

Mobility and Sustainable Cultural Tourism (Case Study: Cracow and Warsaw Old Towns Accessibility)

Ostrowska-Tryzno A* and Pawlikowska-Piechotka A

J. Pilsudski University of Physical Education in Warsaw, Poland

Abstract

Research aims: Sustainable tourism means reducing barriers of accessibility in the tourist destinations. It requires the creation and promotion of barrier – free space, facilities and services. The aim of the study was to examine the current accessibility of Cracow and Warsaw historic districts, which are the most popular tourist destinations in Poland. Tourists with motor, visual and hearing impairment require special aids to visit historical cities and tourist attractions (as museums) safely and relatively independently. Our research objective was also to outline a model of principal improvements to enhance accessibility to heritage sites, which could be replicable in the similar contexts of other Polish historic cities (as for example in Torun).

Research material and methods: The research was conducted between 2012 and 2015 in Cracow and Warsaw Old Towns both are medieval historic districts enlisted to the UNESCO World Heritage List and create popular tourist destinations. Information on tourist accessibility of the Old Towns was gathered based on experience from the authors' visits, observations and field research, as well as publications, law regulations, local authorities strategies undertaken to improve accessibility of tourist reception areas.

Research results: Accordingly to the law regulations, in Poland newly erected buildings and public space must be accessible to persons with hearing, visual and motor impairments. But still, almost 70% of museums and tourist attractions at heritage sites are inaccessible to persons with motor impairment. There are no enough provision of services and facilities dedicated to disabled. For example visual information is too rarely accompanied by records in the Braille alphabet or with sound – visual assistance. The article presents the most important modifications to be applied in aim to enhance the accessibility of Cracow and Warsaw, the two most popular tourist destinations in Poland, and identifies a number of the 'best practice' recommendations to be applied to sustainable planning and management of tourist space of high cultural values with regard to disabled tourists.

Conclusions and discussion: Removing barriers for disabled tourists in historical buildings is often difficult not only due to the high costs of such projects, but also due to strict requirements issued by the Polish Heritage Conservatory office (which usually prevent extensive intervention in historical buildings). The open question remains whether entirely 'mobile tourism' is achievable in a historic city, on how high costs and how big compromises are necessary. Moreover, as each historic site is unique - an individual approach, rather than universal model, is necessary to enhance tourism sustainability and reduce barriers.

Keywords: Tourist mobility; Accessibility to historic towns; Barrier-free destinations

Introduction: Persons with Disabilities and Tourism

There are about 700 million persons with disabilities around the world. Modern society is quite well aware of the principles of integration of people with disabilities. Therefore a greater understanding of the accessible tourist reception space is necessary. Today people with disabilities can visit almost any destination in the world and theoretically experience all impressions arising from exploration of the heritage sites. Accordingly to the recommendations declared by ENAT (European Network for Accessible Tourism), the accessible tourism includes [1]:

- Barrier - free destinations: Infrastructure and facilities.
- Transport: By air, land, sea suitable for all users.
- High quality services: Delivered by trained staff.
- Activities, exhibits, attractions: Allowing participation in tourism by everyone.
- Marketing, booking systems, web sites and services: Information accessible to all.

However people with special needs and requirements regarding

the mobility are sometimes frustrated with the lack of facilities that would enable or make easier their mobility. Especially people with disabilities often find that their visits to historical cities are hampered or made altogether impossible by various barriers, both immaterial (social barriers, e.g., prejudice, thoughtlessness and lack of empathy) and technical ones (architectural and urban). Construction barriers (the interior of buildings and the surrounding public space) deepen isolation by preventing persons with motor and visual impairments from accessing buildings or even entire historical urban complexes they are interested in. Examples of barriers that persons with disabilities have to cope with inside historical buildings (museums) are narrow

***Corresponding author:** Ostrowska-Tryzno A, PhD Faculty of Tourism and Recreation, J. Pilsudski University of Physical Education in Warsaw, Poland, Tel: +48504 240 942; E-mail: anna.tryzno@gmail.com

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doorways, stairs and the lack of appropriately adapted toilets. Open-space barriers that prevent free and independent travel, on the other hand, include uneven terrain and badly designed pedestrian crossings. Visual information is too rarely accompanied by a transcript in Braille (for persons with visual impairment), and aural information is too rarely accompanied by visual information (for persons with hearing impairment). Naturally, these shortcomings stem from financial reasons: preparing a building, e.g., a museum, for tourists with motor or visual impairment is expensive. Nonetheless, old towns in Polish cities and the interior of historical buildings (museums) are being improved in this aspect. All revitalisation programmes for historical buildings and urban complexes are legally obliged to take into account the needs of persons with disabilities (Figure 1).

Old-town districts of Polish cities (Gdansk, Cracow, Poznan, Warsaw, Torun and Wroclaw) have populations of several hundred to over a million. Moreover, the districts are visited by millions of tourists each year. However, not all tourists are able to freely manoeuvre through a city's public space, including those that cannot access historical buildings and urban complexes in old towns. The Poland without Barriers campaign, a national initiative launched in 1994, supported by local self-governments and governmental institutions, aims to improve the accessibility of the public space for all users (tourists and members of local communities). The campaign addresses those parts of cities in particular with architectural and urban values that are highly attractive to tourists. These historical buildings and areas should be accessible for persons with different degrees and types of disability (including visual disability), adults with small children and elderly persons. The most urgent actions that should be taken within old towns are preparing the surface of appropriately wide transit routes, removing or lowering high pavements, adapting restaurants, museums and hotels for persons with disabilities and providing tourist information. Also important is access to public toilets, in which at least one cabin should be adapted for persons with disabilities. Many examples show (Cyprus, Malta) that by providing basic adjustments to the facilities, clear and reliable information, and understanding – in a broad sense – needs of disabled, has resulted in an increased number of visitors and customer satisfaction. Furthermore improvement of accessibility to tourist services and facilities at reception area at the same time could enhance the quality of life of the local community [2].

