“Adaptation of business hotels to the needs of disabled tourists in Poland”

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ADAPTATION OF BUSINESS HOTELS TO THE NEEDS OF DISABLED TOURISTS IN POLAND

Abstract

This paper presents an overview of the issues related to the readiness of Polish hotel establishments to develop the business tourism services for disabled tourists. The purpose of this study is to identify new innovative amenities for business tourism, with particular emphasis on disabled tourists.

The paper has been divided into two parts: theoretical approach to disabled hotel guests in business hotel and the needs of disabled in the Polish business hotels. The authors conducted a study on Polish business hotels. Studies have confirmed that business hotels, like traditional hotels, are not accessible to people with disabilities.

The study established a research hypothesis, which was proved in findings, i.e. the hotels are not prepared for older people and people with disabilities. Besides, the research results substantiated the necessity of the business hotels adaption to the needs of disable people. Also, the paper presents the suggestions on what the disabled guests expect from the Polish business hotels. In respect of doing this, further investments and financial support are necessary to allow creating friendly conditions for the disabled people.

Keywords business tourism, disabled tourist, accommodation, services, amenities

JEL Classification Z30, Z31, Z32

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INTRODUCTION

In recent years, significant changes have occurred in the hotel services market. Poland is not unaffected. One of the most influential is the rapid development of offers for business travelers (Sala, 2008). The concept of business tourism has several, often ambiguous interpretations. Davidson and Cope (2003) define it most comprehensively. In their view, business tourism means all types of trips where the goals are related to professional work. Thus, they can be journeys necessary to conduct work itself or to help the employee to perform tasks more effectively; they can also be rewards from the employer for well-performed tasks. Thus, business tourism can be defined as any or all journeys whose purpose is closely related to their profession, work, or other interests of travelers.

The essence of these trips is usually participation or organization of conferences, congresses, training, fairs or exhibitions, as well as straightforward international meetings. Participants are usually from various fields of science or business and are often members of widely varying organizations. They can also be companies' management staff and employees or diplomats traveling for commercial, scientific, and other reasons. Business travelers usually use the same service facilities as those who travel for leisure purposes, such as accommodation, catering, transport, etc., but have other, more specialist needs, and ser-

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vices should be specifically organized for them (Danylyshyn, Shynkaruk, Prokopenko, Bondarenko, Veres, & Kovalenko, 2019). The destinations are usually large cities or capitals from the given country. Obviously, these are often places offering commercial and industrial services that interest the business tourist. These cities are also popular for business tourists because the headquarters of large companies, and good conference and trade fair facilities, are often located there, and have well-developed and convenient transport connections.

The basic rationale for the trip is a business meeting. This concept is clearly an organized and timetabled event, the meeting or congress at which participants meet to solve a problem or debate topics of interest to them, exchange the views, improve the communication or discuss other important issues. These journeys are also carried out to improve the communication with and between employees or clients. Business meetings may be commercial or non-commercial and often take place outside the organizer's office because of the facilities required. They can last anywhere from several hours to a week, and the number of participants can range from single figures to several thousand people (Rogers, 2003).

1. LITERATURE REVIEW

The basic features of business travels that distinguish them from other types of tourist events are defined by Berbeka, Borodako, Klimek, Niemczyk, and Seweryn (2011) who indicate that it is a "tailor-made" product focused on the individual needs of the customer, which is why it is different every time – this especially applies to corporate tourism products. The components are similar to those for leisure travel, but the business event program is original, tailored to a carefully selected group of recipients. The outcome is a product or tool used to achieve the marketing goals of the company/corporation or to achieve statutory goals: often a specific need of institutional clients.

There are many criteria, classifications, and divisions for defining these types of business events. One of the attempts to systematize the types of business travel was made by the United Nations World Tourism Organization (UNWTO), separating business trips for individuals and groups (Sidorkiewicz, 2011). Individual business trips are related to those professions that require frequent travel and stay outside their permanent place of residence, for example, journalists, politicians, businessmen, etc. The most important forms of this individual travel, carried out by one or several people for the purposes related to their work (but for no longer than 12 months) are trade trips to other enterprises, entering into contracts and visits, giving lectures and performances at concerts, equipment installations, journeys made in connection with professional sporting activities, government and diplomatic missions carried out by members of national governments, including diplomatic and military personnel. On the other hand, group business trips, involving several or many individuals with a common purpose, include participation in training, seminars, symposia, study tours, site inspections and conferences (congresses and conventions), motivational trips, fairs and exhibitions.

