quality of life can be improved by a high-quality built environment, in which the preservation and enhancement of open spaces and public green spaces play an important role (Treaty of Lisbon, 2007; Territorial Agenda 2030, 2020). Given the importance not only of access to services, but also to public open spaces (hereinafter: POS) (ESDP, 1999; CEMAT, 2000; EU Charter, 2000), the New Urban Agenda (2017) places responsibility for the planning, provision and maintenance of such spaces on (local) authorities. Moreover, the European Union aims to achieve a sustainable form of transport by 2050, which can only be achieved through deliberative planning (The New Charter of Athens, 2003) and the improvement and creation of POS that connect the urban fabric.

When it comes to literature, the definition of POS is unclear. Aspects considered involve control, ownership, use, activity, law, and sociology (Carmona et al., 2008), as well as physical manifestation (Jackson, 1984; Scruton, 1984; Carr, 1992; Brown, 2006; Tibbalds, 1992; Zukin, 1995; Kohn, 2004; Carmona et al., 2002) and types of POS (Carmona, 2010). American author Jackson (1984) defined POS as spaces that are accessible to all people, but he was also the first to point out that today these spaces include parking lots, landfills, and highways, so it is obvious that POS are understood as spaces for different types of use. The POS role that has been in-

creasingly emphasised is sociological (Lofland, 1998; Zukin, 1995; Gehl, 1996; Gehl and Gemzøe, 2000; Staeheli and Mitchell, 2008), meaning that space is not necessarily publicly owned, but is publicly accessible to all on equal terms. It offers a platform for the creation of strong socio-interpersonal ties (Kos, 2008), its physical appearance contributes to the town's image (Jackson, 1984; Tibbalds, 1992) and facilitates different types of activities (Gehl, 1996), maintained by public institutions (Jackson, 1984). It should also have other universal positive qualities (Carmona et al., 2008) such as order, accessibility, comfort, openness to all people, vitality, functionality, safety, robustness, integrity, and attractiveness. The latter contributes to the POS physical manifestation and the associated image of the city or town, which is one of the concepts of urban design (Carmona et al., 2008). Nasar (1998) explains that the environmental aspect is based on the physical form and is not an abstract aesthetic phenomenon. He also believes that the image of a city depends on the evaluations of the people who use and experience the city regularly, as well as its relationship with the surrounding landscape (Sopina et al., 2019). Nasar continued to rely on the concepts of likability, identity and structure, aiming to improve the image of the built environment, which he similarly to Lynch (1960), also studied in an inductive way. The image of the small town is a subjective term¹, because in general it can be derived only from individual assessments of town users and it also comes from the physical appearance of the POS.

A review of recent literature in the field of city image shows that for researching city and town image both qualitative and quantitative research methods (questionnaires, workshops, interviews, case studies, data analyses, office work, etc.) have been used. However, most of the studies conducted between 2001 and 2014 investigating the interaction

¹ In this research, it is expressed as an average score of individual assessments of the image of the city centre, resulting from a survey questionnaire.

² Services of general interest (SGI) are services that are not market-based and include essential public services to which citizens have equal rights and access (SeGI, 2013). In the study, only services that are provided at the local (primary) level are considered: education (kindergarten, elementary school and music school); local court; healthcare (health centre, pharmacy); public administration at the local level (municipal administration, police station); social services (retirement home, employment office, social work centre); cultural services (cultural centre or city cinema, library) and post office (SeGI, 2013; Nared et al., 2016).

³ The functional criterion takes into account the presence of SGI in small towns and was adopted from Nared et al. (2016).

⁴ Coastal towns should be considered separately, especially given the public interest in the coastal zone (Čok et al., 2018 and 2021).

between different city characteristics and city image (Gilboa et al., 2015) have three shortcomings: 1. they are often based on only one city, which precludes comparisons; 2. there is a lack of statistical validation of results; 3. they refer to a homogeneous group of city users, which prevents the possibility of generalising the results. The same applies to Slovenia, where most studies refer to a single case or are not conducted in a large number of cities that would serve as a starting point for achieving spatial development goals. One of the problems that Robertson (1999) mentions about small town urban centres is their poor image. Among the necessary features of urban centres and ways to revitalize them are the presence of POS and a strong interplay of public and other services (Robertson, 2001), which is also true for urban centres in Slovenia (Volgemut et al., 2021).

From the most important spatial planning acts to spatial planning manuals issued by the ministry responsible for spatial planning, spatial planning laws in Slovenia strategically guide both the image of settlements and the breakdown of built structures in accordance with POS. Accordingly, a sufficient proportion of POS is ensured in settlement planning by taking into account the needs for a distinctive image of the settlement (ZUreP-3, 2021) and an appropriate breakdown of the built structures, which derives from urban planning rules (Nikišić et al., 2021) and regulatory elements (Fikfak et al., 2020).

Since 2021, the Urban Settlements and Landscapes Regulation (ZUreP-3, 2021) has been planned for urban centres as well, and POS are among the recommended elements. Given the settlement system in Slovenia, which is mainly based on small towns, we decided to dedicate this paper to researching the image of town centres in small towns and their co-function with POS. We were particularly

interested in the interaction between these two aspects. Therefore, the working hypothesis of the research is: the image of city centres in small towns and the offer of POS in city centres are interconnected.