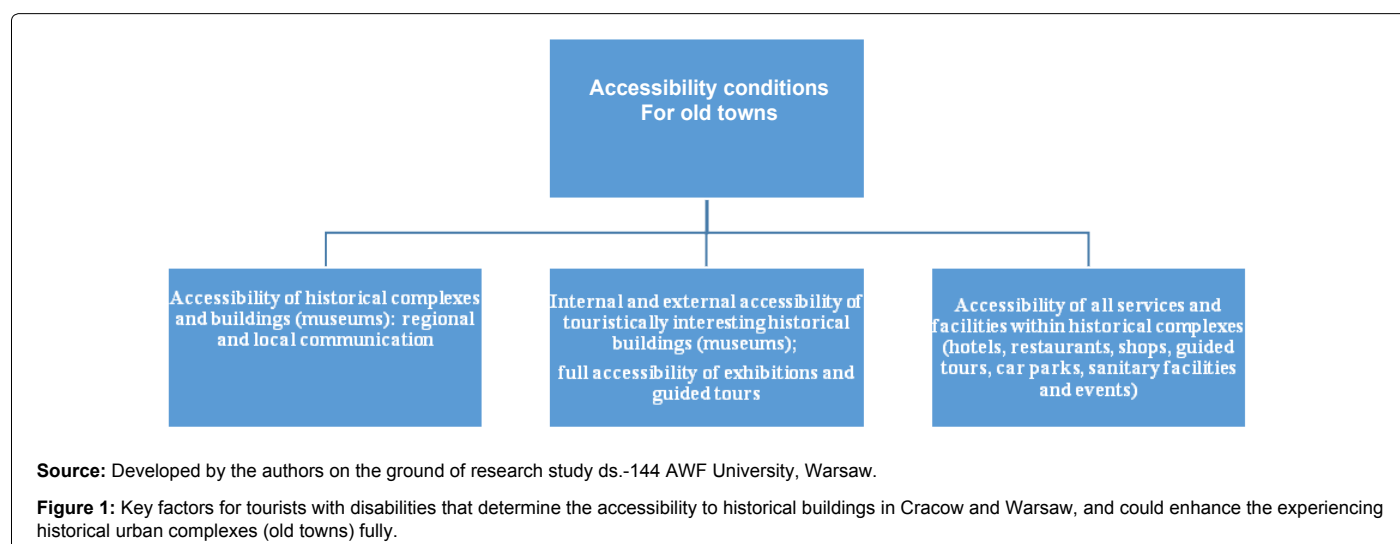
Research Study Assumptions: Aim, Methods and Material

Mobility in tourism means making it easy for all to experience tourism. The needs of special assistance, service and facilities are of various kinds and are related to the individual physical condition (visual or hearing impairments, wheelchair users). This study presents the results of field research conducted in 2012-2015 in Cracow and Warsaw, on the ground of the Project Ds.-144 carried out by authors at the Joseph Pilsudski University of Physical Education in Warsaw. The grant was financed by the Ministry of Science and Higher Education in Poland. The field surveys were conducted in Cracow and Warsaw historical districts (Cracow Old Town and Warsaw Old Town). Information on tourist accessibility of Cracow Old Town was gathered on the experience of the authors' occasional visits to Cracow, publications and Internet sources. Information on tourist accessibility to Warsaw Old Town was gathered on the ground of systematic surveys (non-published primary data collection), carried out by Master Course students, Faculty of Tourism and Recreation from the Joseph Pilsudski University of Physical Education in Warsaw (usually in spring semester: April-June), under supervision of authors (Table 1).

The general objective of this research was to examine the experiences of disabled tourists, examine the tourist routes accessibility, and examine the accessibility of hotels, restaurants, museums and main tourist attractions. We were especially interested in the degree to which historical urban complexes were adapted for the needs of persons with disabilities (not just wheelchair users), especially elderly persons, persons with motor disabilities and blind or visually impaired persons.

The following factors were taken into account during analysis of the accessibility of historical complexes and individual buildings (in Cracow and Warsaw):

- Transport accessibility of the Old Town (local public transport and car parks).
- Accessibility of the most important tourist attractions and the most popular historical objects (scenic overlooks, religious objects, relics of architecture and museums).
- Visiting without barriers to museums in the Old Town.



City	Accommodation capacity (hotels)	Number of tourists staying at hotel	Number of stays at hotels	Number of stays at hotels (foreign guests)
Wrocław	5667	445,207	729,026	312,714
Cracow	15,485	1,083,999 (4,000,000 in 2014)	2,260,650	1,426,737
Warsaw	18,596	1,820,647 (4,600,000 in 2014)	2,977,650	1,329,739
Poznan	6246	416,644	702,960	280,681

Source: Based on data collected by the Central Statistical Office [5].

Table 1: Tourist traffic in selected Polish cities, considered are voivodeship cities with historical urban complexes and over 500,000 stays at hotels per year in 2009.

- Hotel accommodation within the Old Town accessible to persons with disabilities.
- Availability of accessible public toilets.

The aforementioned field research was complemented with analysis of the following materials (secondary data): literature, laws in force, strategies of Cracow's and Warsaw's authorities, actions undertaken to improve accessibility of old towns for tourists with disabilities and recommendations issued by the ICOM UNESCO Documentation Centre, i.e., 'Museums without Barriers: Heritage: Care-Preservation-Management' [3] and 'Museums Without Barriers: A New Deal for the Disabled', ICOM Foundation de France [4].