In the past, business tourism/business trips were briefly described as MICE (Meetings, Incentives, Conventions, Exhibitions). This means four separate types of individual and group business tourism products. Business meetings include both individual B2B journeys, as well as presentations, consultations, scientific research, as well as group trips, for example, state, business, or diplomatic delegations. Incentives are motivational trips – exclusive trips organized to attractive tourist regions (usually outside large urban agglomerations), financed by employers in order to reward the employees for achieved results, and motivate them to improve and work more efficiently. Conventions are group meetings that include the following types of business events: conferences, congresses, symposia, and training/seminars. Exhibitions concern trade fairs and exhibitions and relate to the presentation of products or services to the invited public, to inform the visitors about new products and to stimulate their sale. Currently, this concept is being extended to include new forms of business events (e.g., meetcentive trips) that go beyond the four types presented above. There are more and more frequent terms: meeting industry, business travel, and tourism.

Business tourists are a group with relatively high requirements compared to other groups of tourists. This applies to both the type of services expected and their quality. Mostly the stays of these tourists are one or a few days associated with a specific event. Due to the nature of their stay, they require above all comfortable accommodation, the possibility of using the hotel restaurant and a small distance between hotel and the station or the airport. These are the basic factors determining the choice of a hotel as a place for business meetings. According to Sala (2011), business and conference hotels should meet certain requirements as to location (allowing easy and quick access both by means of public transport and individual transport, near motorways, airports, railway stations, etc.; also, it is preferable if the location is in the vicinity of areas with natural assets and nearby attractions for spending free time). The service offer should offer a comprehensive "under one roof" package of services, including accommodation, conference rooms, technical equipment, catering, services and equipment, including leisure time management, professional service of business meetings, including conferences and congresses.

The next important aspect is the conference rooms themselves and their professional service (such as adjustment of the appropriate number of equipped rooms and especially conference rooms). The rooms should be of various sizes and combinations, allowing for various business meetings, including conferences, plenary sessions, group classes, panel discussions, and workshop classes. The rooms should be designed in the form of multifunctional rooms that have sliding walls or rotatable boards, allowing to arrange the rooms according to the needs. This allows the users to adjust the size of the room to the needs of the event organized in it. It should also have a direct connection to the gastronomic base, such as buffets, restaurants, coffee services, etc. In addition, auxiliary and office rooms and facilities need to be located at or near meeting rooms. A further requirement may be separated driveways, parking and entrances, allowing private, secure and easy access to the conference rooms, business centers, possibly a store or a warehouse with other equipment needed to carry out the meetings and provide any necessary technical background.

An important element is to ensure comfort in the conference rooms, e.g., adequate air conditioning, comfortable furniture and seating, etc. The rooms should be equipped with good lighting, audio-visual equipment, boards, computers, sound equipment including microphones, as well as equipment and connections for video conferencing. The conference part should have a large foyer where conference reception can be organized, and place for conversations during breaks. It is recommended that the the conference part adjoins terraces and gardens, which facilitates the organization of buffets and bars serving conference participants. Detailed requirements most often concern media facilities (standard equipment includes multimedia projector, projection table, photocopiers and booths for translators).

Business focused hotel rooms should have a separate sleeping area, and a part in which guests can perform the activities related to work, ergonomic office space, adequate lighting, modern means of communication, including a telephone servicing several lines, internet, fax, laptop printer, and TV). It is desirable to have air-conditioning, a basic fridge, household appliances such as a kettle or a coffee maker and a safe. The rooms should be cleaned daily, and the hotel staff should meet the customers' wishes at the highest level through room-service (Kensbock, Patiar, & Jennings, 2017).

The range of catering services should meet the individual needs of participants of business meetings. Usually participants of meetings meet over many hours, therefore, participants should be offered varied food often and probably in small portions. Ethnic and dietary needs should be catered for. Service should be efficient and uncomplicated. The catering complex should be sufficiently spacious, diverse, and large, enabling the organization of meetings, banquets, and events.