METHODS AND DATA

In order for the comparison to be representative, several small towns were included in the study (Robertson, 1999; Anholt, 2006). Qualitative and quantitative research methods (Parkerson and Saunders, 2005; Khirfan and Momani, 2013; Kalandides, 2011) involving a heterogeneous group of people and statistical methods were used. This was a continuation of the research that identified the role of POS in urban development (Vertelj Nared and Zavodnik Lamovšek, 2015).

SELECTION OF SMALL TOWNS

In Slovenia, the framework of polycentric urban development is formed by small and medium-sized towns (Zavodnik Lamovšek et al., 2008). This paper includes only small towns, since in Slovenia there are 82 of them and they are the most numerous of all towns. However, sociologists and urban geographers (Kos, 2008; Rebernik, 2010) argue that due to the impact of motorised and stationary traffic and the increasing mobility of the population, Slovenian small towns have been experiencing the process of withdrawal of urban activities to urban periphery. Combined with the negative effects of traffic congestion (Lavtžar et al., 2023) and the simultaneous increase of work at home (Čok and Furman Oman, 2019), the process of decline of life and activities in town centres is intensifying. The importance of POS from the point of view of the implementation of services of general interest (hereinafter SGI)² in small town centres has already been presented in a separate paper (Volgemut et al., 2021).

The selection of small towns was based on three criteria: (1) functional, (2) morphological, and (3) formal. Using the functional³ criterion, a broader selection of 33 towns was formed. The town of Piran⁴ was excluded due to its spatial characteristics (coastal town) and the particular distribution of SGI. Furthermore, we selected the small towns that differed according to the morphological indicator and considered their differences in terms of the number of inhabitants of the settlement and the municipality. We relied on Drozg (1998), who classified Slovenian towns according to the layout type and defined the physical elements of a town by several parameters: art-historical, social, economic and physical, which are reflected in its layout and image. He defined eight (8) groups (A to H)⁵

5 The typology of cities is adopted from Drozg (1998): A – towns with complete medieval, classicist and modernist ground plans (the group does not contain small towns);

B – towns with complete medieval and modernist and incomplete classicist ground plans (Postojna);

C – towns with complete medieval and modernist ground plans (*Škofja Loka*, *Krsko*, *Velenje*, *Ildrija*, *Lendava*, *Gornja Radgona*, *Ljutomer*, *Lenart*, *Radovljica*, *Ajdovščina*, *Slovenske Konjice*, *Slovenj Gradec*, *Kamnik*, *Sevnica*, *Brezice*, *Sezana*, *Crnomelj*, *Zalec*, *Slovenska Bistrica*, *Tolmin*, *Ilirska Bistrica*, *Vrhnika*);

D – towns with incomplete medieval and complete modernist ground plans (*Kočevo*);

E – towns with incomplete medieval and modernist ground plans (*Litija*, *Cerknica*, *Sentjur*, *Smarje*, *Trebnje*);

F – towns with complete medieval and incomplete modernist ground plans (*Ormoz*);

G – towns with complete modernist ground plan (*Domžale*, *Trbovlje*);

H – towns with incomplete modernist ground plan (*Gro-suplje*).

TABLE I TYPES OF POS (INDIVIDUAL DEFINITION)

| Code | Natural forms of POS | Code | Designed forms of POS |
|------|--|------|---|
| A.1. | Water bodies (e.g., rivers, streams, seashores, canals) | B.1. | Urban green spaces (e.g., parks, gardens, urban forests, cemeteries, watersides, skate parks, playgrounds, sports fields, running tracks) |
| A.2. | Green spaces (e.g., roadside greenbelts, forests, meadows) | B.2. | Paved surfaces (e.g., squares, promenades, streets closed to traffic, markets, squares in front of churches) |
| | | B.3. | Movement areas (e.g., national roads, municipal roads, streets and sidewalks, railroads, underpasses, bus or train stops, gas stations) |
| | | B.4. | Service areas (e.g., parking lots, service yards, production and industrial areas) |
| | | B.5. | Unused areas (e.g., renovation areas, abandoned areas, transition areas) |
| | | B.6. | Residential landscape (landscaped open space for neighbourhood residents) |
| | | B.7. | POS in connection with SGI buildings |

consisting of combinations of three basic layout types: medieval, classicist and modernist. The wider group of selected small towns⁶ is represented in seven (7) groups, as no town can be selected from group A, since it contains no small towns. In addition, all small towns with or without a defined medieval and modernist layout (groups C and E) and with or without a defined modernist layout (groups G and H) were included in the selection. Using a formal criterion⁷, we reduced the shortlist to eight (8) small towns (Fig. 1).

TYPES OF PUBLIC OPEN SPACE

The types of POS to be used in the study were identified based on literature review and fieldwork. They were divided into two groups: A) natural and B) designed forms of POS (Table I).

