

Assessment of the architectural accessibility of cultural facilities in the Paczków municipality, Opole Voivodeship, Poland, as a case study

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Abstract:

The article discusses research on the statistical distribution of cultural facilities in the Opole Voivodeship, with Paczków municipality serving as a representative example. The identified research gap is the lack of a database of cultural facilities in Opole Voivodeship that enables studies aimed at defining architectural accessibility barriers. The quantitative research aim was to develop a cultural facilities catalogue, considering possible object types, and to use the database further to examine architectural accessibility in a representative municipality. The post-occupancy evaluation (POE) results, based on a prepared checklist, indicate priority research issues and potential directions for further design activity. The research novelty lies in developing a comprehensive catalogue, identifying a representative municipality for in-situ research, and establishing an original assessment checklist. The study addresses the identified research gap, considers the cultural aspect, provides an assessment matrix as a tool for future studies, and identifies further research directions based on in-situ findings.

Keywords:

architectural accessibility, cultural facility, accessibility assessment, Opole Voivodeship

1. Introduction

Access to public buildings should be provided for all users, including people with physical and sensory disabilities. Applying universal design principles ensures accessibility [1]. Among these, architectural, digital, information, and communication accessibility have been distinguished [1]. Each aspect refers to different but equally significant areas of operation. The relevance of this issue is emphasised by the growing interest in accessibility in Poland and around the world [2].

Spatial accessibility refers to the ability to utilise a service or resource from a specific location. This issue has been addressed in the context of designated areas and different building types, including healthcare facilities [3,4], public and private schools [5], museums, monuments, archaeological sites and cultural centres [6].

In recent years, scholars have studied the spatial distribution of cultural facilities, including analyses exclusively of this type of public building. Studies were conducted in various contexts, across different geographical locations, and using different methodological approaches. For instance, one study analysed spatial accessibility within the road network [7]. In turn, Lijin Zhao, Min Liu, Shiqing Zhang, and Xiuzhen Yan have examined how the spatial distribution relates to natural, socioeconomic, and cultural factors in selected municipal-level administrative units in Shanxi Province. This study uses geographic information system (GIS) techniques and multivariate statistical analysis [8]. Scholars highlight the importance of geographical perspectives in cultural heritage [8] and indicate that accessibility is a complex, multidimensional concept related to social, psychological, and financial aspects [8]. Because cultural facilities are public utility buildings, they must be available to all potential users. This is supported by global and local legal

acts [1]. Accessible centres enable participation in society's cultural practices, which is an important component of achieving social policy goals, i.e., counteracting social exclusion [7].

Architectural accessibility is essential for conducting cultural practices in buildings designed or adapted for this purpose. This access is strictly and closely linked to users' capacities and needs. Some accessibility issues must be addressed in building adaptations under applicable law, while others are not covered by regulations; however, they still significantly affect accessibility. Accessibility in cultural facilities encompasses a range of issues (Table 1, Table 2), including the relationship between the building and its environment, the entrance zone, the adaptation of exhibition spaces, and spatial orientation.

Several studies have addressed accessibility to public buildings with exhibition functions. Researchers have explored this topic in various contexts. Xiang Wang, Mengsi Yang, Weicong Li, Lin Yuan, Qimeng Ren, Qian Xie, and Runze Liu [9] conducted case studies of 4 museums on functional layout and accessibility. Findings indicate that different layout strategies affect spatial mobility and accessibility differently. Moreover, the exhibition's spatial layout, entry sequence, and visitor density all influence visitors' stay duration [9]. Jacopo Fiorenza, Davide Calandra, Anna Osello, and Fabrizio Lamberti [10] studied how to create a virtual museum visit through a VR experience, focusing on the needs of people with Autism Spectrum Disorder (ASD). Given the importance of sensory overload during a visit to the museum, scholars created a virtual environment of the 'Hall of Seasons' at Palazzo Carignano, a historical building and museum located in Turin's city centre, Italy. VR based on 3 keywords: modularity, predictability, and attention. Research involves testing the designed model. Results indicate the potential effectiveness of the tools used, namely VR [10].

The study by Yael Avni, Alexandra Danial-Saad, Julia Sheidin, and Tsvi Kuflik [11] addresses how advanced technologies can enhance museum experiences for blind and low-vision (BLV) visitors. The proposed solutions included 3D printing and microcontrollers. This demonstrated the importance of a holistic sensory experience, not only visual representation, for BLV visitors. Research indicates the potential of 3D printing for crafting engaging experiences. Moreover, it features significant Braille labels in high-contrast colours, ensuring that everyone can access information, and provides well-crafted audio descriptions. This study indicates that multimodal systems for museum accessibility are inherently complex and multi-layered. The development requires expertise across multiple disciplines [11].

Beyond exhibition accessibility, wayfinding in accessibility contexts has already been studied, with different methods and objectives. One empirical study used mobile eye tracking, concurrent think-aloud protocols, and schematic mapping. Analysing the challenges in this issue has identified targeted wayfinding design interventions [12]. In recent years, the topic of exhibition space accessibility has also been analysed in various contexts and with a different geographical reach. For instance, studies have examined tangible user interfaces to enhance accessibility in geological exhibitions in Brazil [13] and multisensory accessibility practices in three exhibitions in New Zealand [14].

Despite existing studies on the accessibility of cultural facilities, surprisingly little analysis of accessibility to public cultural buildings focuses specifically on the Opole Voivodeship (Poland).

Data from the 2021 National Census indicate that Opole Voivodeship has the greatest national, ethnic, and linguistic diversity among its neighbouring voivodeships [15]. In the view of M. Mazurkiewicz, this voivodeship is inhabited by one national minority – German – and one ethnic nationality – Roman. The author emphasises the presence of foreigners from over 60 countries and explains that this is not specified due to the low degree of self-organisation and their dispersion [16]. The German national minority in the Opole Voivodeship is the most numerous in any voivodeship [16]. The lack of national and ethnic homogeneity in the voivodeship results in the presence of people groups representing different cultures [17]. This affects business attitudes, educational directions, culinary issues, architecture, agricultural traditions, and the preservation of customs [17].

