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A multidimensional analysis of spatial order in public spaces: a case study of the town Morąg, Poland

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Abstract. Centrally located public spaces, such as old towns, are an important feature of historic towns. They are often the most characteristic and representative element of a town that brings together members of the local community, plays various sociological and social roles and promotes direct interactions between the users of space. Only high-quality public spaces can effectively fulfil their role. The aim of this study was to analyse spatial order in public spaces on the example of the Old Town district of Morąg in North-Eastern Poland. The quality of public spaces was analysed with the use of a self-designed method, a field inventory and a questionnaire survey involving 100 members of the local community who were asked to evaluate the quality of public spaces in the town. The results of the comparison were used to identify public spaces that require revitalisation. The study demonstrates that spatial order directly influences the quality of public spaces. Our findings indicate that multidimensional analyses of spatial order and opinion surveys provide valuable inputs and should be included in studies evaluating the quality of public spaces.

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Contents:

1. Introduction

1.1. Public spaces

Since ancient times, the definition of public space has been nearly identical to that of municipal space (Low and Smith, 2013). For this reason, public spaces are often referred to as a city's or town's genetic code, which contains important historical information. The above applies particularly to centrally located public spaces in historic towns whose urban form has evolved throughout the centuries. Old Town districts are often the most characteristic and representative element of a town which brings together members of the local community and plays various sociological and social roles. The market squares in Old Towns are distinctively delimited areas, and they have considerable historical and cultural value (Gawryluk, 2008). In the past, the market square was the most prominent part of a town, and played a very important social role and contributed to social awareness (Kobylarczyk, 2012; Madanipour, 1999; Lees, 1994;). Today, the market square is also one of the key elements of the urban core, and its unique character is influenced not only by architecture, but also by intangible factors such as historical memory (Freino, 2009). Old Towns contribute to a sense of local identity by following local traditions and customs (Gyurkovich, 2007). The cultural and historical identity of an Old Town constitutes a framework that describes the function of public spaces (Nawrocki, 2011).

Why is quality such an important attribute of public space? Public spaces play the same basic role regardless of their definition. They are designed with local residents in mind, and they cater to social needs. The main role of public spaces is to promote interactions between the users of space and to fulfil the needs of the local community (Pluta, 2014; Lorens, 2010; Public Space Records, 2009). High-quality public spaces improve the quality of life: they promote a sense of local identity and increase the attractiveness of a given locale; they improve living standards, quality of environment, physical and mental health and human relations; they promote integration of the local community, popularisation of culture (in particular regional culture), socialisation of children, children's intellectual and sensory development, and activity levels in all age groups (Ghavampour et al., 2017; Richardson et al., 2017; Groeger, 2016; Koohsari et al., 2015; Olbińska, 2014; Wolch et al., 2014; Konecka-Szydłowska, 2013; Cities of tomorrow. …. 2011; Gehl, 2011; McConnell & Walls, 2005; Wu and Plantiga, 2003; Thompson, 2002). Public spaces are the symbols of a city and community life, and they instil a sense of shared responsibility for local resources.

The quality of public space is determined by spatial order in architectural, aesthetic, social, environmental and functional dimensions (Cilliers et al., 2015). The most important social processes and phenomena are reflected by changes in space (Dymnicka, 2008); therefore, the degree of spatial cohesion mirrors the local community's level of development. Multidimensional spatial order should be strictly preserved in Old Towns to adequately protect sites with outstanding cultural and historical value.

The inhabitants of small towns often live by the rules of a world gone by. They have a strong need for interpersonal contact, and they are close to their neighbours and other members of the local community. In small towns, elderly people account for a large part of the local population. Senior residents dislike change, external intervention and signs of modernity, which contributes to the popularity of

public spaces with a more conventional character (Zemło, 2011).

1.2. Revitalisation of public spaces

Revitalisation is the economic, social and environmental revival of towns and cities. During this process, old functions are recreated and new functions are introduced to dilapidated urban areas, districts and landscapes. The aim of revitalisation is to navigate change in degraded areas by creating new opportunities for social, economic and cultural development. Revitalisation efforts combine technical measures with economic revival programmes as well as solutions addressing vital social problems. These measures restore spatial order, improve the quality of life and rebuild social ties (Bielawska-Roepke, 2008). The effects of revitalisation are felt not only in the targeted area, but throughout the entire city. Revitalisation programmes increase a city's attractiveness, standard of living, and tourist and investor appeal.