Case study: The Old Town in Cracow without Barriers

Cracow as tourist destination

The Cracow Old Town, the historic centre of the city and former capital of Poland, had been found in the 13th century and in the 1978 was enlisted to the UNESCO World Heritage List. The area covers about 150 ha, and Old Town creates a significant tourist attraction due to the numerous medieval and renaissance houses, palaces, churches, fortifications. According to the recent data published by the Polish Statistic Office [5], Cracow was visited by 4.0 million tourists in 2014.

Being a popular tourist destination, Cracow has made, in comparison to the other Polish cities, the greatest progress in introducing the barrier free improvements for persons with disabilities. It has been a success of the Cracow without Barriers Project, carried out consistently since 1997. The project is further expanded by initiatives such as 'Touch a Monument: Learn History' project (launched by the Museum of Archaeology in Cracow), dedicated to persons with hearing and visual impairment. The greatest tourist attractions, i.e., the Main Old Market Square, Planty Greens, and the Royal Wawel Castle, are accessible by persons with disabilities (although Wawel Castle is only partially accessible). The entire Main Old Market Square has a smooth surface made from concrete slabs and granite tiles. Although some restaurants and cafes have stairs at the entrance, persons with disabilities can sit in on-site gardens opened from spring to autumn season. A number of streets off the Main Old Market Square have reduced car traffic, lowered pavements and a smooth surface. Other streets will be revitalised to achieve this effect in the future. Museums in the Old Town, which are still difficult to access by persons with disabilities, will also, undergo similar modifications. So far, there are some museums adapted for persons with disabilities, include the International Cultural Centre on the Main Market Square, the Manggha Museum of Japanese Art and Technology, the Museum of Archaeology and the Wawel Museum (partially adapted: visits

are possible in winter, i.e., during low tourist traffic). There are also some revitalisation plans, which include the Historic Jewish District Kazimierz, where pedestrian routes will be lowered and smoothed out. Synagogues and restaurants will also be adapted for persons with disabilities. Museums in Cracow adapted for persons with disabilities also include seven completely accessible establishments (the National Museum in Sukiennice, Szolayscy House, the Historical Museum of the City of Cracow, the Jagiellonian University Museum and Bishop Erazm Ciolek Palace. The latter was awarded during the first edition of the Cracow without Barriers Competition in the 'Historical Building' category. Partially adapted museums include the National Old Theatre, the Museum of Geology and Joseph Mehoffer House.

Disabled tourists and local transport

However many improvements have been applied, transit through the city is still a great challenge for persons with disabilities due to the numerous barriers they encounter along the way. Cracow has been introducing several categories of aids to help persons in wheelchairs and with visual and hearing impairment to travel. Financial support includes discounts and privileges for persons with disabilities, who are entitled to free or discounted travel on Cracow's public transport and the national bus and railway network with an appropriate ID card. The discount depends on the degree of disability. Furthermore, persons with disabilities are entitled to financial support from the City of Cracow for disability transport services based on a disability degree medical certificate. Disability transport services can be ordered via telephone and are monitored by the Disability Division of the Social Affairs Department. Persons with disabilities may also petition the city for parking permits, which entitle them to discounts when parking in paid zones. The permits also allow persons with disabilities to park in special parking spots and exempt them from adhering to some 'no vehicle entry' and 'no parking' traffic signs. Parking spots for persons with disabilities have been created in paid parking zones. Currently, a total of 147 parking spots are available for persons with disabilities in the P1 subzone of the Old Town. Aids for persons in wheelchairs and with hearing and visual impairment are becoming more and more popular on municipal public transport. Low-floor Bombardier tramway trains announce each stop vocally, which helps persons with visual impairment know their location and what stop to get off the vehicle at. In addition, the announcement system is linked to information displayed on electronic boards inside the trams. Aids introduced during the repairs of main traffic routes are extremely important. For instance, during repairs on Długa Street, coloured bricks with bumps were laid in places where the pavement connects to a pedestrian crossing. The new surface helps persons with visual impairment find their bearings and indicates places where the pavement ends and the road begins. The pavement itself was lowered at pedestrian crossings. Furthermore, each junction on Długa Street with traffic lights has been equipped with auditory cues about the light status (green or red) [6]. Tourists with disabilities visiting Cracow are able to rent motorised scooters that can travel over hills, different terrain (e.g., grass and gravel) and low kerbs. They are also extremely useful for overweight persons (up to 150 kg), easy to handle and safe. Furthermore, rental services transport the scooters to and from any location in Cracow and its vicinity (www.jordan.pl). Persons travelling over considerable distances can also take advantage of wheelchair rental services (e.g., by Rakowicki Cemetery).

Accommodation without barriers

In Poland according to law regulations, all new accommodation facilities must be adapted for persons with disabilities. However, there

are many historical buildings in Cracow Old Town without such improvements. Although they are gradually modernised to be adapted for the needs of persons with disabilities, the process is slow and expensive. Present regulations clearly indicate requirements related to adapting hotels for guests with disabilities. Individual types and categories of buildings and obligatory disability aids are described in detail in the Ordinance of the Minister of Economy of 8 August 2002. Minimal requirements are described in the Ordinance of the Minister of Economy of 2013 on Hotels and Other Establishments Providing Accommodation Services. The number of buildings adapted to the needs of persons with disabilities can be found in various sources. The data are published by the Municipal Council of Cracow, the Polish Tourist and Sightseeing Society and various organisations dedicated to persons with disabilities. In Cracow, there are 21 hotels that declared being adapted to the needs of persons with disabilities. The list is available at the website of the Municipal Council of Cracow. Most of these hotels are located in the strict centre of the city. The Old Town has eight hotels adapted to the needs of persons with disabilities (including one hotel adapted partially). This includes three five-star hotels, one four-star hotel and five three-star hotels. According to information available from the Polish Tourist and Sightseeing Society on all accommodation establishments, which could meet the criteria provided by the Tourism for Everyone Project, Cracow has 37 establishments adapted to the needs of persons in wheelchairs and 17 establishments with aids for blind persons. In comparison, Warsaw has 47 accommodation establishments available for persons with motor impairment and only three establishments adapted to blind persons.