Culture is determined by its creators, who commonly form a society. Diversity within a population contributes to cultural diversity. The traditions of Opole Voivodeship are unique due to the presence of national minorities and linguistic diversity. Preliminary research suggests that cultural factors influencing the architectural accessibility of cultural facilities in Opole Voivodeship include adapting space infrastructure to the activities undertaken and using multilingual inscriptions. Jerzy Bartkowski identifies three types of variation in the level of cultural participation across various kinds of centres in Poland. [18] The first one is linked to differences in educational levels, municipal affluence, and the directions of domestic and international tourist traffic. The next one concerns inequalities arising from the uneven distribution of cultural institutions across rural and urban areas. Notably, the last one is associated with regional distinctiveness, shaped by diverse cultural traditions and regional differences in cultural consumption patterns. [18] Results of preliminary research indicate that in the case of Opole Voivodeship, there is no need to adapt infrastructure to local traditions, including plucking feathers [19], setting May trees known as Maibaum [20], organising

Bavarian-style dances such as Oktoberfest [21], performances in the Silesian dialect [22], and traditional Easter egg decorating [23]. Nevertheless, actions designed to provide broad accessibility must consider multilingualism. The 2021 National Census [15] indicates the variety of languages used at home by residents in Opole Voivodeship. Compared with the neighbouring voivodeships, this region has the greatest diversity [15]. Findings suggest the need to prepare multilingual texts for use in public utility buildings, including Polish, English, German, Czech, Ukrainian, and Silesian.

Although there is no need to adapt the space infrastructure in Opole Voivodeship, this may be necessary in other areas. Moreover, particularly in rural public buildings, accessibility barriers may stem from local cultural practices and traditions.

Ensuring accessibility in cultural facilities is multidimensional and therefore requires examination from multiple perspectives. The accessibility of cultural facilities in the Opole voivodeship has not been addressed. The identified research gap is the lack of a database of existing cultural facilities in the Opole voivodeship; therefore, it was not possible to examine existing barriers or develop accessibility assessment levels in this region. Because the study was narrowed to a specific administrative region, similar barriers may arise within this region or across cultural facility types. To examine this issue, this study is guided by the following two research questions. It refers to the number and statistical spatial distribution of cultural facilities within the Opole Voivodeship, as well as the types of cultural facilities that can be identified. It also examines the current level of accessibility provided by cultural facilities and the priority issues to address due to the low level of accessibility.

Establishing a database may enable further research, including assessing architectural accessibility in these buildings. This article presents the collection process, the occurrence and statistical distribution of objects in the Opole Voivodeship, and an assessment of the architectural accessibility of cultural facilities in a representative municipality – Paczków. It is an urban-rural municipality situated in Nysa County, in the southwestern part of the Opole Voivodeship. It is surrounded by three water reservoirs: Otmuchów Lake, Nyskie Lake, and Paczkowski Lake. The Paczków municipality borders the Lower Silesian Voivodeship to the west and north and the Czech Republic to the south. The surface area is 79.69 km², and its population amounts to 11,486 inhabitants [24]. The Paczków municipality has 12 localities, including 11 villages and 1 town [25]. The town of Paczków was established in the middle of the thirteenth century. Due to the retained ring of fortified walls around the centre, Paczków is named as the „Polish Carcassonne” [26]. In the nineteenth century, urban plantations were created. The remaining fortifications of the town also include three gate towers: Wrocław, Kłodzko and Ząbkowicka and one Nysa gate [26].

The scope of this research has been restricted to data collection, as the main objective is to assess architectural accessibility. The research results will allow the establishment of guidelines for future research using the research-by-design method.

The novelty of this study lies in the comprehensive cataloguing of cultural facilities in the Opole Voivodeship, the identification of a representative municipality for in-situ research, and the development of an original accessibility assessment checklist that considers cultural aspects. The study addresses a research gap and provides new insights into ensuring accessibility in cultural facilities, while also highlighting directions for further research.

2. Methods

Two research methods have been employed to create a cultural facilities database, assess the current state of architectural accessibility, and determine the link between cultural aspects and accessibility barriers.

Quantitative research has been conducted to collect data on cultural facilities. The resulting information includes the facility's name and type, its location in the commune and county, the supervising unit, and the source and date of the information. The data sources include Public Information Bulletins [27] of local governments, direct email and telephone inquiries, the Statistics Poland (GUS) database [25], 'List of points dispensing iodine tablets in the Opole Voivodeship' [28], and other relevant websites. The 'List of Co-Managed Institutions for Which the Organiser is the Ministry of Culture and National Heritage' has also been included [29]; however, no items on the list are located in the Opole Voivodeship. The research process comprised two stages. The first stage involved facilities under the supervision of local governments and subordinate to the Ministry of Culture and National Heritage. The second step concerned co-partnerships, cooperatives, associations, churches, universities, foundations, and private individuals. Data were collected systematically, covering all municipalities successively. Recording and ordering

the figures in the table enabled quantitative analysis. The collected information is identifiable and relates to facilities located in Opole Voivodeship.

During the study, the collected data were grouped by facility location across rural and urban areas. The records have also been analysed to determine the per capita use of cultural facilities in these areas. This study identified existing types of cultural facilities across Opole voivodeship and determined their occurrence in urban and rural areas. It then identified whether any types appear exclusively in one of these areas. The next step involved analysing data to develop a statistical distribution of cultural facility types across municipalities in the Opole voivodeship. A representative municipality was identified as the one with the smallest difference in percentage points between the municipality and the voivodeship.

As a result, Paczków was identified as a representative municipality in Opole Voivodeship (Fig. 1). Defining a representative municipality is necessary to narrow the study area. The research may be broadened to include additional administrative units; however, to obtain initial data, a municipality was selected that most closely approximated the region's average parameters. This selection enabled the acquisition of data more similar in nature.