Hotels should offer additional accompanying services for leisure time (Ali, Hussain, & Ryu, 2017). Spa & Wellness services, sauna, swimming pools, bowling alleys, gym services, massage rooms, solariums, etc. are recommended. For the basic offer of cultural services: cinema, theatre or tour organization to attractive places. It should be mentioned that the effective functioning of business hotels depends to a large extent on the competence and professional training of

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staff. The staff have the greatest impact on the tourist's assessment of the product. The main tasks of the staff can be supplemented by providing professional information, advice, flexibility and quick response to emerging problems during the business meeting.

Business clients are demanding customers, both in terms of amenities in hotels and in terms of service. They expect a comfortable stay, efficient organization of the meeting, as well as service at a very high level. More and more hotels meet these requirements and the element distinguishing them from the competition (Prokopenko, 2019) are increasingly introduced innovations (Fraj, Matute, & Melero, 2015). Trends in the development of the hotel industry testify to the growing pursuit of the services offered.

Multifunctional, hybrid, and flexible offerings are preferred, which can meet the expectations (Patelenz, 2017). Authors are asked to use 4 cm header and footer.

A definition what is a disability is controversial and difficult. It raises doubts due to tough operationalization. In Poland and in member countries of the European Union, there is no single, universal definition of disability. The most important role in standardization of terminology related to the disability plays the World Health Organization (WHO, 1980). In 1980, the International Classification of Impairments, Disabilities and Handicaps (ICIDH) was created. In this classification, WHO defined a disability as all limitations or, resulting from damages, a lack of possibilities to perform the activities on a level considered normal for a human being. (In the context of health experience, a disability is any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being. WHO differentiated between impairment and a disability (handicap) (Kaganek, 2013). In 2001, the International Classification of Functioning Disability and Health (ICF) was created, which defines a disability as "functioning in multiple life areas, as a result of an interaction between a person (with a health condition) and that person's contextual factors (environmental factors and personal factors) as a spectrum of various levels of functioning at body level, person level and societal level" (ICF, 2001).

According to ICF, disability denotes all the following being their sum: impairments in body functions and structures, limitations in activity, and restriction in participation. This comprehensive approach is useful for prevention and rehabilitation. Disability is a complex, evolving and multi-dimensional concept. It is perceived not as a phenomenon categorizing people, but as a universal people's experience. Disability is understood as a result of barriers, which are met by a person in the environment, and not as a result of damage or of the state of the health (Misiewicz, 2004).

Physical disability is defined as a permanent, morphological, or functional impairment of a locomotor system (musculoskeletal system, including bones, muscles, joints, or motion systems), which, due to its specifics and scale, complicates or prevents the usage of this system in undertaking life activities, whereas the level of disability can vary (Koper & Tasiemski, 2013, p. 112).

Polish act about vocational and social rehabilitation, as well as employment of disabled people defines three degrees of disability (Act from August 27, 1997 about vocational and social rehabilitation of disabled people and their employment):

- slight degree of disability;
- moderate degree of disability;
- considerable degree of disability.

The Convention on the Rights of Persons with Disabilities and its Optional Protocol (A/RES/61/106) adopted on December 13, 2006 by the United Nations relates to persons whose physical, psychological, or mental state permanently or temporarily obstructs or prevents them from fulfilling their social roles and, in particular, it limits their ability to work (Polish Journal of Laws 2011, No. 127, pos. 721 with later changes). The convention was a big step of the international society towards defining and recognition of the modern approach to the disability – from the protective approach to the creation of the society and the environment open for everybody, including and creating equal chances, based on human rights. The Convention aims to assure the sane rights and duties to disabled persons as to other members of the society. It is also to guarantee the participation in the social life as members with full rights who contribute

to the development. The Convention stresses that every disabled person should use the full equalization, the ban on discrimination, and equality towards the law. It underlines the right of disabled persons to the independent and active life and the right to the non-discrimination. A disabled person the same as an able-bodied one has the right to freedom, safety, to the full participation in the social life, the right to the freedom of movement, to the independent life, healthcare, work and education, the right to participate in the political, cultural, artistic and sport life, leisure and tourism adequately to one's interest and needs. The WHO formed also the definition of a disabled person – this is a person who is considered to have a dysfunction of mobility, functionality, or life activity in a degree which makes it difficult to fulfil relevant social roles (Szewczyk, 2015).