SPATIAL ANALYSIS OF TOWN CENTRES AND POS

Spatial analysis was performed using a cartographic method for a shortlist of eight small towns. We also conducted the mapping of POS in their town centre areas. By overlaying different geodetic data, mainly the land cadastre, the building cadastre and aerial photographs (GURS, 2016), we were able to determine the areas of different types of POS. The obtained results were verified by checking the actual location in person, based on which we were able to identify the POS in the town centre areas of eight selected small towns.

QUESTIONNAIRE SURVEY

After the spatial analysis, we created a questionnaire that included five different sets of questions, with a total of 14 questions and an additional demographic set with seven questions. The questionnaire was designed using the 1Ka tool (<https://www.1ka.si/>) and distributed to the residents of all 33 small towns

of the expanded list. The questionnaire was distributed throughout the municipalities, which informed their residents about the process and the purpose of the survey. A link to the online questionnaire was also provided to the local media, which assisted in inviting residents to complete the questionnaire. In total, between 1798 and 7110 respondents completed the questionnaire.⁸ This paper presents only the results related to the questions (1) about the interaction between the image of town centres and the availability of POS and (2) about small-town users' attitudes towards town centres.

After an initial analysis of the survey data at the summary and structural levels, descriptive and interference statistical analyses were conducted, including correlation and regression analyses, and a T-test for independent samples.

Statistical representativeness is ensured despite the fact that spatial analysis, a more precise study of POS, was carried out in 8 towns.

Since the key data for the presented research on POS do not exist in spatial information systems and other sources, it was necessary to create them anew, and such a precise spa-

⁶ Presented in footnote number 5.

⁷ The formal criterion represents the size of the town in terms of population, but also includes the population of the entire municipality of the selected towns (MNZ, 2018):

5,000 – 7,000 (in town), 14,500 – 16,000 (in the municipality): Litija, Slovenske Konjice;

7,500 – 12,000 (in town), 20,001 – 26,000 (in the municipality): Grosuplje, Slovenska Bistrica, Škofja Loka; 10,000 – 15,000 (in town), 16,001 – 20,000 (in the municipality): Trbovlje;

10,000 – 15,000 (in town), 26,001 – 36,000 (in the municipality): Domzale, Kamnik.

⁸ The survey forms that were at least partially filled in were considered; only empty surveys were excluded. 72.1% of women and 27.9% of men answered the questionnaire. The majority of respondents are middle-



tial analysis is very demanding and time-consuming. At the same time, it was assumed that it is not necessary to analyse two towns that are identical in terms of morphological type and have a similar number of inhabitants (in the town and in the municipality), as

both analyses would show similar results. Thus, data on 33 towns were obtained by means of a survey questionnaire, and in 8 towns by both methods. There was the opportunity to find out whether the results of both methods coincide.

FIG. 2 TOWN CENTRES AREAS OF THE EIGHT SMALL SHORTLISTED TOWNS (ALL IMAGES HAVE THE SAME SCALE, EXCEPT FOR THE LAST ONE, WHICH IS TWICE AS SMALL DUE TO THE DISTINCT LINEAR SHAPE OF THE TOWN CENTRE AREA)

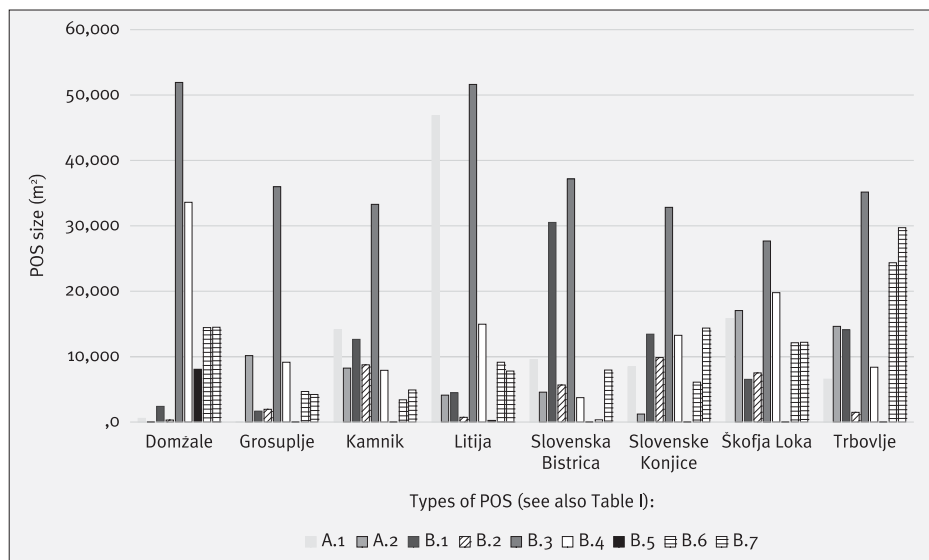
-aged (41-60 years old, 52%), followed by the age group of 21-40 years (35.8%), then the older (61 years or older, 9.6%), and the younger (under 20 years old, 2.5%). The majority of respondents have a college, high school, or graduate degree (62%), while few have less than a college degree (1.4%). In between are those with a finished high school (25.3%) and a doctorate (11.3%). The respondents are employed in the town where they live (52.9%), not employed (retired, students, etc. 14.3%), or employed in another city or town (32.8%). The majority of respondents live in a house (76.3%), less of them in an apartment building (23.7%). The majority of respondents have lived in the town for more than 20 years (72.4%), followed by those who have lived in the town for up to 20 years (14.2%), up to 10 years (7.4%), and up to 5 years (6%). The survey was conducted between October 5, 2018 and January 5, 2019.