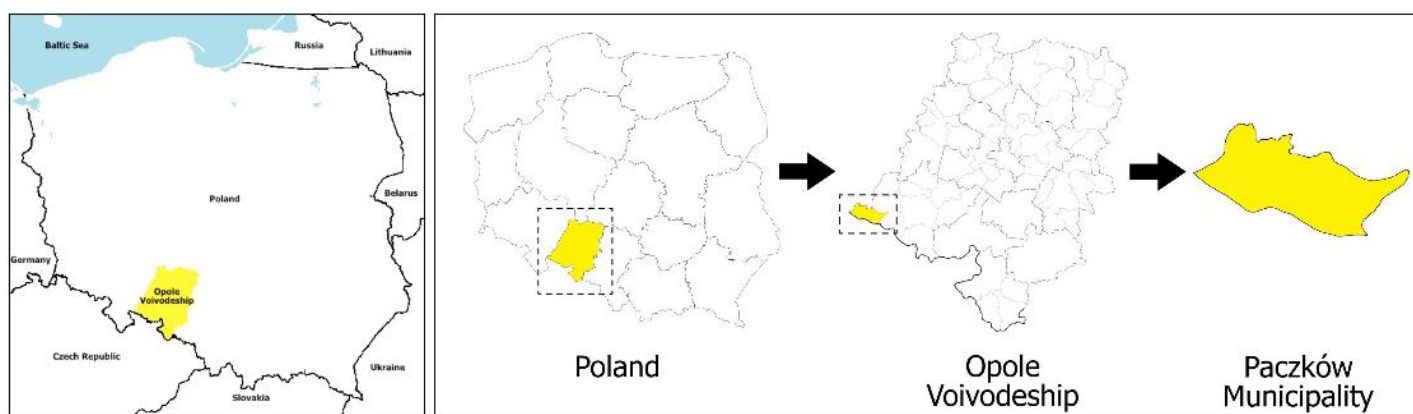


Fig. 1. Left: Geographical position of the Opole Voivodeship. Right: Sequence for narrowing the scope of the study. Source: own study

Subsequently, a qualitative research POE (Post-Occupancy Evaluation) was undertaken. It aimed to assess the facility's quality from the users' perspective [30]. Research walks were conducted at 17 of 18 cultural facilities, during which photographic documentation was collected, and evaluation questionnaires were completed. One object was not made available for research. The accessibility analysis is based on adopted criteria related to the research issues. The criteria used are recommendations rather than legal accessibility requirements. They were identified based on guidelines contained in two publications [31,32] and supported by my own observations. The first publication, 'Włącznik 2.0', addresses the requirements specified in ISO 21542, the ADA Standards for Accessible Design, and Polish regulations. The second publication, 'Accessible Museum Exhibition', is a set of guidelines for exhibition planners, organisers, and coordinators to help prepare the accessibility specifications required by law. Accessibility assessments use a three-point scale: 2 indicates the criterion is fully met, 1 indicates it is partially met, and 0 indicates it is not met.

The criteria were divided into two groups, covering issues of object localisation and its relations with surroundings: entrance zone, entrance door parameters, vertical and horizontal communication, spatial orientation, and hygienic and sanitary facilities. The first was common to all types of cultural facilities. They are presented in the table below (Table 1).

In some of the buildings selected for analysis, not all research issues occurred. For vertical communication, this was due to the facility's adopted utility program; for hygienic and sanitary rooms, it was due to the managing body's declaration of the premises' accessibility. Objects in which the occurrence of research issues was not recorded were excluded from the analysis.

The second group of criteria depended on the type of cultural facility analysed. This condition resulted from the types of rooms and the functional requirements associated with them. The criteria included 5 types of cultural facilities located in a representative municipality. The table below (Table 2) presents the relationship between the research issues resulting from the type of room and the type of cultural facility.

Table 1. Groups of criteria and research issues. Source: own study based on [32,33]

Group of research issues	Research criteria
Common for all cultural facilities	location of the facility and relationship with the environment ¹
	entrance zone ²
	entrance door parameters ³
	horizontal communication ⁴
	vertical communication *analysed in the case of multi-story buildings* ⁵
	spatial orientation ⁶
	sanitary facilities, **if declared as accessible** ⁷
Dedicated to individual facility types and linked to room types	internal door parameters ³
	surface finishing of walls and floors ⁸
	lighting, electrical installation, and equipment ⁹
	manoeuvring space ¹⁰
Adaptation	adaptation to the function of multifunctional rooms (including reading rooms) ¹¹
	adaptation to the function of the exhibition space ¹²
	adaptation to the function of the space with a stage ¹³

¹ Accessibility to: the same type of cultural facility within the municipality, bicycle routes, and parking spaces. The possibility of using public transport in the locality access to the plot from the main pedestrian routes, and distance to the bus stop. Condition of paved surfaces. Neighbourhood of single and multi-family buildings as proximity to the target users. The plot has no major changes in the terrain, allowing easy pedestrian and vehicular access.

² Entrance doors are accessible to the general public, without alternative separation. Marking of entrances adapted for people with disabilities. Legibility of the communication system, glazing marked with tapes, the use of tactile paths, textured surfaces or sound markings.

³ The shape and cross-section of the handle. Distance from the corner of the wall and the height of the door handle and devices. Marking the functions of the devices with a pictogram. Contrast of frames and doors to the wall.

⁴ Passageways with a width of ≥ 120 cm and a height of ≥ 220 are free of obstacles related to interior furnishings. The use of manoeuvring space with a size of. 150x150cm. Designation of places to rest. The route is open to the general public and has no significant altitude changes. It is possible to use all public areas of the buildings.

⁵ Parameters of stairs, providing alternative means of accessing all rooms. Contrasting markings of the edges of the steps and texture markings of the landings. Colour contrast between the walls and the elevator. Continuity and colour contrast of the handrail in relation to the wall. Mirror placement and access to the mirror in the cabin. The height of the control panels in the elevator.

⁶ Availability of the building plan and typographic map for the building and rooms. Use of signs or pictograms with appropriate contrast. Simultaneous use of markings, inscriptions, pictograms and their illumination. Marking nodal points. The height of directional signs and information is designed to be read up close. Use of pavement structural markings. Informing regarding the function of rooms through boards on doors or walls. Availability of subtitles in several languages and dialects - multilingualism as a cultural factor. The use of a sans-serif font, legible typeface, and appropriate colour contrast with the background. The

consistency of the system used within the building. Information available in Braille.

⁷ The shape and cross-section of the handle. Distance from the corner of the wall and the height of the installation of the handle and switches. Use of motion sensors. Providing a manoeuvring area of the size. 150x150 cm, free space in front of the sink and next to the muesli. Shell trolley transfer available. Parameters and installation height of the toilet bowl and a washbasin. The distance of the fittings from the wall. Battery type. Parameters, height of handrail installation. Access to paper containers, dust bins and a distress call system and installation at the appropriate height.