Many revitalisation schemes aim to revive the historic downtown areas of towns and cities. The quality of public space is a crucial determinant of a city's attractiveness, and revitalisation programmes lead to the gentrification of Old Towns, where positive changes are usually most visibly manifested in the market square (Zagroba, 2016; Kosiński, 2010). Such measures pose a considerable challenge for both urban planners and architects. The process of restoring the authentic character of an Old Town can be very difficult, if not impossible, due to the accumulation of negative phenomena (Chmielewski, 2016; Zwoliński, 2011). Members of the local community in small towns often have ambivalent attitudes towards revitalisation programmes. They are generally critical of neglected and dilapidated public spaces, but they rarely initiate any repair measures and wait for external stimuli. When a revitalisation programme is implemented, local residents eagerly voice their reservations and criticism. The relations between local inhabitants and the external initiator of change are rarely unperturbed (Ciechorska-Kulesza, 2010).

2. Analysed area and methodology

2.1. Description of the analysed area

The town of Morąg is the social, economic and cultural centre of the municipality of Morąg. The town occupies a total area of 6.2 km^2, and it had a population of 14,042 in 2016. The Old Town district is situated in the centre of Morąg, and it is inhabited by around 1,200 residents. The Old Town's architectural design (Fig. 1) dates back to the second half of the 19th century and the first half of the 20th century.

Fig. 1. Old Town in Morąg – bird's-eye view
Author: W. Wójcik

The Old Town is the historic core of Morąg, and its boundaries correspond to the town's boundaries in the mid 18th century (buildings depicted in the town map of 1754 have survived to this day, Abridged Historical and Urban Case Study. Conservation Guidelines and Recommendations for the town of Morąg, 1993). In the east, the Old Town is flanked by the remnants of a historical fortified wall, and in the west it overlooks Rozlewisko Morąskie (Morąg Swamp). The historical Town Hall Building is the central point of the analysed district. The Old Town is partly well maintained, and some tenement houses have been renovated. However, not all buildings were included in the revitalisation programme, in particular those inside the district. A local zoning plan covers the entire district, and most public spaces in the Old Town are historic sites that receive legal protection.

2.2. Objective, Scope and Methods

The aim of this study was to perform a multidimensional analysis of spatial order in public spaces on the example of the Old Town district in Morąg in North-Eastern Poland. The results were compared with outcomes of a survey conducted among members of the local community who were asked to evaluate the quality of public spaces in the town. The results of the comparison were used to identify public spaces that require revitalisation.

A multidimensional analysis of spatial order was conducted in the following stages:

- selection of the analysed area – the Old Town district in Morąg, The study was conducted in a small town in the Warmia and Mazury Voivodeship due to the general scarcity of research into small urban areas, in particular towns with a historical core (Knox, Mayer, 2010), field inventory and the development of public space records containing detailed information about the surveyed district, (details are presented in subsection 2.3),
- selection of public spaces for detailed analysis (public spaces used on a seasonal basis and public spaces that do not foster social interaction were eliminated); public spaces for analysis were chosen based on the results of the previous research stage. Only areas that were regularly visited by local community members were included in the study (details are presented in subsection 2.3), evaluation of the architectural, aesthetic, social, environmental and functional dimensions of spatial order in selected public spaces; the relevant procedure was developed based on the "Study of Municipal Public Spaces – Workshop 2014" of the Gdańsk Development Office, with several modifications (research tool – public space records), (details are presented in subsection 2.5),
- development of a map illustrating the spatial distribution and quality of the evaluated public spaces; a map illustrating the distribution of public spaces was developed based on the results of the field inventory of the Old Town district in Morąg. A multidimensional analysis of public space quality was conducted with the use of a self-designed method, and the results were visualised in the above map,
- a survey of local community members who were asked to evaluate the quality of public spaces and their quality of life with reference to the definition of quality of life proposed by the World Health Organisation (details are presented in subsections 2.4. and 3.2).