RESULTS

PHYSICAL OCCURRENCE AND THE USE OF POS IN TOWN CENTRES

Uniform areas in 8 town centres were determined for the purpose of spatial analysis, where POS and SGI are located. Using a cartographic method, we found that the town centres areas in the small towns are of the same size (27 ha), but differ in terms of morphology and shape, which is due to the fact that the selected towns differ in terms of relief, natural features, cultural heritage, etc. (Fig. 2).

FIG. 3 SIZE OF POS BY TYPE IN THE TOWN CENTRES OF THE EIGHT SELECTED SMALL TOWNS



The selected small towns also differ in terms of the size of POS in the town centres (Fig. 3). The largest share of POS in the selected small towns belongs to the type B.3: movement areas (mainly national and/or municipal roads). In addition, a large share are service areas (Fig. 4: B.4.), which confirms the initial findings about the increasing motorization of small towns, which is pushing POS to their periphery. In terms of POS types, Domzale is the city with the highest share of movement and service areas, which have the greatest impact on the very high presence of cars in the town centre.

On the other hand, analysis results have shown that the size of small towns (the number of inhabitants in a settlement and a municipality) and the degree of centrality (Nared et al., 2016) have no influence on the availability of POS in the centres of small towns.

The largest share of paved surfaces (Fig. 4: Type B.2.) is in Slovenske Konjice, Kamnik, Škofja Loka and Slovenska Bistrica. All these four small towns have a medieval layout (morphological type C) and were subjected to various measures and interventions in modern times. Nevertheless, they have preserved a good appearance of POS (squares and promenades), which certainly has an influence on the overall good image of the town centre.

In other small towns (morphological types E, G and H), where the share of paved surfaces is low, POS in correlation with SGI buildings (Fig. 4: Type B.7) make an important contribution to the overall extent of the POS. The landscaped POS for neighbourhood residents (Fig. 4: Type B.6), often designed as a park with a children's playground, is also important for pedestrians and bicyclists.

In small towns, water areas (Fig. 4: A.1.) are an important POS when connected to urban green spaces (Type B.1.). However, Litija, which is located on the Sava River, has only a small share of POS along natural areas. The largest share of urban green space is in Slovenska Bistrica, where a large park is part of the town centre (Fig. 4: B.1). Green spaces often exist only in the form of a green belt along the street (Fig. 4: A.2), which has no function and therefore is not used by the residents (Fig. 4: B.5.). In Domzale it is defined as a functionally degraded area.

The results of the questionnaire survey (Table II) show that many users in the selected small towns believe that there is enough POS in the town centre (36%). The smallest share of respondents think that town centres are very well equipped with POS (5%), with a significantly higher share of respondents who are very dissatisfied (11%) or dissatisfied (28%) with the provision of POS. If we exclude the respondents who are undecided (19%), we can conclude that the opinions on the provision of POS in general are quite divided.

The respondents also felt that the provision of POS in the town centres of the small towns differed to a great extent. In Velenje, residents are very satisfied with the presence of POS (66%), while in Trebnje and Trbovlje less than a half of residents are satisfied. The differences between the town centres in the small towns described above were already established by the spatial analysis, which has also been confirmed by the results of the questionnaire survey.

The data from the survey (Table II) and the spatial analysis (Fig. 3) coincide, however the spatial analysis brings a more detailed understanding of POS. The city of Litija, which

A.1. Water bodies

In Škofja Loka, the Sora River flows through the town centre

A.2. Green spaces

Green spaces in relation to roads (Grosuplje)

B.1. Urban green spaces

Central park in Slovenska Bistrica

B.2. Paved surfaces

Large paved areas in Kamnik

B.3. Movement areas

There are two gas stations in the town centre of Litija

B.4. Service areas

A parking lot in Grosuplje

B.5. Unused areas

In the town centre of Domzale there is an abandoned area without function

B.6. Residential landscape

In Trbovlje, there is a POS for residents in a residential area

B.7. POS in connection with SGI buildings

The area in front of the district court in Slovenske Konjice is a square

among the 8 cities has the lowest average rating of POS (Table II), has also a small size of POS (Fig. 3) with positive universal qualities (such as type B.2). This also applies to Grosuplje, Domzale and Trbovlje and vice versa for Slovenske Konjice, Kamnik, Škofja Loka and Slovenska Bistrica. In the chapter *Relationship between the provision of POS and the image of town centres*, the matching of the results is also statistically confirmed.

The town centre of the selected small towns also contains unused areas (Type B.5). Most

respondents are of the opinion that the towns contain abandoned areas, as evidenced by the highest share of residents (37%) who believe there are numerous unused areas in the small town centres. As mentioned above, the town centre of Domzale has a high presence of unused areas (Figure 4: B.5.). This finding is also confirmed by the results of the questionnaire survey (N = 1910), as the presence of undeveloped areas (Fig. 5) is rated the highest (3.88) in Domzale, while the lowest (2.57) is found in Žalec. The average rating

FIG. 4 ILLUSTRATION OF THE POS TYPES IN SELECTED SMALL TOWNS*

* The POS types are intentionally shown in different small towns, although all types of POS are mostly found in all the selected small towns.