⁸ The occurrence of colour contrast between the floor and the walls allows to recognise the boundaries of space. The floor is uniform, without patterns, which reduces the risk of disorientation. Room acoustics with no reverberations or echoes. Lack of reflective surfaces opposite each other, which reduces the risk of disorientation. Carpets with a pile no longer than 2 cm and pavement details attached to the floor, which minimises the likelihood of tripping. The difference in the structure or colour of the floor surface for different types of rooms serves as a navigation aid, improving spatial orientation.

⁹ Use of diffused, glare-free, flicker-free light sources with 4000-5000K colour. Adjustable lighting. Mounting height and distance from the wall of switches. Access to sockets in the countertop or on the wall and an induction loop.

¹⁰ Ensuring proper height and width in entrances, change of direction, in open spaces and near desk passages.

¹¹ Providing adequate space for manoeuvre at the desk. Access to workstations with different heights, with recommended dimensions; running water in the room; and materials and tools at the appropriate height on the shelf. Use of seats with backrests and armrests. Flexibility of room arrangement, taking into account the possibility of separating the exhibition space. Availability of digital equipment.

¹² Provision of a space where people using wheelchairs can stop. Space for an assistant and the necessary assistive equipment. The routes for group tours, without bends or dead ends, are numbered and free of obstacles that impede communication. Access to information about irritating

elements and the rules for using interactive devices, to furniture with appropriate parameters intended for relaxation, to key exhibits in several alternative ways of communication, and to information about the lack of availability of individual elements. Adaptation of educational stands and interactive exhibits to the needs of people with visual disabilities, showcases to the needs of people with motor disabilities. Possibility to use alternative access in the case of historical buildings. Clear marking of soundtracks. Use of colour contrast between the exhibit and the background. Lighting and captions with the appropriate font and colour, and access in several languages, as a reference to multilingualism as a cultural factor. The

height and method of exhibition depend on the dimensions of the exhibits and the place. Production of showcases with appropriate dimensions, available for mobility and ergonomics, considering colour contrast and materials, and anti-reflective devices. Illumination of the exposure, legibility of facial expressions. Possibility of using a virtual tour as an alternative access provision.

- 13 Stage access for wheelchair users. Providing lighting without glare or shadows. Providing information on the accessibility of the stage, the designated area for parking equipment, the parking space for assistants, and the space for individuals with wheelchairs.

Table 2. The occurrence of the type of room and related research issues in individual types of cultural facilities. Source: own study

Type of room and related research issues:	Community centre	Library	Museum	cultural centre as a type	Exhibition/memorial/heritage room
multi-purpose room:					
- parameters of internal doors;					
- surface finishing of walls and floors;					
- lighting, electrical installation and equipment;	X	X	X	X	
- manoeuvring space;					
- adaptable to function – multifunctional room.					
- adaptation to the function – a room with a stage *in case there is*				X	
exhibition space:					
- parameters of internal doors					
- surface finishing of walls and floors;					
- lighting, electrical installation and equipment;	X	X	X	X	X
- manoeuvring space;					
- adaptable to function – exhibition space					

The questionnaire for evaluating cultural facilities included criteria from research on 3 possible types of space. For libraries, community centres, and museums, there were 2; for the 'cultural centre as type', there were 3. For the exhibition/memorial/heritage room, there was 1. If a building had no room type, these issues were excluded from the analysis.

In both research issue groups, criteria address multilingualism as a cultural factor. It is associated with providing information in several languages and occurs in the criteria for spatial orientation (6) and for adaptation to the function of multifunctional rooms (12). A combination of the walk-through technique and evaluation questionnaires enabled pinpointing the research areas with the lowest levels of accessibility and assessing the overall accessibility condition of

the buildings. The in-situ studies lasted from May to July 2025. In 22% of all facilities, accessibility audits had previously been carried out – these were libraries. The analysis enabled determining whether cultural activities typical of this region require special design solutions to increase accessibility.

3. Results

The Opole Voivodeship has been included in a study on the accessibility of cultural facilities. As a result of the quantitative analysis, a database of cultural facilities in the Opole Voivodeship has been established, containing a total of 1214 facilities. 975 are located in the countryside and 239 in the city (Table. 3).

Table 3. Quantitative analysis of cultural facilities in relation to their distribution in urban and rural areas, and in terms of the number of inhabitants. Source: own study

	village	town	total
Total number of cultural facilities	975	239	1214
Total number of villages and towns in Opole Voivodeship	1166	37	1203
Average number of cultural facilities within the type of area	0.84	6.46	1.01
Population	443 137	496 333	939 470
Average number of people per one facility	454.5	2076.71	773.86

On average, there is only one cultural facility per village in the Opole Voivodeship. One object is assigned to every 454.5 inhabitants in a rural area. In towns, there are approximately six

facilities, with an average of 2076.71 people per facility. Across the voivodeship, there are slightly more than one cultural facility per locality. One object corresponds to 454.5 people.

Table 4. Typology of cultural facilities of the Opole Voivodeship. Source: own study based on [25,33]

No.	Type of cultural facility	Count	Percentage of the total
1	community centre ¹⁴	674	55.52%
2	library ¹⁵	300	24.71%
3	museum ¹⁶	47	3.87%
4	cultural centre as a type ¹⁷	43	3.54%
5	cultural establishment ¹⁸	31	2.55%
6	exhibition room/memorial room/heritage room ¹⁹	24	1.98%
7	centre of culture ²⁰	20	1.65%
8	rural hall ²¹	15	1.24%
9	cinema ²²	14	1.15%
10	community house ²³	13	1.07%
11	club ²⁴	10	0.82%
12	meeting house ²⁵	5	0.41%
13	research and documentation center in the field of culture ²⁶	4	0.33%
14	art gallery ²⁷	3	0.25%
15	theatre ²⁸	3	0.25%
16	art center ²⁹	3	0.25%
17	village meeting house ³⁰	3	0.25%
18	philharmonic hall ³¹	1	0.08%
19	theme park ³²	1	0.08%
20	opera house ³³	0	0.00%
21	orchestra ³⁴	0	0.00%
22	cinematic institution ³⁵	0	0.00%

¹⁴ A cultural facility whose activities encompass small groups within the local community. It usually has a single room and the necessary equipment [34].