Tourist information for persons with disabilities

Access to tourist information is becoming easier thanks to various institutions and organisations publishing a significant amount of information. Moreover, websites present information in increasingly diverse forms (e.g., audio clips, large print, visualisations and helpful mobile applications), making the presentation more effective. Despite these technological aids, local tourist information centres and info points are still crucial as assistance to disabled. Cracow, in addition to freely available tourist information points, has the Cultural Information Centre for Persons with Disabilities, located next to the Stanczyk Gallery at 94 Krolewska Street. The centre is open from Tuesday to Friday. The centre's staffs also provide information on interesting cultural events taking place in Cracow and its vicinity and offer materials about the accessibility of cultural and historical attractions for persons with disabilities (e.g., A Disabled Tourist's Guide). Tourist Information (TI) points have seats designed for persons with disabilities, in which they can take advantage of specialised equipment, mp3 recordings, materials in Braille, CDs with binaural recordings (which make the listeners feel as if they are standing in the described area), books with large print and smart phone applications.

An extremely interesting project has been carried out as part of tourist infrastructure development in the Malopolska Province. The project 'Building the Malopolskie Province Tourist Information System' was developed under the Malopolska Province Regional Operational Programme for 2007-2013. A modern analogously and digitally integrated TI system has been created in cooperation with 25 gminas and powiats in the Malopolska Province. Among the priorities of the project was improvement of accessibility the TI spots for persons with disabilities. As a result of the project, a comprehensive website and materials in seven languages have been developed, and 34 new TI units, 90 information boards, 150 tourist traffic signs and information kiosks open '24/7' were established (Table 2). Furthermore, special seats have

been introduced to selected TI units. The seats come with equipment that allows persons with disabilities to browse and obtain materials they are interested in without the need for assistance (in print or as mp3 recordings). Persons with visual impairment can take advantage of large-print publications, publications in Braille and models of the most important historical monuments (Table 3).

Another noteworthy project that contributes to making Cracow's urban space and tourist attractions available to persons with disabilities is the Royal Road for the Disabled Tourist, carried out by the Municipal Council of Cracow under the Malopolska Province Regional Operational Programme. The main aim of the enterprise is to create an attractive tourist route for persons with visual and motor impairment. The project encompasses 12 models, i.e., bronze sculptures of historical monuments with descriptions in the Latin alphabet (in Polish and English) and in Braille (also in Polish and English). The models were designed to allow persons in wheelchairs to approach them. Thanks to cooperation between the Municipal Council of Cracow, the Polish Association of the Blind, and the Polish Special School and Educational Centre for Blind and Visually Impaired Children on Tyniecka Street in Cracow, transport maps and tourist maps have been developed to make travelling and discovering the city's tourist attractions easier for blind and visually impaired persons. The maps come with books that explain abbreviations and describe historical monuments in large print and in Braille alphabet. Furthermore, a GPS system has recently been introduced and users can listen to information about a given monument and available aids for persons with disabilities via a mobile phone. The maps can be rented at City Information Points on Jana Street and at the Wyspianski 2000 Exhibition and Information Pavilion.

As a closing remark, it is worth adding that the aforementioned initiatives on the part of Cracow's authorities have been acknowledged by international institutions. Cracow achievements were placed eight in the finals of the Access City Award 2012 competition. The competition is organised by the European Commission and aims to reward cities that significantly contribute to the accessibility of the urban space for persons with disabilities.

Case Study: The Old Town in Warsaw without Barriers

Warsaw programme of actions for persons with disabilities

The Warsaw Old Town, with its numerous medieval, renaissance and baroque houses, churches and the Old Town Market has been registered on the UNESCO World Heritage Site in 1980. The district area covers about 26 ha. Accordingly to the recent report of Polish Statistic Office [5] in 2014 there were about 4.6 million tourists in Warsaw.

The Warsaw Programme of Actions for Persons With Disabilities for 2010-2020, currently carried out by the Municipal Council of Warsaw, is the result of obligations provided in the following documents: a) the Act on Vocational and Social Rehabilitation and Employment of Persons With Disabilities, and b) Warsaw Social Strategy: Strategy for Solving Social Problems for 2009-2020. The programme was passed by the Warsaw City Board in December, 2008 (Act No. XLVI/1427/2008). It's main aim include, improving the accessibility of transportation, facilities, services, especially connected with cultural heritage, to persons with disabilities (as part of Operational Aim no. 1.1). Improvements concerning the accessibility of the Old Town are also addressed by other projects: the 'Historical Centre of Warsaw: Management Plan' strategy of the Municipal Council of Warsaw, passed in 2012, and numerous initiatives taken under national projects in which the city

Tourist services and facilities	Cracow Old Town	Warsaw Old Town
Hotels	Eight hotels out of more than thirty accessible for persons with disabilities (including one partially accessible).	Eleven hotels (two accessible without barriers: Ibis Hotel and La Regina Hotel, one partially accessible: Dom Literatary Guest House).
Tourist information	Websites, guidebook for tourists with disabilities, tourist information centre adapted to persons with disabilities (publications provided in Braille, CDs with 'voice postcards', binaural recordings that give the illusion of being inside the described space, information and catalogues in large print, e.g., Catalogue of the Greatest Attractions of the Malopolska Province), smart phone applications with tourist information, info-kiosks and models of historical buildings.	Websites, a guidebook for tourists with disabilities, descriptions on walls of historical buildings and streets (specially designed plates also as smart phones applications) and a tourist information centre.
Museums	Museums accessible: 7, museums partially accessible: 4, museums inaccessible: 6.	Museums accessible: 7, museums partially accessible: 2, museums inaccessible: 8.
Public local transport	Tramway (1 line), bus (2 lines), taxis and motorised scooters; wheelchairs rented for travelling over large distances (e.g., at Rakowicki Cemetery).	Metro (2 lines), tramway (4 lines), bus (15 lines), night bus (2 lines), taxis, horse carriages, bicycle rickshaws, 'tourist locomotive' and three stops for a tourist bus and one stop for a tourist tram ('hop on-hop off').
Other services and facilities	Parking spots dedicated for tourists with disabilities, urban tourist routes dedicated to persons with disabilities (<i>Royal Road for the Disabled Tourist</i>).	Parking spots dedicated to tourists with disabilities (12 spots in 6 car parks located in the Old Town area).