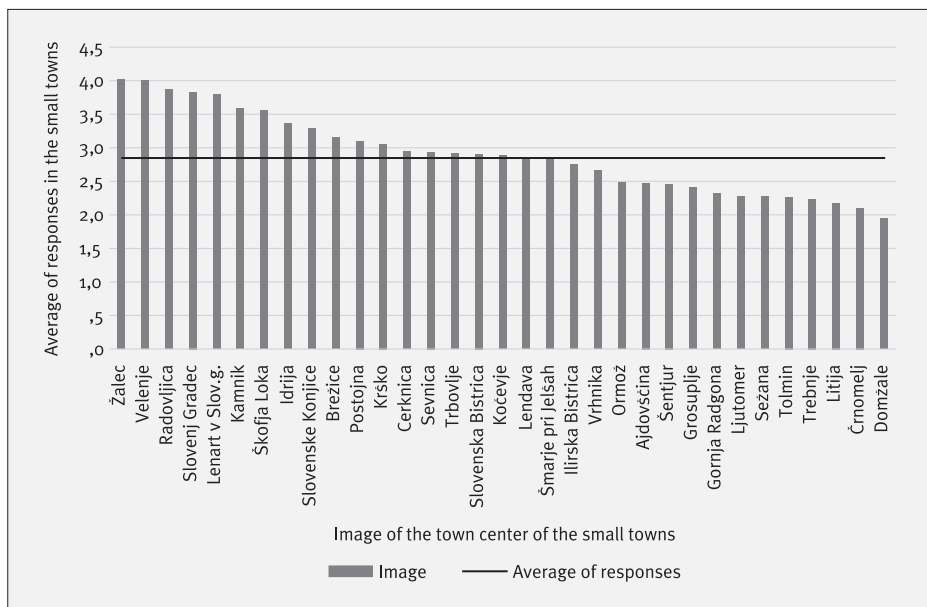
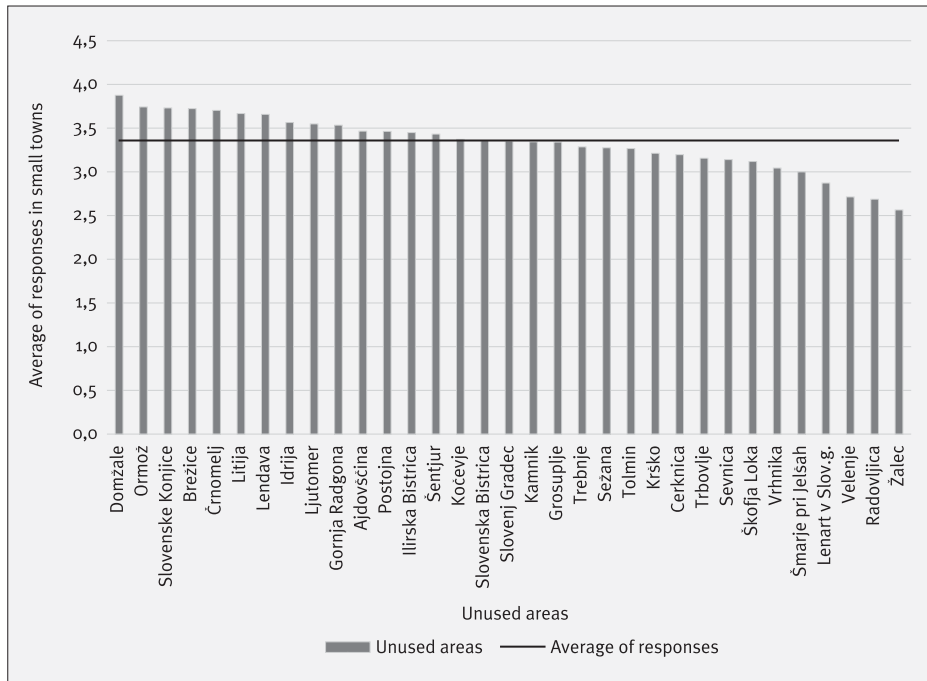


FIG. 5 PRESENCE OF UNUSED AREAS

FIG. 6 USERS' ASSESSMENT OF THE IMAGE OF THE TOWN CENTRE IN THE SMALL TOWN (TOTAL: N = 2017)

for unused areas in all selected small towns is also relatively high (3.36).

IMAGE OF TOWN CENTRES IN SMALL TOWNS

As the presence of the unused areas, residents also rated the image of the town centre on a five-point scale, by agreeing with the statement "The image of the town centre is good". The average rating ranged from 1.94 to 4.02 and the average score of all responses was 2.85 (Fig. 6). The opinion of the users

is also divided regarding the image of the selected small town centres.

While the largest share of all residents agree that the image of the town centre is good (34%), there is a noticeable dispersion of responses; 16% strongly disagree, 24% disagree and 19% are undecided. The share of those who strongly agree that the image of the town centre is good is very low (6%).