¹⁵ A facility or a part of it that maintains an organised and catalogued collection of books, journals, and other written materials comprising at least 300 inventory items. Their main goals are to develop and manage collections and to provide controlled access to users [35].

¹⁶ A non-profit organisational unit with the goal of protecting cultural goods, informing of values and of the content of the collected goods, popularising fundamental values of Polish and international history, science and culture, developing the cognitive and aesthetic sensitivity, as well as making it possible to contact the collections [36].

¹⁷ Multi-purpose cultural institution. Based on a common programme, it integrates the activities of existing autonomous cultural organisations operating in a given locality (municipality), as well as recreational and sports facilities and catering services [37].

¹⁸ Cultural institution conducting multidirectional socio-cultural activity. It is located in a separate building, built or adapted for this purpose, containing an auditorium and a cinema hall, as well as rooms and appliances designed for cultural activities [38].

¹⁹ Room where objects connected with historical events are stored, presented, and made available to visitors [39].

²⁰ Cultural institution or other entity conducting multidirectional animation activity. It involves initiating, stimulating, and supporting cultural activity among social groups and local communities. This cultural institution has a permanent cultural programme, a team of qualified staff and

appropriate infrastructure. The goal of this facility is cultural and artistic education and social animation [40].

²¹ In this type, activities are similar to those of a community centre [34]. Due to differences in name and a potentially narrower scope of activities, it has been classified as a separate type.

²² The place and group of technical devices used for public movie exhibitions [41].

²³ In this type, activities are similar to those of a cultural establishment [38]. Owing to the name difference, it has been regarded as a distinct type.

²⁴ An institution conducting cultural activities in the local community. It cooperates with cultural, social, and political institutions, organisations, and associations [42].

²⁵ Cultural activities are similar to those of the community centre [34]. Because of differences in name, a distinct type has been defined.

²⁶ An organisational form of cultural activity [33] whose objectives include the identification, research and documentation of cultural heritage.

²⁷ A cultural facility that organises exhibitions as its primary or one of the main activities [43].

²⁸ An institution or organisation that professionally stages regular performances with the participation of actors, singers, dancers, musicians, directors, and set designers. It is usually located in its own building or in a space adapted for staging performances, using various means of expression, such as speech, movement, music, sound, and visual arts [44].

²⁹ An institution whose aim is to support artistic development [45]. The goals involve providing training in a chosen field, including music or visual arts.

³⁰ In this case, activities are similar to those of a cultural establishment [38], but this type of cultural facility occurs only in rural areas. Due to the apparent difference in name, it has been regarded as a distinct type.

³¹ A professional institution with the aim of organising concerts and promoting music, mainly classical music. It comprises a permanent group of instrumentalists and singers, led by a conductor [46].

³² Places offering a wide range of attractions for people of different ages. They offer various forms of entertainment, including carousels, games, and live performances [47]. This type of cultural facility has appropriate infrastructure.

³³ An institution integrating theatre and music, comprising an orchestra, choir, ballet ensemble, and soloists [48].

³⁴ Independent units that are not philharmonic institutions [48].

³⁵ An institution operating in the field of cinematographic cultural activity.

Based on a legal act [33], data from the Central Statistical Office [25], and own observations, 22 possible types have been identified. In the Opole Voivodeship, there are 19 of them (Table 4). The largest group consists of community centres (55.52%) and libraries (24.71%). The smallest collection is theme parks (0.08%).

Defined cultural facility types were classified into 4 categories based on their primary functional purpose. Identified

community integration centres include cultural centres (as a type), community houses, village meeting houses, meeting houses, rural halls, cultural establishments, community centres, and clubs. The activities of these facilities are similar; however, there is a clear distinction in the naming of these cultural facility types. As a result, there is a clear need for in-depth analysis of these building types to identify their characteristics and possibly group a few into a single type. However, this study should broaden its scope to include other scientific fields. In this typology, the distinction between cultural centre (in Polish: ośrodek kultury) and centre of culture (in Polish: centrum kultury) poses a terminological challenge in translation into English. To highlight the distinction in naming a cultural centre, the phrase ‘as a type’ was added to indicate that the term does not refer to a cultural centre in the general sense of a building where cultural activities take place, but to a specific typological category.

The second was a building with an exhibition function, including an exhibition, a memorial and heritage room, an art gallery, an art centre, and a museum. The next group considers buildings with a stage function. There was a defined a philharmonic hall, a cinema, and a theatre. The last one was buildings serving other functions, including a research and documentation centre in the field of culture, a library, and a theme park.



Fig. 2. Distribution of cultural facility types in urban and rural areas. Source: own study

These results show a clear disparity in the distribution of cultural facility types between urban and rural areas (Fig. 2). For cultural centres, half are located in villages and half in cities. In the Opole Voivodeship, typical rural facilities include village meeting houses, theme parks, rural halls, meeting houses, and community houses. It should be emphasised that this result is unreliable for theme parks due to the presence of a single facility.

The largest number of objects is located in the city of Opole (62) (Fig. 3), Kędzierzyn-Koźle (27) and Brzeg (15). All of them are urban municipalities. In addition, Opole and Kędzierzyn-Koźle are the largest towns in the voivodeship by population. The fewest facilities are located in the cities of Zawadzkie, Byczyna, Baborów, Leśnica and Korfantów (1). In rural areas, the number of cultural public buildings ranges from 3 to 0. In 21 villages, there are 3 facilities; in 167, 2; and in 595, 1 cultural centre.