2.3. Field inventory

The Old Town district in Morąg abounds in public spaces. Due to considerable differences in classification criteria in the literature, public spaces were selected in a multiple-stage process with the use of a self-designed method. Contemporary public spaces combine various features, functions and meanings, which posed an additional difficulty. The classification of public spaces into various categories and groups is problematic, which is why the main focus was on spaces that promote social interaction (Bravo, 2010; Pluta, 2014). Therefore, only public spaces that met the following criteria were included in the analysis: they were used predominantly by the residents of Old Town district; they were used continuously throughout the day; they built a sense of community and local participation; they promoted integration; they contributed to local identity and positive perceptions of the Old Town district; and they increased the district's appeal.

The following types of public spaces were identified during the field inventory: traffic routes (streets, footways and driveways, sidewalks, car parks, pedestrian crossings), unorganised green spaces, organised green spaces (squares, parks), recreational facilities (sports fields, playgrounds), a market square, municipal squares, urban interiors. Most of them are open to the public, and there are very few private areas with limited public access.

Only public spaces that promote social interactions were included in detailed analysis. Streets, footways and driveways, sidewalks, car parks and pedestrian crossings were eliminated because their only role was to distribute pedestrian and vehicular traffic in the analysed area. A total of 20 public spaces (Table 1, Fig. 3) were used in the final analysis. Selected examples are presented in Fig. 2.

Fig. 2. Selected public spaces in the Old Town district of Morąg
Source: own elaboration

2.4. Questionnaire survey

A questionnaire survey was carried out to collect the views of local community members in the Old Town district. In the questionnaire, the respondents were asked to voice their opinions about public spaces in the district. The direct survey method was selected based on a review of the literature. The survey involved only Old Town residents, and it was conducted by the authors. The questionnaire was filled out by the authors, who did not influence the respondents' answers, but provided detailed explanations regarding the questions if necessary (Apanowicz, 2002; Babbie, 2004; Łobocki, 2001).

The survey involved 100 local residents, who accounted for 10% of the local population. The respondents were generally randomly selected, but attempts were made to level out the proportion of subjects from different age, gender and income groups to ensure that the questionnaire reliably reflected the opinions of different members of the local community. The centre of the Old Town district features well-maintained buildings that are inhabited by affluent residents, as well as dilapidated tenements inhabited by unemployed persons, welfare recipients and persons struggling with addictions. The questionnaire survey was conducted over a period of one month and at various times of day to elicit the responses of different social groups (working population, the unemployed, women raising children, unattached individuals).

The questionnaire was developed based on a review of the literature. It began with general questions, followed by questions eliciting more detailed information. Closed-ended and semi-open questions were used. The questionnaire was composed of 12 questions, but only the questions that were most important for the presented analysis were discussed in the paper. The respondents' age and sex were indicated in the questionnaire, and the amount of personal information was kept to a minimum to comply with personal data protection laws (Krok, 2015; Witaszek, 2007). The questionnaire explored the respondents' familiarity with the public space concept, their opinions regarding the quality of life in the Old Town district, public spaces that require revitalisation, demand for new public spaces, type and duration of activities undertaken in public spaces, recreational areas, declared assistance in revitalisation programmes, and an evaluation of the public spaces selected for the study.

2.5. A method for evaluating spatial order

Spatial order in the analysed district was described with the use of public space records. Each record featured different categories of spatial order (architectural, aesthetic, social, environmental, functional), their components and the applicable grading scale (Table 1).

The evaluated components were generalised to fit all types of public spaces, but they were described in detail to obtain the largest possible set of data. Public spaces were analysed in both quantitative and qualitative terms. The components of spatial order are described in the captions to Figs 4, 5, 6, 7 and 8. It should also be noted that the selection of spatial order components was a very long process. The initial list of components was several times longer than the final list. Based on a review of the literature (Caldera, Berrocal, 2016; Chmielewski, 2016; Dymitrow, 2014; Lorens, 2006; Wojnarowska, 2017), the list of spatial order components was substantially abridged to achieve the best results.