RELATIONSHIP BETWEEN THE PROVISION OF POS AND THE IMAGE OF TOWN CENTRES

We statistically confirmed the coincidence of the results from the questionnaire survey and the spatial analysis in eight towns. The results obtained were similar. We tested the correlation between the questionnaire data (Table II, average rating, N = 523) and the spatial analysis (Fig. 3) in relation to POS provision (Type B.2 size in m²). The calculated correlation coefficient of 0.82 ($p < 0.01$) indicates a very high correlation between the two variables. Small towns with a better rated POS provision have more paved surfaces and vice versa. Thus, the regression model proved to be statistically significant [$F(8, 6) = 12.67, p = 0.012, R^2 = 0.68$]. No correlation can be confirmed for other types of POS.

Based on the results of the questionnaire survey, we can conclude that the selected 33 small towns with a better assessed image of the town centre (Fig. 6) also have a better assessment of the provision of POS (Table II) and vice versa. The calculated correlation coefficient of 0.81 ($p < 0.05$) indicates a high correlation between the two variables. The regression analysis of the influence of POS provision on the image of the town centres showed that the regression model was statistically significant [$F(1, 31) = 60.94, p < 0.001$]. The POS provision variable can explain 66% of the variable of the image assessment of town centres in small towns. It can be argued that the POS provision has a significant impact on the image assessment of town centres, i.e., a higher POS value leads to a higher image rating of town centres in small towns.

We also confirmed the correlation between the two variables on a sample of 8 towns. The size of paved surfaces (Fig. 3, type B.2 size in m²) is related to the image of town centres (Fig. 6, N = 550) in small towns. The calculated correlation coefficient of 0.89 ($p < 0.05$) indicates a high correlation between the two variables. Small towns with a better rated image of the town centre have larger paved surfaces and, conversely, small towns with a worse rated image of the town centre do not have sufficiently large paved surfaces. The regression model also proved to be statistically significant [$F(8, 6) = 22.20, p = 0.003$].

TABLE II OPINIONS OF USERS OF SMALL TOWNS ABOUT THE AVAILABILITY OF POS IN THE TOWN CENTRES (TOTAL: N = 1909)