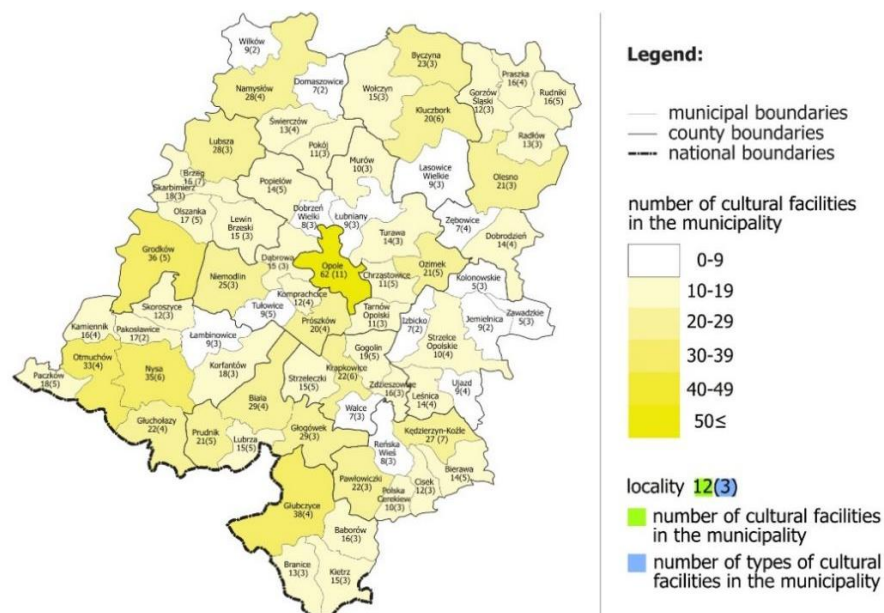


Fig. 3. Statistical distribution of cultural facilities and their types in the voivodeship. Source: own study

In the voivodeship, the statistical distribution of cultural facilities within municipalities is patchy. The largest number of objects is located in the Opole municipality (62) and in the urban-rural municipalities: Głubczyce (38) and Grodków (36). The fewest facilities (7) are situated in the urban-rural municipalities of Zawadzkie and Kolonowskie (5) and in the rural municipality (7) of Izbicko, Zębówice, Domaszowice and Walce. The greatest diversity of cultural facilities is found in the municipalities of Opole (11) and Kluczbork, Krapkowice, and Nysa (6). The lowest diversity has been recorded in the rural municipalities of Jemielnica, Izbicko, Pakosławice, Wilków, and Domaszowice (2) and is limited to access to libraries and community centres.

The next stage aimed to narrow the study's area. The analysis included the typology structure of cultural facilities for a specific municipality. The purpose of the study was to identify the most similar municipality to the Opole Voivodeship. For each unit, the percentage ratio of individual types of centres was determined and then compared with the typological structure of cultural facilities in the Opole Voivodeship. The research included descriptive statistics. They enabled determining how the given types of objects in the Opole Voivodeship are distributed and defining the average values for the voivodeship.

The study results identify the municipalities that have the smallest differences in percentage points. These were urban-rural municipalities: Dobrodzień, Ozimek, Paczków and Praszka. Each of them differs by 3 percentage points. There are 4 types in the municipality of Dobrodzień and Praszka. The Ozimek

municipality has five types of facilities: libraries, a community centre, a museum, a theme park, and a community centre. Similarly, 5 types of facilities occur in the Paczków municipality, including libraries, an exhibition room/memorial room/heritage room, museums, a cultural centre, and a community centre. In the voivodeship, there are 24 exhibition rooms/memorial rooms/heritage rooms, whereas one occurs in the Paczków municipality. The possible connection to local culture across all facility types in the Paczków municipality justifies the choice. The large difference in percentage points between museums and exhibition rooms results from the small number of these objects in the municipality. The voivodeship has 47 museums, and only 2 are in this municipality.

The diversity of cultural facilities in Paczków municipality is similar to that of the Opole Voivodeship (Table 5). The proportional structure enabled the research to be limited to a representative municipality. As a result, the research sample was refined. The study examined the accessibility of cultural facilities at the local level, with the opportunity to extend its scope to a wider context and to formulate generalised conclusions for the Opole Voivodeship.

The accessibility of cultural centres in the Paczków municipality was evaluated based on the prepared research criteria (Table 6). Accessibility, in relation to the research issues and groups associated with each type of cultural centre, is uneven.

Table 5. Comparative analysis of the typological structures of cultural facilities in Dobrodzień, Ozimek, Praszka, Paczków municipalities and Opole Voivodeship. Source: [25,27,28] e-mail and telephone inquiries, websites of local governments and cultural facilities, and other online sources. The data were collected from May to July 2025

Type	Number of objects in the municipality	Percentage share of the cultural facility types in:		Difference in percentage points
		Structure of the municipality	Opole Voivodeship	
Dobrodzień municipality				
library	4	28.57%	24.71%	3.86
museum	1	7.14%	3.87%	3.27
cultural center as type	1	7.14%	3.54%	3.6
community centre	8	57.14%	55.52%	1.62
				Average: 3

Type	Number of objects in the municipality	Percentage share of the cultural facility types in:		Difference in percentage points
		Structure of the municipality	Opole Voivodeship	
Ozimek municipality				
library	6	28.57%	24.71%	3.86
cultural establishment	1	4.76%	2.55%	2.21
museum	1	4.76%	3.87%	0.89
theme park	1	4.76%	0.08%	4.68
community centre	12	57.14%	55.52%	1.62
				Average: 3
Paczków municipality				
library	4	22.22%	24.71%	2.49
exhibition room / memorial room / heritage room	1	5.56%	1.98%	3.58
museum	2	11.11%	3.87%	7.24
cultural center as type	1	5.56%	3.54%	2.02
community centre	10	55.52%	55.52%	0.04
				Average: 3
Praszka municipality				
library	5	31.25%	24.71%	6.54
museum	1	6.25%	3.87%	2.38
cultural center as type	1	6.25%	3.54%	2.71
community centre	9	56.25%	55.52%	0.73
				Average: 3

Table 6. The accessibility level of individual types of cultural facilities in relation to the adopted criteria groups. Source: own study

Amenity type	Cultural facility type:				
	Museum	Library	Cultural centre as type	Community centre	Exhibition/ memorial/ heritage room
object location and its relationship with surroundings	59%	74%	61%	70%	33%
entrance zone	45%	69%	75%	69%	38%
entrance door parameters	80%	83%	100%	94%	80%
horizontal communication	74%	64%	88%	82%	39%
Vertical communication *analysed in case of multi-storey buildings*	19%	25%	0	33%	19%
spatial orientation	9%	7%	13%	0%	10%
hygienic and sanitary facilities **analysed in case of objects reported as accessible**	78%	29%	0	0	0
multi-purpose room – internal door specifications	83%	73%	40%	91%	0
multi-purpose room – wall and floor finishes	92%	67%	75%	64%	0
multi-purpose room – lighting, electrical installation, and equipment	67%	35%	57%	44%	0
multi-purpose room - manoeuvring space	100%	55%	100%	97%	0
multi-purpose room – adaptation to function	85%	50%	73%	71%	0
stage	0	0	36%	0	0
exhibition space – internal door parameters	75%	70%	0	0	60%
exhibition space - wall and floor finishes	71%	83%	0	0	83%
exhibition space - lighting, electrical installation, and equipment	54%	67%	0	0	30%
exhibition space - manoeuvring space	100%	100%	0	0	17%
exhibition space – adaptation to function	41%	33%	0	0	24%
on average:	58%	50%	58%	62%	33%

The lowest levels of accessibility were found in orientation in space (4%) and vertical communication (29%). In turn, the highest results are recorded for manoeuvring space in multifunctional rooms (89%), entrance door parameters (85%),

and door parameters in multi-purpose rooms (84%). The highest degree of accessibility is provided in the community centres, and the lowest in the exhibition/memorial/ heritage room.