Accessible tourism enables the people with access requirements, including mobility, vision, hearing and cognitive dimension of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services, and environments (Darcy & Dickson, 2009).

The main types of dysfunctions causing disabilities are illnesses of the musculoskeletal system, damages of the nervous system, paralysis and paresis, and diseases of the hearing and sight organs (Orłowska & Tkaczyk, 2009).

The Decision of the Minister of Minister of Economy and Labor (Polish Journal of Laws as of 2006, No. 22, position 169) describes minimum requirements in the field of adjustment of the hotels to the needs of disabled persons (reg. act nr188 position 1945 attachment 8):

- in the objects over 50 residential units, at least one living unit should be adjusted to the needs of disabled and for every next 100 initiated residential units – at least one unit;
- commonly accessible elements of the equipment of the object such as the equipment and infrastructure of internal transport, switches, buttons should be placed at the level of 90-110 cm, allowing their comfortable usage for persons on wheelchairs;
- at least one phone should be available for the disabled persons, positioned at the level of 90-110 cm, allowing the comfortable use for persons on wheelchairs;
- at least one stand at the reception should be equipped with the counter not higher than 90 cm with the driveway of minimum height 67 cm – or there should be a separate counter for serving persons on wheelchairs;
- in the catering halls and multifunction rooms and areas, the places should be prepared for serving persons in wheelchairs;
- the buttons and switches in the lifts should be marked for blind persons and the lifts should be equipped with the hearing impaired signalling systems;
- residential units should be equipped with rails and handles facilitating the usage of the hygienic and sanitary devices and equipment;
- light switches, assistance signalling, telephones, and TV steering should be accessible from the bed;
- in the residential units, the furniture should be adjusted for persons on wheelchairs, allowing them to move comfortably, including the driveway of the height minimum 67 cm under the table or desk board and the sink in the bathroom.

All the hotel objects must comply with the conditions for accessibility, except historical objects where the lack of possibilities of introductions of the facilitations without the abuse for the historical character of the building is proven. Further exceptions are mountain shelters, youth hostels, and cruise houses offering less than 150 sleeping places (Drogoń & Granecka-Wrzosek, 2013). A detailed list of requirements for the hotels regarding the adjustments for disabled persons and the outside development, the entrance and the reception, vertical and horizontal transport, equipment in the residential units, hotel sanitary hubs, catering and multifunction areas, external and internal leisure is outside the scope of the article (see also Z. Błądek, W. Błądek, & Manikowski, 2003).

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Functionality and accessibility of the public buildings is closely aligned with the obvious improvement of the quality of everyday life of users of tourist infrastructure. For the needs of the tourists with movement disabilities and on wheelchairs, the following criteria where specified (Drogoń & Granecka-Wrzosek, 2013):

- the convenient object – the entrance without steps, the door width above 80 cm and the lift 110 x 140 cm;
- the accessible object- by the entrance 1-3 steps with the maximum height 16 cm; the door width 70-80 cm, the lift with the cabin of the small surface less than 80 x 120 cm;
- the not accessible object – by the entrance more than 3 steps, the width of the door less than 65 cm, lack of the lift.

The structure of the hotel market in Poland is quite diverse. Based on the official data, in the first quarter of 2017, 10,681 entities in Poland provided accommodation services. The population, classified in the "hotel" type of facility, has 4,064 properties, which accounts for 38.1% of the entire classified accommodation base. The segment of highly categorized hotels (four and five stars), analyzed for the purposes of this paper, is around 2% in the entire structure of hotels (Central Statistical Office, 2018). These facilities are perceived as the guarantor of the highest quality in terms of infrastructure and customer service. The positive image of the object and the good preparation of its employees is equated with the high needs of business tourists and is the subject of the study.

Most five-star hotels in Poland, possibly as many as 68, have an offer adapted to the service of business tourism and actively promote their conference space to service the business tourists (Sidorkiewicz, 2014). According to the data available on the internet portal in Poland, there are 344 facilities promoted as conference facilities. The majority of hotels offer rooms for 200-300 people. In Poland, international hotels are also large-scale hotels. It is estimated that there are currently 15 international hotel chains operating on the Polish market, which offer more than 25,000 hotel rooms in 158 hotels. There are 24 Polish hotel chains and these offer a total of 145 hotels with over 16,000 hotel rooms. Most of these hotels address their offer to business travelers (Property Report, 2015).