Source: Developed by the authors on the ground of research study ds.-144 AWF University, Warsaw.

Table 2: Identified needs of services and facilities improvements to enhance tourist accessibility to heritage sites: Cracow and Warsaw historic districts.

Services and facilities	Proposal for improvements
Public transport to reach museum site	Public transport (local and regional), dedicated parking spots in car parks, extra space for moving onto a wheelchair, extra space for motorised scooters and moving onto sports wheelchairs in car parks; suggested introduction of temporary ramps and platforms onto uneven sections of roads and pavement in historical urban complexes (ongoing consultations with the historical building conservator); suggested extra means of transport (e.g., electric carts, horse carriages, rickshaw taxis) for persons with motor impairment in no-traffic zones.
Access to the main entrance of museum building	Clearly marked main entrance to a building (and access to it via car); transit gates (if present) around the car park accessible without moving out of the car; turnstiles, ticket booths and ticket machines accessible by persons in wheelchairs; wide and even (with height differences of no more than 2 cm) pavement that is not slippery during rain; lowered kerb at pedestrian crossings (with height differences marked through different colour and surface); use of contrasting colours to mark the path to the building entrance; resting spots along pedestrian routes; on-site maps with marked locations of historical buildings, services (shops and restaurants), museums, and galleries; information provided by means of letters, numbers and pictogram's (with approval on the part of the building conservator); ground-level entrance to a building; ramps of legally acceptable size as alternatives to stairs; alternative entrance to a building or hiring assistants for persons with disabilities where ramps are impossible due to technical reasons (narrow pavement) or lack of approval on the part of the building conservator; good illumination at night.
Sanitary facilities available in museum	Sanitary facilities (public toilets and toilets at restaurants and museums) accessible by persons with disabilities, especially persons in wheelchairs, and marked with pictogram's.
Vertical and horizon communication within the museum	Marked height differences; elevators and platforms on stairs; glass, see-through doors and wall panels with warning marks; elevators, corridors and doors accessible by persons in wheelchairs; even, no-slip floors; long corridors and passages with places for rest; evenly lit interior with no reflections (with the approval of the building conservator).
Exposition inside the museum	All rooms and exhibits accessible by persons in wheelchairs; descriptions of exhibits in Roman alphabet, Braille and audio; information readable by persons in wheelchairs; information provided in different languages; expositions prepared for viewing by blind and visually impaired persons according to the 'visit and touch' rule; clearly marked (contrasting colours) and stable exhibits and other equipment in each room; clearly marked evacuation routes with alternatives for persons with disabilities (e.g., in case elevators are unusable).
Exposition outside the building and access to other historical buildings	Easy access to the most important tourist attractions; squares and pedestrian routes with even, no-slip surfaces (height differences no greater than 2 cm); lowered kerb at pedestrian crossings marked with colours and a different surface; access route to the main entrance of a museum or historical temple marked with contrasting colours and a different surface; places for rest along long pedestrian routes and on squares; maps with marked historical buildings, services (shops and restaurants), museum, and galleries; stone or bronze models helping visitors learn the shape of buildings and the layout of the Old Town; models with architectural details (e.g., capitals of columns and portals) located near buildings; information in the form of letters, numbers and pictogram's (with the approval of the building conservator); ground-level entrance to each building; ramps of legally acceptable size as alternatives to stairs; alternative entrance to each building or hired assistants for persons with disabilities where ramps are impossible due to technical reasons (narrow pavement) or the lack of approval on the part of the building conservator; clear information about toilets for persons with disabilities and the location of car parks of public transport stops; good illumination at night.

Source: Developed by the authors, formulated suggestions for Cracow and Warsaw tourist accessibility improvements are based on the field research and the following general principles of universal character: ICOM UNESCO Documentation Centre (1992): Museums without Barriers – Heritage: Care-Preservation-Management ICOM France Paris and ICOM UNESCO Documentation Centre (2013): Museums without Barriers: A New Deal For the Disabled, ICOM Foundation de France, and Paris; (on the ground of research study ds.-144 AWF University, Warsaw).

Table 3: Proposal for the improvements of services and facilities to enhance tourist accessibility to heritage sites: Cracow and Warsaw historic districts (museums).

participates in, e.g., Warsaw Without Barriers Project [7].

Transport in warsaw without barriers (old town)