The components were graded with the use of the point scale proposed in the "Study of Municipal Public Spaces – Workshop 2014. An Evaluation of the Attractiveness of Public Spaces" (Romasiuk et al., Gdańsk Development Office, Gdańsk, 2014). Public spaces were evaluated based on the following criteria:

- components whose quality exceeds basic evaluation criteria (+),
- components whose quality is below basic evaluation criteria (-),
- components whose quality meets basic evaluation criteria (0),
- components not identified in the analysed public space (NA).

The main evaluation criteria made reference to a level/status of the analysed components that ensured the safe, adequate and comprehensive use of that component or public space. The status of every component was defined individually based on a review of the referenced literature.

3. Results

3.1. Comprehensive analysis of spatial order

The results of the field inventory indicate that the majority of public spaces in the Old Town district serve recreational purposes. Services, sports facilities, transport facilities and places of religious worship were also identified. Spatial planning solutions differed considerably between the analysed spaces. In most part, the Old Town is a historic district where historical buildings and monuments largely influence local planning and have considerable recreational and tourist potential.

The procedure described in subsection 2.5 (Table 2, Fig. 3) was applied to evaluate spatial order in public spaces that were selected based on the results of the field inventory.

The quality of most components in the evaluated public spaces did not meet basic criteria (490). Only 30% of public space components exceeded basic quality criteria. The highest degree of spatial order and harmony were noted in public spaces 17, 19 and 20. These spaces were characterised by a predominance of components exceeding basic quali-

Table 1. The analysed components of spatial order

Dimensions of spatial order	Components
Architectural	General proportions, urban design, planning, craftsmanship and style, additional features, green spaces
Aesthetic	Display of information, advertising and signs, facades, roofs, pavement and fencing, colour scheme, cleanliness
Social	Users, atmosphere, access to other public spaces, safety, lighting, surveillance
Environmental	Noise, green spaces
Functional	Footpaths and bike paths, rhythm and harmony, accessibility

Source: own elaboration based on Romasiuk et al. 2014

Table 2. Evaluation of spatial order components

No.	Public space	Number of components			
		Quality exceeds basic criteria	Quality meets basic criteria	Quality below basic criteria	Not identified
		+	0	-	NA
1.	Historical municipal park	19	10	20	13
2.	Market square	8	11	38	5
3.	Public green space	22	20	9	11
4.	Sports field	5	11	36	10
5.	Public green space	23	19	6	14
6.	Municipal park (behind Dohn Palace)	11	20	23	8
7.	Unorganised green space	3	4	40	15
8.	Playground	15	18	21	8
9.	Public green space	31	13	10	8
10.	Public greens and recreational areas	6	2	51	3
11.	Playground	7	3	37	15
12.	Playground	6	7	40	9
13.	Playground	9	15	30	8
14.	Urban interior	21	14	24	3
15.	Playground with public green space	16	14	23	9
16.	Playground with public green space	11	15	31	5
17.	Municipal square	47	1	7	7
18.	Urban interior	18	14	27	3
19.	Public green space	40	2	8	12
20.	Municipal square	37	9	9	7
	TOTAL	**355**	**222**	**490**	

Source: own elaboration

ty criteria and harmonious design. The majority of the evaluated public spaces were characterised by low-quality components, in particular green spaces 7 and 10 with more than 80% of low-quality components. This is highly undesirable because public space 10 is situated in the direct vicinity of the historical fortified wall. Municipal playgrounds and a sports field were characterised by the highest accumulation of low-quality components. The results of the analysis are presented graphically in Fig. 3.

The quality of spatial order components in the analysed public spaces in the Old Town is presented in Figs 4, 5, 6, 7 and 8. The results presented in Fig. 4 point to the wide diversity of architectural components of spatial order in the analysed public spaces.