A cultural aspect, in the form of multilingualism, is encountered in ensuring accessibility in the region. This aspect relates to the languages used for the exhibit labels, the space navigation system, and the exhibition themes. The need to adapt the facility due to activities related to local culture was not recognised.

The data visualisation was prepared based on the distribution of cultural facilities across individual locations. Thus, an accessibility range of 53% to 71% has been obtained. The lowest level is recorded in Paczków, where the largest number of facilities and the most types of facilities are found. Within the

municipality, accessibility in urban areas is 53%, while in rural areas it is 62%. Data on population density [50] have been plotted on the map (Fig. 4). In the city of Paczków, the population density is 1001 people per km²; in the rural areas of the analysed commune, 65; and in the Opole Voivodeship, 100. Frydrychów and Lisie Kąty were not described using a percentage indicator because they had no facilities. In places with lower population density, such as rural areas, there is typically 1 object. In turn, in urban areas with higher population density, both the number of cultural facilities and the diversity of their types are greater.

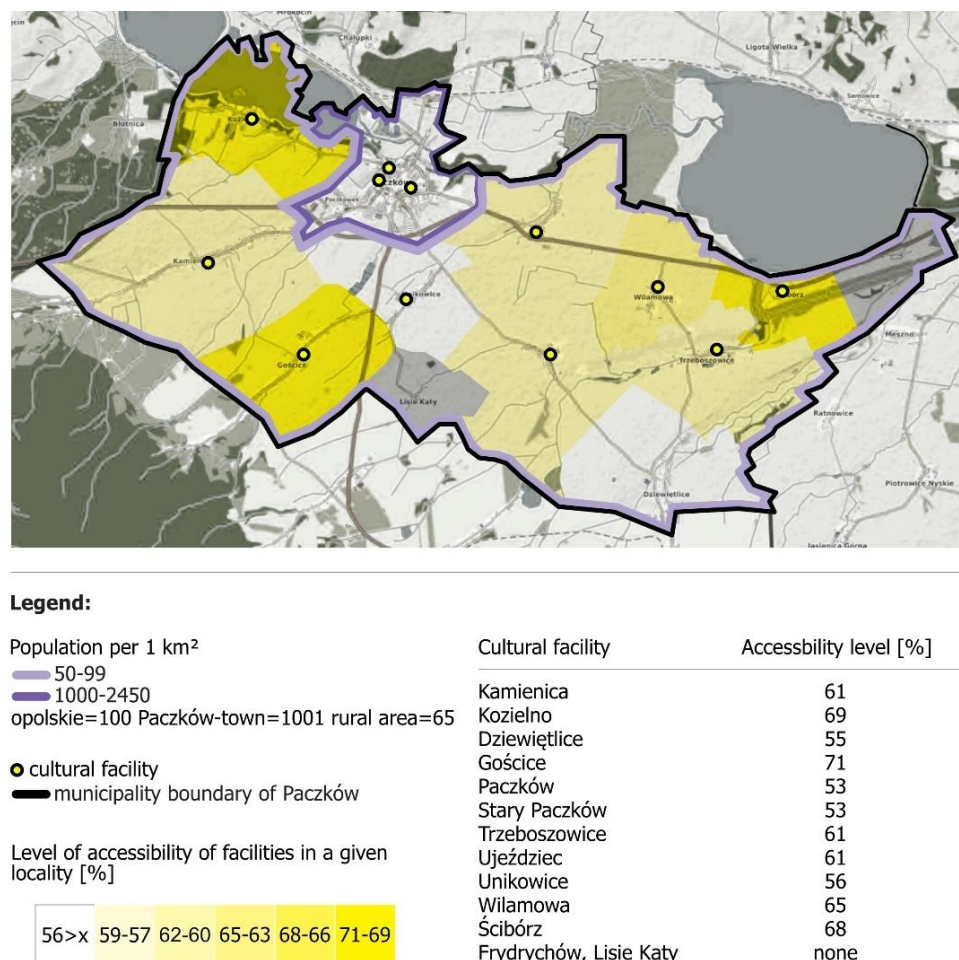


Fig. 4. The level of ensuring accessibility in cultural facilities within the individual localities of the Paczków municipality.
Sources: own study based on [49,50]

4. Discussion and conclusion

This research fills gaps in quantitative data on cultural facilities in the Opole Voivodeship and in describing the stage of development of the structure of accessibility to cultural facilities in the region. However, it does not allow for determining whether this is high or low due to the lack of data from other voivodeships.

Limitations in the catalogue of cultural facilities may include incomplete and out-of-date documents. It may also stem from omissions due to inaccessible data.

In the architecture accessibility study, the limitations included a lack of access to 1 of the listed buildings. Some ambiguity in interpreting the results stems from the similar functions of some facilities.

During the research process, the challenge of translating the type of cultural facility into English has been noticed. There is a visible difference between the named types; however, it may be

justified to combine some of them into a single type because of the similarity of their functions. In addition, understanding the distinctions requires an interdisciplinary approach. Therefore, further research should be conducted within a multidisciplinary research group that includes cultural studies scholars and linguists.

By developing a catalogue of cultural facilities in the Opole region that addresses an identified research gap, this study enables further research employing diverse methods and addressing other identified accessibility issues. These may include studies using GIS methods to assess how spatial distribution relates to natural, socioeconomic, and cultural factors [8].