Since two decades a large portion of the statutory activity of

the Board (WMTMB) has been focused on removing barriers to accessibility. Persons in wheelchairs, elderly persons, persons using crutches or walking frames, pregnant women, persons with visual and hearing impairment and caretakers of small children in prams,

constitute a group of passengers that WMTMB wishes to assist in particular. At present the WMTMB is re-designing municipal transport stops and terminals, also their access routes (this includes building elevators, escalators and ramps as alternatives to stairs). The local transport pool has been also changed, introduced are vehicles adapted to persons with disabilities as low-floor tramway wagons and buses, buses with extendable platforms that help persons in wheelchairs get on the vehicle, and buses in which the floor on the door side can be lowered to reduce the gap between the station and the door, thus helping passengers get on the bus. Passengers can inform the driver about the need for assistance from both the outside and the inside of the vehicle (by pressing a button marked with pictograms of a person in wheelchair or with a sign in Braille). The WMTMB reports that currently all metro trains and 33% of tramway trains, 95% of buses and 32% of rapid transit wagons are adapted for transporting persons with disabilities. All new vehicles have electronic displays and vocal announcements about the current stop, the next stops and transfer nodes. Passengers can reach the Old Town via metro lines (line No 1: Ratusz Arsenal station and line No 2: Nowy Swiat – University station), tramway (four lines: Stare Miasto stop), bus (13 lines: Stare Miasto, Krasinski, Plac Zamkowy and Kapitulna stops) and night buses (two lines: Stare Miasto, Plac Krasinski, Plac Zamkowy and Kapitulna stops). Specialised transport services have been available in Warsaw (in the city and within a radius of 30 km around it) since 1995. The city provides financial support to services that are free when used for transporting persons for treatment or rehabilitation. Currently, 4000 persons take advantage of such services. A number of parking spots in car parks around the Old Town have been dedicated to persons with disabilities: 13 Podwale Street (three spots), 39 Brzozowa Street (one spot), 3 Długa Street (two spots), 8 Długa Street (one spot), 9 Długa Street (one spot) and 18 Długa Street (two spots). Alternative means of transport available to tourists in the Warsaw Old Town are horse carriages, bicycle rickshaws and the ‘tourist locomotive’.

Hotels in warsaw without barriers (old town)

Until recently, not even a single hotel operated within the Old Town was barrier - free. Currently, there are 11, although only three offer rooms adapted to the needs of persons with disabilities. Primary obstacles to removing barriers in Old Town hotels, hostels and suites for rent are the lack of elevators and lack of approval on the part of the historical building conservator for the necessary modifications. Hotel services in historical buildings are exempted from adhering to laws concerning the removal of barriers that newly built or repaired hotel facilities need to follow. As a result, only two new hotels (the three-star Ibis and five-star Le Regina) are completely adapted to the needs of persons with disabilities, and Dom Literatary Guest House is partially adapted. This means that tourists with disabilities with a limited budget still have significant difficulties finding cheap hotel services in the Warsaw Old Town.

Accessible museums and historical buildings (old town)

Unfortunately, only some museums and few historical buildings within Warsaw Old Town are accessible to persons with disabilities. These accessible buildings include:

1. St. John’s Archcathedral (accessible with an assistant).
2. The Royal Castle in Warsaw, fully adapted to the needs of persons with disabilities.
3. The Museum of Warsaw, the Museum of the Military Ordinariate, the Barbican, the Monument Interpretation

Centre, the Museum of Printing, Antonina Lesniewska Museum of Pharmacy and the Old Town Cellars: all these institutions use a common administration/management and are adapted to the needs of persons with disabilities to varying degrees (platform elevators, sanitary facilities and a ramp at the alternate museum entry).

4. The Maria Sklodowska-Curie Museum is not adapted to the needs of persons with motor dysfunctions, but adapted to the needs of persons with impaired hearing (the museum guides were trained in sign language).

The remaining museums in the Old Town are totally inaccessible to tourists with disabilities, i.e., the Museum of Literature, the Museum of Legal Practice, the Central Archives of Historical Records, the Jan Kilinski Museum of Leather Crafts, the Colonel Kuklinski Intelligence Museum and the Asian Gallery. All museums are located in the historic buildings.

Warsaw old town revitalisation plans for increased accessibility

According to the Historical Centre of Warsaw: Management Plan Strategy [7], an important aim of sustainable management of tourism in the Old Town is to ensure accessibility of the area and selected buildings within the historic site (primarily museums and historical buildings) for persons with disabilities. The strategy will involve modifying public transport, the parking system and pedestrian and bicycle lanes, as well as providing an appropriate number of parking spots, removing (as far as possible) barriers to accessibility in public utility buildings (museums, restaurants and banks), adapting pedestrian routes to persons in wheelchairs, preparing an integrated information systems for tourists with disabilities (marking routes and buildings in Braille and in other manners in order to help persons with motor and visual impairment, 3D maps, models and information provided via audio description) and ensuring good illumination of routes and buildings. However, apart from these very general goals, the strategy does not provide details on planned modifications or their schedule. The authors of the document inform that the work schedule and detailed course of modifications will greatly depend on the funds that will be allocated for this aim, and that currently, only the most important directions of future changes can be stated. It seems, however, that despite the low budget, some investment must not be postponed. In our opinion, an obvious example of an issue (not mentioned in the strategy) that should be resolved urgently and efficiently is the lack of public toilets, including toilets for persons with disabilities, in the Old Town. While tourists without disabilities can use toilets in any of the numerous restaurants and cafes in the Old Town, most of these toilets are inaccessible to persons in wheelchairs. One can only hope that future modifications will focus on preparing the surface of the Market Square to remove barriers to accessibility (as has been done in Krakow’s Main Market Square), constructing a wide, smooth pavement along streets that connect to the Market Square, modernising the Old Town museums to make them accessible by persons in wheelchairs (as in the case of the recently modernised Museum of Warsaw), and placing models of museums next to corresponding buildings together with a description in Braille (the Cathedral, the Church and Monastery of Benedictine Nuns, Barbican, a 3D model of the historical the Old Town Market Square and adjoining streets and selected parts of historic houses, (e.g., portals and sculptures). It should be noted that, unfortunately, potential revitalisation of the Old Town historical buildings in terms of accessibility is severely limited by the historical building conservation programme recommendations. Currently, the Old Town numbers 248 service outlets (shops and restaurants), operating in historical houses

reconstructed 70 years ago and located on the Royal Castle Square and in the Royal Castle. Only several of these outlets are accessible to persons with disabilities. Comprehensive modifications (e.g., installing elevators and collision-free entrances) are limited by the conservation programme (developed based on preservation guidelines for historical buildings) or by their surroundings (a pavement that is too narrow to allow ramp for persons with disabilities to be installed).