Surface and height proportions were satisfactory, and they exceeded basic quality criteria. An evaluation of distances between spaces with different functions revealed that 40% of public spaces were situated in the vicinity of areas whose functions detracted from the overall attractiveness and growth potential of public spaces. Every fifth public space was deficient in sitting area, and the existing sitting areas were of poor quality. Nearly 50% of the analysed public spaces required additional sources of light, and 35% required a change of lighting. The evaluated playground facilities included sandboxes and swings. According to public space records, most of these facilities were in unsatisfactory condition or were missing. Interestingly, communal tables built by members of the local community were found in selected spaces, but 90% of them were of poor quality. Most footpaths and public green spaces were also characterised by low quality and low levels of maintenance. Overall, more than half of the evaluated architectural components were in very

Fig. 3. Distribution and evaluation of the quality of public spaces in the Old Town district of Morąg

Source: own elaboration

Description of public spaces: 1. Historical municipal park, 2. Market square, 3. Public green space, 4. Sports field, 5. Public green space, 6. Municipal park (behind Dohn Palace), 7. Unorganised green space, 8. Playground, 9. Public green space, 10. Public greens and recreational areas, 11. Playground, 12. Playground, 13. Playground, 14. Urban interior, 15. Playground with public green space, 16. Playground with public green space, 17. Municipal square, 18. Urban interior, 19. Public green space, 20. Municipal square

poor condition. The quality of tourist facilities significantly exceeded the quality of public facilities in the residential part of the district.

The second evaluated component was aesthetic cohesion, and the relevant information is presented in Fig 5. Aesthetic evaluations are subjective and determined by the observer's individual preferences. However, visual aesthetics and harmony can be assessed based on a set of general criteria.

The availability and maintenance of public information signs exceeded basic quality criteria in more than 50% of the analysed cases. Outdoor advertising requires certain modifications, and it should be limited to a minimum in historical sites. The condition, material and colour of building facades, roofs, surfaces and fences exceeded basic quality criteria in nearly 50% of the analysed public spaces, but only in the central part of the Old Town district. Most

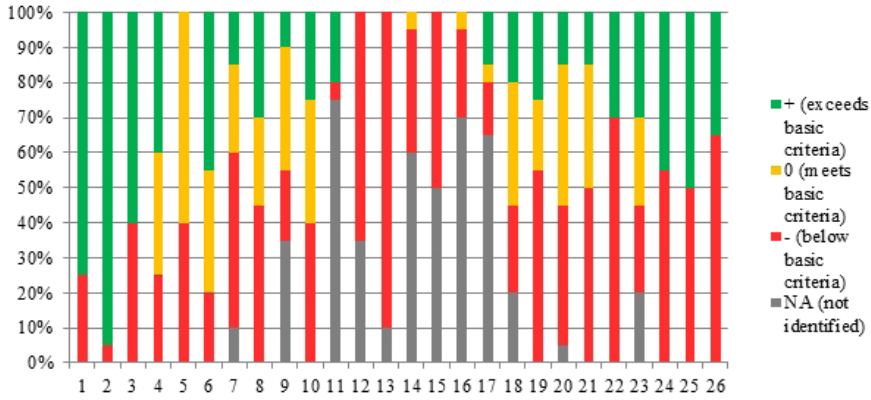

Fig. 4. Evaluation of the quality of architectural components in public spaces
Source: own elaboration
Explanation: 1. adequate surface parameters, 2. adequate height parameters, 3. adequate distance between spaces with different functions, 4. urban planning solutions, 5. roofs and canopies, 6. sitting areas (quantity), 7. sitting areas (quality), 8. trash cans, 9. garbage containers, 10. lighting (quantity and quality), 11. public toilets, 12. playground facilities, 13. tables, 14. laundry drying facilities, 15. carpet beating frames, 16. garages, coal sheds, 17. services, 18. residential buildings, 19. quality of pedestrian surfaces, 20. recreational areas, 21. safety, 22. style, 23. architectural and historical monuments, 24. green spaces – cohesion, 24. green spaces – proportional design, 26. shade producing trees

public spaces are not fenced in, which contributes to the preservation of open urban space and promotes social interactions. Despite the above, 45% of the evaluated fences were in very poor condition. Cleanliness is yet another determinant of aesthetic appeal. Basic cleanliness criteria were met in 25% of the evaluated spaces, and exceeded in 45% of the spaces, whereas 30% of the analysed spaces were completely neglected. In general, green spaces were well maintained in popular tourist destinations and neglected in less exposed residential areas.

Social cohesion was the third evaluated dimension of spatial order. The accessibility, popularity, atmosphere and safety of the analysed public spaces are described in Fig. 6.