| Town | There are enough POS in the town centre | | | | | | | | | | |
|--------------------|---|---------------|------------|---------------|------------|---------------|------------|---------------|----------------|---------------|----------------|
| | Strongly disagree | | Disagree | | Undecided | | Agree | | Strongly agree | | Average rating |
| | N | Response rate | N | Response rate | N | Response rate | N | Response rate | N | Response rate | |
| Ajdovščina | 9 | 20.9% | 14 | 32.6% | 4 | 9.3% | 13 | 30.2% | 3 | 7.0% | 2.70 |
| Brezice | 5 | 10.4% | 13 | 27.1% | 15 | 31.3% | 10 | 20.8% | 5 | 10.4% | 2.94 |
| Cerknica | 9 | 12.5% | 25 | 34.7% | 14 | 19.4% | 21 | 29.2% | 3 | 4.2% | 2.78 |
| Črnomelj | 21 | 32.3% | 31 | 47.7% | 8 | 12.3% | 4 | 6.2% | 1 | 1.5% | 1.97 |
| Domzale | 13 | 12.7% | 37 | 36.3% | 21 | 20.6% | 27 | 26.5% | 4 | 3.9% | 2.73 |
| Gornja Radgona | 2 | 3.4% | 25 | 42.4% | 12 | 20.3% | 20 | 33.9% | 0 | 0.0% | 2.85 |
| Grosuplje | 16 | 34.0% | 13 | 27.7% | 10 | 21.3% | 7 | 14.9% | 1 | 2.1% | 2.23 |
| Idrija | 1 | 2.5% | 13 | 32.5% | 7 | 17.5% | 18 | 45.0% | 1 | 2.5% | 3.13 |
| Ilirska Bistrica | 4 | 5.8% | 27 | 39.1% | 19 | 27.5% | 18 | 26.1% | 1 | 1.4% | 2.78 |
| Kamnik | 4 | 6.2% | 13 | 20.0% | 9 | 13.8% | 35 | 53.8% | 4 | 6.2% | 3.34 |
| Kočevo | 0 | 0.0% | 9 | 22.0% | 15 | 36.6% | 17 | 41.5% | 0 | 0.0% | 3.20 |
| Krsko | 8 | 12.3% | 13 | 20.0% | 9 | 13.8% | 32 | 49.2% | 3 | 4.6% | 3.14 |
| Lenart v Slov.g. | 2 | 3.6% | 3 | 5.5% | 17 | 30.9% | 27 | 49.1% | 6 | 10.9% | 3.58 |
| Lendava | 3 | 8.3% | 4 | 11.1% | 11 | 30.6% | 18 | 50.0% | 0 | 0.0% | 3.22 |
| Litija | 32 | 34.0% | 39 | 41.5% | 15 | 16.0% | 8 | 8.5% | 0 | 0.0% | 1.99 |
| Ljutomer | 24 | 19.4% | 38 | 30.6% | 21 | 16.9% | 35 | 28.2% | 6 | 4.8% | 2.69 |
| Ormož | 11 | 16.9% | 15 | 23.1% | 11 | 16.9% | 27 | 41.5% | 1 | 1.5% | 2.88 |
| Postojna | 4 | 6.0% | 19 | 28.4% | 10 | 14.9% | 30 | 44.8% | 4 | 6.0% | 3.16 |
| Radovljica | 3 | 4.5% | 9 | 13.6% | 5 | 7.6% | 34 | 51.5% | 15 | 22.7% | 3.74 |
| Sevnica | 11 | 19.0% | 14 | 24.1% | 11 | 19.0% | 19 | 32.8% | 3 | 5.2% | 2.81 |
| Sezana | 1 | 3.6% | 7 | 25.0% | 5 | 17.9% | 14 | 50.0% | 1 | 3.6% | 3.25 |
| Slovenj Gradec | 4 | 5.9% | 14 | 20.6% | 13 | 19.1% | 34 | 50.0% | 3 | 4.4% | 3.26 |
| Slovenska Bistrica | 7 | 10.1% | 22 | 31.9% | 13 | 18.8% | 23 | 33.3% | 4 | 5.8% | 2.93 |
| Slovenske Konjice | 1 | 3.8% | 5 | 19.2% | 5 | 19.2% | 14 | 53.8% | 1 | 3.8% | 3.35 |
| Šentjur | 14 | 26.4% | 17 | 32.1% | 11 | 20.8% | 10 | 18.9% | 1 | 1.9% | 2.38 |
| Škofja Loka | 6 | 7.9% | 21 | 27.6% | 13 | 17.1% | 34 | 44.7% | 2 | 2.6% | 3.07 |
| Šmarje pri Jelšah | 2 | 5.7% | 13 | 37.1% | 7 | 20.0% | 13 | 37.1% | 0 | 0.0% | 2.89 |
| Tolmin | 3 | 10.0% | 6 | 20.0% | 12 | 40.0% | 7 | 23.3% | 2 | 6.7% | 2.97 |
| Trbovlje | 1 | 2.3% | 22 | 50.0% | 5 | 11.4% | 15 | 34.1% | 1 | 2.3% | 2.84 |
| Trebnje | 10 | 17.9% | 28 | 50.0% | 10 | 17.9% | 8 | 14.3% | 0 | 0.0% | 2.29 |
| Velenje | 0 | 0.0% | 0 | 0.0% | 3 | 10.3% | 19 | 65.5% | 7 | 24.1% | 4.14 |
| Vrhnika | 6 | 9.0% | 20 | 29.9% | 16 | 23.9% | 22 | 32.8% | 3 | 4.5% | 2.94 |
| Žalec | 0 | 0.0% | 5 | 10.6% | 4 | 8.5% | 27 | 57.4% | 11 | 23.4% | 3.94 |
| Total | 237 | 11.1% | 554 | 27.7% | 361 | 19.4% | 660 | 36.3% | 97 | 5.4% | 2.91 |

Legend: white and light grey: lower values of assessments, grey: average values of assessments, dark grey: higher values of respondents' agreement with the statements in the questionnaire.

The variable of the size of paved surfaces can explain 79% of the variable of the image of a town centre. It can be argued that the extent of paved surfaces has a significant impact on the image assessment of town centres in small towns. This raises the question of how much paved surface is still acceptable according to the definitions of qualitative POS, on which different opinions were found in the literature (Gehl, 1996).

According to the respondents, movement areas (Fig. 3, POS type B.3.) worsen the image

of town centres (Fig. 6, N = 550) in 8 small towns ($r = -0.89$, $p < 0.01$). Thus, the more space available for car traffic, the worse the image of the town centre. The variable of space available for movement areas, especially roads, can explain 79% of the variable of the image of a town centre [$F(8, 6) = 22.12$, $p = 0.003$]. The image of a town centre (Fig. 6, N = 2017) and the presence of unused areas (Fig. 5, N = 1910) are also negatively correlated, because the presence of these areas worsens the image of town centres in the



FIG. 7 EXAMPLE OF THE RENOVATION OF AREAS IN THE TOWN CENTRE OF DOMŽALE, WHICH WAS CARRIED OUT IN 2021 (AUTHORS: MATEJA AND MIHA VOLGEMUT)

sample of 33 small towns ($r = -0.615$, $p < 0.01$). However, it is more difficult to talk about the influence of the variables on each other, as the variable of the presence of unused areas can explain only 38% of the variable of the image of town centres [$F(1, 31) = 18.83$, $p = 0.0001$].

In addition, we tested whether small towns that differ from each other on the basis of the morphological criterion also differ from each other, on average and in a statistically significant way, in terms of the POS provision (Table II) and the image of the town centre (Fig. 6). The analysis was performed for two morphologically similar groups of towns (Footnote 5, C – towns with complete medieval and modernist ground plans and E – towns with incomplete medieval and modernist ground plans), as other groups of towns have a rather small percentage of small towns. It can be claimed that in terms of statistics, the small-town group C ($M = 3.12$; $SD = 0.47$) had a significantly higher [$t(7) = 3.44$; $p = 0.01$] evaluation of POS provision than the small-town group E ($M = 2.46$; $SD = 0.37$). The image of the town centre was also rated significantly [$t(11) = 2.59$; $p = 0.02$] higher in the small-town group C ($M = 3.06$; $SD = 0.63$) than in the small-town group E ($M = 2.53$; $SD = 0.34$).