Accessible Tourism and Historical Urban Complexes

Cultural infrastructure and tourists with disabilities

Tourists travelling to historical urban complexes also visit cultural institutions, e.g., museums, concert halls, theatres, galleries and cinemas. Culturally-minded tourists are interested in renowned theatres and operas as well as in individual spectacles and concerts, which draw the attention of organised tourist groups and travelling individuals. Among the aforementioned institutions, museums are traditionally rank as important cultural values of a given tourist destination. Museums are tied to the history of material culture (museums of archaeology and archaeological excavation sites open for visiting), folk culture (open-air museums and museums of ethnography) and art (museums, collections and galleries). According to the Polish Central Statistical Office, 63.4% of cultural institutions, which are considered as the supplementary tourist base (museums, cinemas and galleries) have buildings adapted to the needs of persons in wheelchairs: 59.1% of theatres, 60.0% of puppetries, 93.1% of operas, 53.8% of operettas, 63.0% of concert halls, 53.5% of cinemas, 25.0% of museums and 35.3% of art galleries and salons. Unfortunately, only 27.2% of cultural centres, 26.4% of community centres, 18% of clubs and 11% of community recreation rooms are adapted to the needs of persons in wheelchairs.

Conditions for adapting museums to persons with disabilities

According to the recent statistical data by the Central Statistical Office in Poland [8], only 11% of museums are completely adapted to blind and visually impaired persons, and 25% of museums (243 of 1000 active museums in Poland) are accessible to persons in wheelchairs. The International Council of Museums (UNESCO-ICOM) has sponsored for many years theoretical researches and promoted practical solutions aimed to provide guidelines how to adapt museums to persons with disabilities and allowing these persons to participate in cultural events and art. UNESCO-ICOM recommendations state that a properly functioning museum should have no social, intellectual or architectural barriers and facilitate direct contact with art for all, regardless the disability. Projects carried out in accordance with the 'Accessible Museum Model' not only involve removing technical barriers, but also preparing expositions in a manners that help blind and visually impaired persons experience deep emotions. The model includes workshops, lessons and educational aids dedicated to persons with different degrees of disability.

Preparing expositions and information for blind and visually impaired persons

From the perspective of visually impaired persons, expositions that can be touched (e.g., the Gallery by Touch) and information provided in Braille or in audio format are crucially important features. The system whereby persons experience contact with art and gain knowledge through touch (implemented during sculpture exhibitions in museums) also proves extremely valuable when provided in open space. For instance, bronze casts of prominent buildings have been

placed along popular tourist routes in historical cities (Oxford, Cambridge and Cracow), together with a description in Braille. Other improvements that a museum can introduce are audio guides for persons with visual impairment and tablet guides for persons with hearing impairment. To sum up, the most important modifications that can make museums and exhibitions accessible for blind and visually impaired persons comprise:

- Clear visual information, good interior lighting (natural and artificial light), bright (but not excessively bright) colours and highlighted visiting routes, escape routes, toilets, stairs and 3D models of each floor of the museum.
- Comfortable rails and guide-ways along corridors, stairs, entry ramps and internal ramps and inside elevators.
- Information provided in Braille and as mp3 recordings to account for persons with visual impairment.
- Exhibitions based on the 'Gallery by Touch' concept (sculptures, reliefs, models and fabrics).
- Organised tours with a guide that involve tactile perception, lessons and workshops also conducted in sign language (phonogestures) for persons with hearing impairment.
- Films shown in an educational room with sign language translation.
- Special textual guides (tablets) for persons with hearing impairment.

Preparing exhibitions and information for persons with motor impairment

The aforementioned aids (related to removing architectural barriers in hotels, transport stations and airports) also apply to persons with motor impairment, as the aids are part of the same guidelines for all public utility buildings. The most fundamental aids and modifications that help visitors in wheelchairs when visiting museum include:

1. Marked parking spots designated for persons with disabilities. Such parking spots should be larger than average to ensure that a person with disabilities can get on and off their wheelchair comfortably. The spots should also be located near the main entrance to the museum, and visitors should be able to drive their cars directly to the entrance of the museum.
2. All external open-space transport routes around a museum (access from the car park to the main entrance and access to an open-space exhibition) should be available to visitors with motor impairments, i.e., they should be smooth (but not slippery) and even in terms of height.
3. Main entrance located at ground level or accessible by an appropriately wide ramp; sliding or automatically opening doors that are wide enough for a wheelchair and do not block its movement; the doorknob and the bell should be reachable by a person in a wheelchair.
4. Visiting route for a person with motor impairment adjusted to a wheelchair (i.e., to its size, manoeuvre space and a turning radius of 150 cm); smooth (but not slippery) floors without thresholds between rooms and without carpets that could obstruct movement.
5. If the exhibition is located on higher floors than the ground

floor, elevators (of an appropriate size), rising platforms or stair climbers are necessary.

6. Appropriately wide rails mounted along stairs and corridors at a height of 75 cm and 90 cm that help persons with motor and balance disorders.
7. Corridors should be at least 150 cm wide (to account for the turning radius of 150 cm); internal doors should be at least 90 cm wide.
8. Sanitary facilities inside museums should have a cabin adjusted to the needs of persons in wheelchairs (according to law, sanitary facilities should be accessible by persons with disabilities).
9. All additional services inside museums (restaurants and gift shops) should be freely accessible by persons in wheelchairs.

Preparing exhibitions and information for persons with mental impairment

UNESCO-ICOM also recommends that museums should organise classes for persons with mental impairment (lessons, workshops and guided tours), which are considered as a part of therapy (especially for children and youth), once enhanced by contact with art and cultural heritage [3,4].