More than 50% of the analysed public spaces have a very large or large number of users, and only 15% are rarely frequented. A subjective evaluation of the local atmosphere produced extreme results. Selected areas deliver a sense of comfort and safety (40%), whereas others invoke fear (25%). Approximately 50% of the analysed public spaces were characterised by moderate safety levels, 25% by high

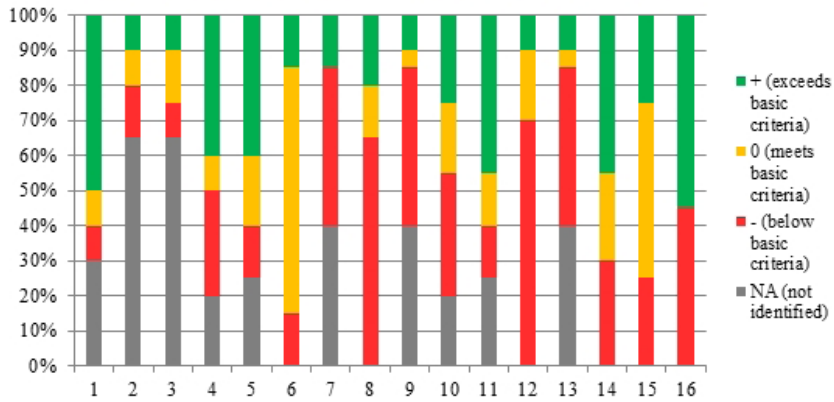

Fig. 5. Evaluation of the quality of aesthetic components in public spaces
Source: own elaboration
Explanation: 1. availability and maintenance of public information signs (traffic signs, information boards on buildings), 2. non-organised advertising (boards, banners) and organised advertising (billboards, city lights), 3. signboards, 4. facades – maintenance, 5. roofs – maintenance, 6. paved surfaces – maintenance, 7. fences – maintenance, 8. pavement materials, 9. fencing materials, 10. facade colour, 11. roof colour, 12. pavement colour, 13. fence colour, 14. general cleanliness, 15. cleanliness of buildings and public facilities, 16. cleanliness in public green spaces

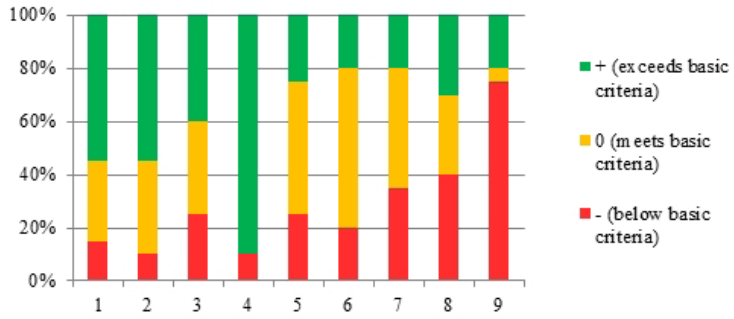

Fig. 6. Evaluation of the quality of social components in public spaces
Source: own elaboration
Explanation: 1. number of users, 2. social and demographic structure, 3. atmosphere – subjective evaluation, 4. availability of public spaces within a 100 m radius, 5. evaluation of safety based on a map of local threats, 6. ratio of male to female users, 7. subjective evaluation of safety, 8. lighting, 9. surveillance

safety levels, and 25% by low or very low safety levels due to the absence of lighting and surveillance.

The fourth evaluated component of spatial order was the quality of the local environment (Fig. 7). This component was analysed based on two key criteria – noise levels and greenery.

Noise levels exceeded the acceptable limits in 55% of the analysed public spaces, mainly due to the proximity of the main traffic route. Despite the abundance of vegetation, which can be organised to create attractive recreational areas, the quality of greens was below basic quality criteria in 45% of public spaces.

The last analysed component of spatial order was functional cohesion, and the results are presented in Fig. 8.

Disabled persons have practically no access to public utilities in the district due to the absence of a cohesive system of footpaths, uneven sidewalks, high curbs and stairs. Bike paths, which have become a standard feature in Polish public spaces, were not available in 95% of the surveyed area.