DISCUSSION AND CONCLUSION

Town centres in small towns differ in the size, use, function, and physical appearance of POS, as confirmed by both the spatial analysis and the questionnaire survey. The results of the two methods are consistent with each other, so we can confirm the hypothesis that the image of city centres in small towns and the offer of POS in city centres are interconnected.

The presence of different types of POS in town centres of small towns forms a continuous network of paths and connections between built structures (Tibbalds, 1992). However, it has been noticed that paved surfaces are accessible to all, well maintained, walkable, comfortable, durable, multifunctional, identifiable, safe, and visually appealing, i.e., they have universally positive qualities (Carmona et al., 2008). In other words, this POS type has a qualitative impact on the well-being of small-town users and it does not account only for the suitability for different uses. Summarising Carmona's (2010) distinction of POS, it can be argued that the movement area (POS type B.3.), which in most cases refers to traffic space, is negative space as it contributes to the disorganization in town centres of small towns and deteriorates their image. We assume that a similar argument could be made for service areas (POS type B.4) and abandoned areas (POS type B.5.) or vice versa for residential landscapes (POS type B.6) and POS in connection with SGI buildings (POS type B.7). However, this was not confirmed statistically. The presented way of analysing the POS of town centres in the selected small towns confirms that a POS with universal positive qualities enhances the image of town centres in small towns.

Finally, we add recommendations for the design of different POS types in town centre areas of small towns which are derived from the analysis of towns⁹ that are well equipped with POS (Table II, Fig. 3) and have a good image rating (Fig. 6). Green spaces (POS type A.2.), such as unbuilt areas in town centres,

⁹ The planning recommendations are derived from the spatial analysis of towns: Kamnik, Slovenske Konjice, Škofja Loka and Slovenska Bistrica.

act as meadows and forests where users themselves determine the use and activities. Most importantly, these areas reduce the total built-up area of town centres. Urban green areas cover at least 5% of a town centre area, as defined in this paper. Parks in town centres of small towns are an important spatial element and their location should coincide with the location of SGI. This is because the frequency of their use is low if they are too far from the SGI.

Paved surfaces come in many forms. They may be squares, promenades, streets closed to traffic, markets or squares in front of churches, and other forms of variously paved surfaces of public character. According to the analysis, they cover at least 3% of a town centre area, to ensure that residents have a good relationship with the town centre. In town centres, these areas can be gained by dedicating streets primarily to sustainable traffic – pedestrianisation (Tibbalds, 1992) – by narrowing roadways or removing automobile traffic. Some areas simply need to be redesigned, given a new function, or simply improved visually through renovation, urban furniture, and the like. All of this can be accomplished more easily if the land is publicly owned (Speck, 2012). Therefore, the ownership aspect of POS is also important, al-

though it is not the focus of this paper. Nevertheless, depending on spatial planning plans and actions at the municipal level, it is possible to acquire and develop publicly owned land, as shown in the example in Fig. 7.

In order for the users of small towns to have a good relationship with the town centre, movement areas must be limited. Analysis has shown that they cover a maximum of 10% of the area of a town centre. These elements (streets, underpasses, bus and train stops) should be designed very carefully according to the human scale (Gehl, 1996), in relation to pedestrian elements, pavement areas and other paved surfaces of POS.

We can conclude that the study of small towns is also important from the point of view of POS. Both the spatial analysis and the answers of the respondents has shown that POS and small town centres are very important from the point of view of their use and the experiential aspect of town centres. The results presented may be helpful not only to spatial planners, but also to decision makers and other individuals who have an impact on the types, extent and image of POS in town centres of small towns.

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Tech. Assist. **MATEJA VOLGEMUT**, Ph.D. Her current research interests include urban design and open public space.

Prof. **ALENKA FIKFAK**, Ph.D., MLA. Scientific and professional interests are focused on rural planning, inclusive design, urban heat islands, healthy cities and urban design.

Assist. Prof. **ALMA ZAVODNIK LAMOVŠEK**, Ph.D. Her current research interests include land use, brown-field regeneration and regional development.

Conceptualization: M.V., A.F. and A.Z.L.; methodology: M.V., A.F. and A.Z.L.; software: M.V.; validation: M.V., A.F. and A.Z.L.; formal analysis: M.V.; investigation: M.V., A.F. and A.Z.L.; resources: M.V., A.F. and A.Z.L.; data curation: M.V.; writing – original draft preparation: M.V. and A.Z.L.; writing – review and editing: M.V., A.F. and A.Z.L.; visualization: M.V.; supervision: A.F. and A.Z.L.; project administration: M.V., A.F. and A.Z.L.; funding acquisition: M.V., A.F. and A.Z.L.

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ILLUSTRATION SOURCES

FIGS. 1-6 Authors, 2023

FIG. 7 Photo: Jurij Bizjak, 2022

TABLES I, II Authors, 2023