Conclusion and Discussion

Tourists with motor, visual and hearing impairment requires special aids to travel and visit museums and historical cities safely and relatively independently. Unfortunately, despite numerous improvements, the infrastructure of Polish cities, even the most popular destinations, remains only partially adjusted to the needs of persons with disabilities. However we can learn from others and implement the 'best practice' solutions to improve accessibility to heritage sites.

Today, approximately 50 million people with disabilities live in Europe. The European Union decided to spend €5bn on adjusting important elements of the tourist base, e.g., hiking routes, transport and information. The most advanced European countries in this respect are Great Britain (the Transport That Works for Everyone Project was a notable success), France (where 2000 objects were given the 'Tourism and Disability' status) and Germany (where two million tourists with disabilities travelled via train, bus and internal airlines). Among problems considered the most significant are those related to communication, tourist information and low-grade, cheap and available to low-income tourists hotel base (four-star and five-star hotels are usually well-adjusted). Hostels, youth hostels and private accommodation (the types of accommodation tourists with disabilities are the most interested in due to their low cost) continue to constitute a problem.

Another issue is the accessibility of historical buildings and complexes, a subject addressed in many theoretical publications and discussions among tourist traffic organisers, physiotherapists, historical monument conservators, architects and urban planners. One of the most severe problems is using aids that would harmonise fully with the historical background and genius loci of a given area. On the one hand, modifications of this type are very expensive (adapting buildings, especially historical ones, to the needs of persons with disabilities is always costly). On the other hand, contact with art and history brings such significant benefits that from the social point of view, the cost is worth paying.

Another difficulty stems from the fact that modifications need to

be planned individually for each city, city district and building alike, as every case is different, and consequently, no universally applicable model of modifications exists. Adapting a historical building to the needs of tourists with disabilities must be performed individually each time: the unique character, spatial context and history of each building need to be taken into account. Furthermore, every project requires individual decisions in accordance with building conservation recommendations, which are different for each building. Key factors for tourists with disabilities should be taken into account when planning modernisations of buildings in terms of removing barriers to accessibility. These include:

- Access to the building.
- Possibility of visiting the interior and exterior of the building.
- Availability of all services and devices (e.g., restaurants, shops, toured guides, car parks and sanitary facilities).

Sometimes, even a travel to a historical building may be difficult, as streets in old towns usually have paved, narrow and uneven pavement. Traffic free 'calming zones', often introduced in European old towns, are another barrier to accessibility for persons with motor impairment. Rickshaws and horse carriers prove to be useful in such zones. Building ramps provision is usually impossible due to disapproval expressed from the building conservator (who wants to prevent excessive intervention into the historical structure of the building) or simple the lack of enough space at the outside of the building. The only option left in such situations is to build temporary, mobile (dismantle able) ramps and platforms while persons with disabilities use the help of family, friends, staff assistants or other sympathetic persons.

All newly built and thoroughly modernised museums in Poland are accessible to persons with hearing, visual and motor impairments (the Museum of Sports and Tourism, the Warsaw Rising Museum, the Museum of the History of Polish Jews and the Copernicus Science Centre). The 70% of museums that are inaccessible to persons with motor impairment primarily include museums located in old buildings, undated to needs of these persons. As has already been mentioned, revitalising museums and introducing necessary modifications is often difficult not only due to the high costs of such projects, but also due to strict requirements on the part of building conservation plans (which prevent extensive intervention in historical buildings). As a result, some museums located in the historic buildings can only be partially prepared for persons with disabilities. That was the case for the newly renovated the Malbork Castle Museum, the Wawel Royal Castle Museum, the Royal Castle Museum in Warsaw, the Royal Wilanow Palace and the National Museum in Warsaw and the Museum of Warsaw.

It seems that searching for a compromise by developing solutions that would, at the same time, meet the high standards of building conservation and entirely remove barriers to accessibility is often impossible. The authors of this article wish to underline that in their opinion, such compromise could be possible, once the Polish Heritage Conservatory Office will re-evaluate its principles. For example museums in London, located predominantly in venerable 19th century buildings and subject to conservatory protection (buildings with the 'listed' rank), are a perfect example that adapting a historical building to the needs of persons with disabilities is possible to a considerable extent. These museums include the British Museum, the Victoria and Albert Museum, the Museum of Natural History, the Tate Gallery and the National Gallery [4].

Furthermore a comparison between Warsaw and Cracow leads to the impression that the Polish capital still lacks a comprehensive development strategy for tourism without barriers. This is evidenced

by, e.g., the lack of low-cost hotel base (hotels and shelters) within the Old Town, the lack of dedicated tourist routes (similar to the Cracow's Royal Road for Tourists with Disabilities), the provision of only 12 parking spots and insufficient tourist information for persons with disabilities. On the other hand, Warsaw has very good transport accessibility of the Old Town, connected to all districts, stations (primarily through numerous bus lines and bus stops, several tramway lines and the metro), and two international airports. Because cars are not allowed in the historical districts, alternative forms of transport, important for persons with disabilities, are available, i.e., rickshaws, horse carriages and 'tourist train'. It is apparent that if Warsaw wishes to be promoted as a tourist-friendly city, it needs to allocate appropriate resources and develop systemic solutions that can improve the situation. Hopefully, the promises declared by the 'Historical Centre of Warsaw: Management Plan Strategy' will bring the expected result; improve accessibility to the Warsaw Old Town for tourists with disabilities [7-15].

Overall, removing barriers for disabled tourists in historical buildings is often difficult not only due to the high costs of such projects, but also due to strict requirements issued by the heritage conservatory office (which usually prevent extensive intervention in historical buildings). The open question remains whether 'mobile tourism' is achievable in a historic city, on how high cost and how big compromises are necessary. Moreover, as each historic site is unique an individual approach rather than universal model is necessary to enhance tourism sustainability and reduce barriers.

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