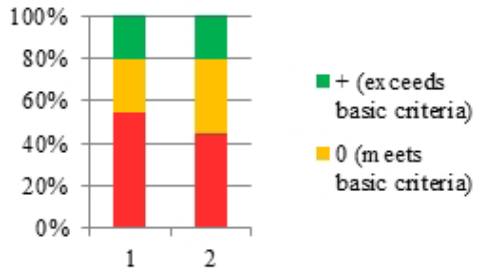

Fig. 7. Evaluation of environmental quality in public spaces
Source: own elaboration
Explanation: 1. noise levels, 2. greenery

There are many obstacles to pedestrian traffic in public spaces. The evaluated area is characterised by low levels of spatial harmony and cohesion due to a wide variety of construction materials and exterior colour schemes.

3.2. Survey results

Members of the local community were surveyed and asked to evaluate the quality of public spaces in the Old Town district. The questionnaire survey was conducted among 100 respondents, including 59% female and 41% male subjects. The respondents were divided into age and gender groups in Table 3.

Female and male respondents younger than 18 years were the smallest surveyed group, and female and male respondents aged 18–50 were the largest surveyed group.

The respondents were asked to evaluate public spaces in the district. The questionnaire featured the photographs of all analysed public spaces with an indication of their location and characteristics sites to facilitate their identification. The respondents evaluated public spaces on a scale of 1 to 5 points, where 1 was the lowest mark and 5 was the highest mark (Table 4). The respondents were asked to evaluate public spaces comprehensively based on maintenance standards, buildings, aesthetic appeal, impact on social relations, environment (green areas) and functionality. The components of spatial order were addressed indirectly by the questionnaire.

The results of the questionnaire were expressed by the mean of the scores given by the entire sur-

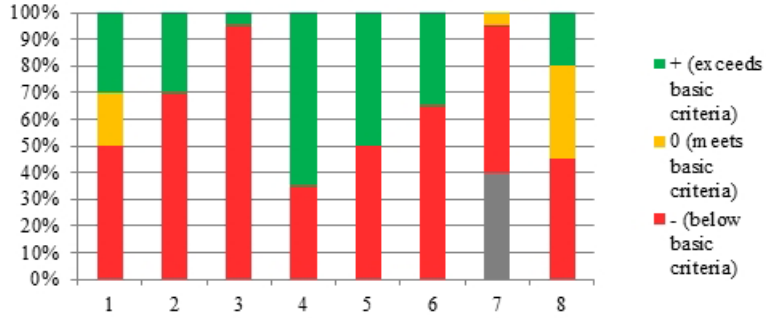

Fig. 8. Evaluation of the quality of functional components in public spaces
Source: own elaboration
Explanation: 1. width of sidewalks, 2. disabled access, 3. bike paths, 4. obstacles to pedestrian traffic, 5. unconstrained flow of traffic, traffic safety, 6. harmonious space, 7. car parks, 8. intensity of vehicular traffic

Table 3. Respondent age and gender

Gender and age	Persons	Percentage	Number of same-sex respondents	Percentage of same-sex respondents
Female <18 years	14	14%		
Female 18–50 years	24	24%	59	59%
Female >50 years	21	21%		
Male <18 years	8	8%		
Male 18–50 years	17	17%	41	41%
Male >50 years	16	16%		
Total	**100**	**100%**	**100**	**100%**

Source: own elaboration

veyed population, as well as by different age and sex groups to accentuate the differences in the opinions of male, female, older and younger respondents. None of the evaluated public spaces received an average of 5 points. Public spaces 3, 5, 8, 9, 14, 17 and 19 were most highly evaluated, which is consistent with the results of the multidimensional analysis of spatial order in public spaces 3, 5, 9, 17 and 19, but not in public spaces 8 and 14. The respondents gave the lowest marks to public spaces 2, 4, 7, 10, 11, 12 and 18, which is also consistent with the results of the multidimensional analysis.

The respondents were also asked to evaluate the quality of life in the district. The surveyed subjects were provided with the WHO definition of quality of life for a better understanding of the concept. The WHO defines quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment" (www.who.int/healthinfo/survey/whoqol-qualityoflife/en/, 2019.04.18). The results are presented in Fig. 9.