The research relied on quantitative analysis in both cataloguing cultural facilities and assessing architectural accessibility. Therefore, it may not have explored qualitative information sufficiently, which is significant to architectural

accessibility. Qualitative methods, such as user testing or user interviews, are essential for a comprehensive understanding of how users utilise cultural facilities.

This study focuses on architectural accessibility; however, it is possible to conduct a study that emphasises spatial accessibility. Because these issues are related, it is justifiable to broaden this topic. It may result in more complex findings. It constitutes a subject for further research based on the created catalogue.

The conducted studies enabled the development of a catalogue of cultural facilities in the Opole voivodeship. They defined the existing cultural facilities and their distribution across the region's urban and rural areas. In both cases, community centres and libraries are the largest cultural facility types. In the voivodeship's rural areas, community centres comprise 639 points, accounting for 66% of the total number of cultural facilities, while libraries account for 224 (23%). The remaining 126 facilities are centres of culture, cultural establishments, community houses, meeting houses, exhibition/memorial/heritage rooms, museums, cultural centres as a type, rural halls, and a village community house. A potential homogeneity in access to cultural activities can be observed across rural areas, as certain types of cultural facilities provide offerings similar to the most numerous type: the community centre. Within urban areas, other types of facilities offer a different form of cultural engagement. These include a philharmonic, an art gallery, or a theatre. In the voivodeship's urban areas, there are 76 libraries, accounting for 32% of all municipal facilities. There are also 35 (15%) community centres.

The data indicate more facilities in towns than in villages. However, population density is higher in towns. There may be restrictions due to the higher population burden. Providing culturally accessible facilities for a large number of people is associated with organisational limitations and requires infrastructure adaptation. These facilities should be a priority for ensuring accessibility, given the potential for more people to use them.

In the Opole Voivodeship, community centres constitute half of the cultural facilities. In both urban and rural areas, they make up the largest share of this type of facility. For the analysed municipality of Paczków, the accessibility level is 62%, the highest among all types. This suggests ensuring accessibility in the spatial context for the voivodeship and architectural in the case of the Paczków municipality. However, the data obtained refer to a representative municipality; therefore, this value may vary across other municipalities. Local factors may affect the results. They may include functional issues, building character, and aspects related to organisation and environment.

Selecting a representative municipality enabled the examination of the architectural accessibility of the buildings and, as a result, the identification of prioritised areas for improving architectural accessibility. The influence of the cultural aspect, such as multilingualism, on this issue has been determined. Its occurrence in the system of spatial orientation, in exhibit labels, and in exhibition subject matter has been noted. Multilingualism is a significant factor to consider when designing space. It appears in the issue of spatial orientation, the first prioritised area, with a 3% accessibility level. The second-lowest-rated area was vertical communication, with a score of 29%; the third was adapting the room to the exhibition function, with a score of 34%, where multilingualism also arose. Therefore, model design solutions should consider cultural factors, particularly since spatial orientation is a prevalent issue across all cultural facilities. Using universal solutions can

improve the accessibility of all facilities in the Opole Voivodeship.

Based on the developed catalogue of cultural facilities and criteria specified in this study, it is possible to conduct further research for other voivodeship municipalities, including those with a highly similar structure, as well as in additional municipalities within the voivodeship and in other regions. Because data on the accessibility of other cultural facilities in the voivodeship are lacking, it is not possible to determine whether the barriers are characteristic and, if so, to what extent. The same method can therefore be duplicated in research on other functions and levels of accessibility.

Addressing specific accessibility barriers may prove challenging due to substantial financial requirements, the considerable extent of necessary work, and the historic character of the buildings, as is the case with the 'Dom Kata' in Paczków. Accessibility can be improved through short-term measures without large financial outlays, such as developing and implementing a spatial orientation system or changing the surface finish of walls and floors.

Model solutions can also refer to the design of exhibition spaces, taking the cultural factor into account. This is justified by the scarcity of research on this subject and the need for an individual approach given the region's uniqueness. Importantly, the solutions used should not be limited to visual messages [51]. Accessibility should be ensured by applying the seven principles of universal design.

As noted by previous researchers [9], different functional building layouts affect spatial mobility, accessibility, and the duration of visitors' stay. In the cultural facilities of the Paczków municipality, this issue appears to be particularly complex and pronounced, as orientation in space received the lowest level and was identified as the highest-priority area for improvement. It may therefore be assumed that a system of orientation in space should be designed to accommodate different building layouts and to be available in multiple languages, reflecting the cultural context of Opole Voivodeship. Its primary purpose would be to facilitate independent navigation for all users, regardless of the building's configuration, thereby enhancing the overall accessibility of cultural facilities and potentially increasing visitors' stay durations. On the other hand, as noted by other scientists [8], accessibility is a complex issue also influenced by financial constraints [8]. Therefore, proposed solutions should not only be adaptable and easy to implement with minimal effort, but also economically feasible. Studies conducted in the municipality of Paczków revealed low accessibility in exhibition spaces. Although effective technologies, such as Virtual Reality (VR) [9] and 3D printing [11], have been shown to improve accessibility, their implementation requires substantial financial investment. Nevertheless, these technologies have considerable potential for enhancing the accessibility of exhibition spaces.

The scientific novelty of the research lies in the comprehensive identification and cataloguing of existing cultural facilities in the Opole Voivodeship, as well as determining their number and typology. Using the collected data, the analysis identified Paczków as the municipality whose structure best represents the typology of cultural facilities in the voivodeship, thereby justifying its selection for the in-situ studies. In addition, the study introduces a new accessibility assessment methodology in the form of a checklist. Its innovation stems from the inclusion of multilingualism as a cultural characteristic of the Opole Voivodeship - an aspect not yet considered in previous studies.

The proposed set of accessibility assessment criteria can serve as a widely applicable tool for evaluating accessibility in

other cultural facilities across the Opole Voivodeship. The identified barriers form the basis for developing guidelines to improve accessibility. Another innovative contribution of the study is examining accessibility challenges within a cultural framework, a perspective that remains largely underexplored in existing scholarship.

The research contributes by filling a knowledge gap with data on the number and typology of cultural facilities in the Opole Voivodeship. The study enabled the identification of a representative municipality to assess accessibility conditions and determine the barriers present within its cultural facilities. The findings indicate directions for further research on the accessibility of cultural facilities.

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