The perceived quality of life differed by respondent age. More than half of the respondents (54%) were of the opinion that the analysed district was characterised by an average quality of life. According to 20% of the surveyed residents, the quality of life in the Old Town district was low. These results indicate that nearly three quarters of the respondents were not satisfied with their quality of life.

Table 4. Evaluation of public spaces – survey results

No.	Public space	Average results per group						Average result
		Gender and age						
		Female			Male			
		<18	18–50	>50	<18	18–50	>50	
1.	Historical municipal park	4	3	3	5	4	3	**3.5**
2.	Market square	3	2	1	4	2	3	**2.5**
3.	Public green space	5	4	4	4	3	4	**4**
4.	Sports field	2	2	1	1	2	3	**2**
5.	Public green space	4	4	3	5	4	4	**4**
6.	Municipal park (behind Dohn Palace)	2	1	1	2	3	1	**1.5**
7.	Unorganised green space	1	1	1	2	1	1	**1**
8.	Playground	4	3	4	5	4	4	**4**
9.	Public green space	5	4	4	5	5	4	**4.5**
10.	Public greens and recreational areas	1	1	1	3	1	1	**1**
11.	Playground	1	1	2	1	2	3	**1.5**
12.	Playground	2	1	1	2	1	1	**1**
13.	Playground	3	3	2	4	3	3	**3**
14.	Urban interior	4	3	3	5	4	4	**4**
15.	Playground with public green space	5	2	2	4	3	3	**3**
16.	Playground with public green space	4	3	3	5	2	2	**3**
17.	Municipal square	5	4	5	3	4	5	**4**
18.	Urban interior	3	3	2	2	3	3	**2.5**
19.	Public green space	5	3	4	4	4	5	**4**
20.	Municipal square	3	2	5	2	4	5	**3.5**

Source: own elaboration

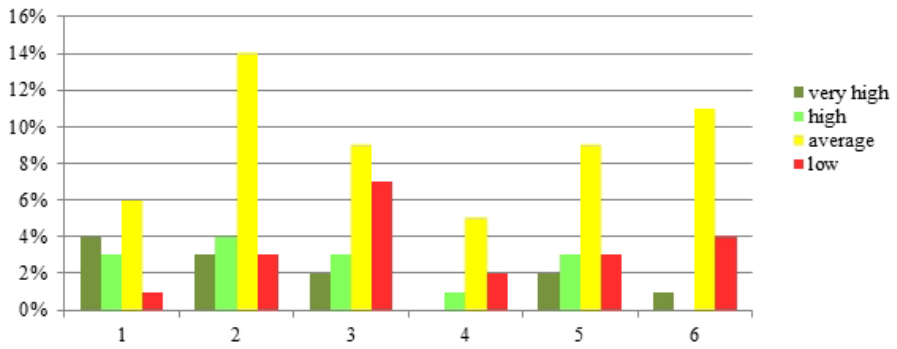

Fig. 9. Quality of life in the analysed district. Source: own elaboration.
Explanation: 1. female <18 years, 2. female 18–50 years, 3. female >50 years, 4. male <18 years, 5. male 18–50 years, 6. male >50 years

4. Conclusions

Space continues to evolve as a result of both positive and negative phenomena. These processes can be clearly traced in urban public spaces. Changes influence spatial order and the quality of public spaces. Space has multiple dimensions, and the relevant analyses should therefore account for various aspects of space. The above also applies to multidimensional analyses of spatial order based on architectural, aesthetic, social, environmental and functional components that describe the evaluated space.

A multidimensional analysis of spatial order was carried out in the Old Town district of Morąg to determine the quality of various components in the entire district and in selected public spaces. The results point to strong correlations between the quality of the evaluated area and the quality of its individual components. In general, public spaces in the Old Town district were characterised by average and below average quality. Significant variations in quality were observed between locations, where public spaces of the highest quality were situated in the central and most representative part of the district. Public spaces in the Old Town district require revitalisation. The results of this study can be used to identify areas where revitalisation is most needed and to determine the type of revitalisation efforts required. Our findings constitute valuable information for the Morąg Town Hall, District Council and local residents. It should also be noted that results of the multidimensional analysis of spatial order were highly consistent with the outcomes of a survey involving members of the local community.

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