In recent years, numerous conference and leisure centers have been created, which are based on former holiday centers. They are located in attractive natural locations, and offer above all, a rest. They have good catering facilities adapted to a large number of tourists and are equipped with sports and recreation facilities. However, currently operating conference and recreation centers are usually not very large and are distant from larger cities and communication centers. This prevents the organization of large congresses and large-scale events. In Poland, extensive statistical data on amenities in hotels for business tourism are not collected. Only the equipment is indicated for business tourism with conference amenities such as in Table 1.

Table 1. Elements of conference amenities equipment in all accommodation facilities in 2009, 2013, 2017 in Poland

Source: Statistics Poland (2017).

Specification	2009	2013	2017
Tourist accommodation facilities (total), including:	6,992	9,775	10,081
hotels	2,836	3,485	4,064
tourist accommodation facilities with a conference room	2,851	3,467	3,680
Conference rooms	6,014	7,651	8,193
Places in conference rooms	376,941	508,480	555,594
Amenities in tourist accommodation facilities (number)			
Professional sound system	2,166	2,824	3,159
Wireless microphones	1,886	2,577	2,918
Slide projector	–*	2,731	–*
Video set	–*	2,244	–*
Multimedia projector	–*	–*	3,272
Video conferencing kits	–*	–*	973
Video conferencing kits	1,656	2,158	2,132
Technical support	2,375	3,217	3,547
Multimedia screens	1,854	2,855	3,230
Flipchart (dry erase board)	–*	1,794	–*
Overhead projector	–*	2,555	2,623
Computers/laptops on equipment	–*	5,131	7,289
Wi-Fi network	2,166	2,824	3,159

Note: * Data not available.

The number of elements of conference facilities for accommodation facilities in the analyzed period is increasing. This increase is particularly visible in the case of facilities that have conference facili-

Table 2. Number of meetings and events according to their category in the years 2009–2016 in Poland

Source: Celuch (2017).

Category	2009	2010	2011	2012	2013	2014	2015	2016
Congresses/conferences	2,127	6,420	9,873	10,622	9,186	10,318	15,043	16,386
Corporate events	1,221	9,669	10,715	4,657	6,202	5,558	11,221	22,629
Incentive events	295	903	4,051	5,305	2,029	2,272	6,914	–*
Trade fairs	357	1,008	2,421	1,716	693	672	802	551
Total	4,000	18,000	27,060	22,300	18,100	18,820	33,980	39,566

Note: * Data not available.

ties with sound systems (the increase in 2009–2016 amounted to 45.8%). In the case of other facilities, the increase was, respectively, with a wireless microphone (54.7%), with technical support (77.7%), with a screen (66.9%), with a flipchart (57.4%). There is a big increase in all analyzed equipment categories. Result from the fact is that the demand for business meetings offer services in accommodation facilities increases (Table 2).

According to the results of the research carried out by the Poland Convention Bureau, Polish Tourism Organization in 2016, in Poland, a total of 39,566 business meetings and events were held (Table 2). This amount has been increasing since 2009, especially in the main business tourism categories. It is clearly visible that the number of business events reduced in 2011, also for consecutive events and until the end of 2012 and corporate events. 2014 was a year of slow rebound in business tourism in Poland and a marked increase in 2015 and 2016. The results of research both on the demand and supply side indicate an increase in the importance of business tourism in Poland.

There is a shortage in Poland of large congress and hotel centers in good locations that meet the world requirements in organizing such events. The establishment of such large congress centers in a tourism region requires the cooperation of many entities involved in creating a comprehensive tourism product, as demonstrated by the previous results (Henn & Bathelt, 2015; Lipianin-Zontek & Zontek, 2017; Marques & Santos, 2017).

The detailed objective of this study was to identify which modern facilities and additional services for business tourism are necessary in the opinion of hotel managers. To achieve this objective, a survey was conducted in the period from July to October 2017. A questionnaire was used, which there was sent by post. The units of the research sample were service providers for business tourism, among which should be mentioned hotels located in Poland, other accommodation facilities (motels, pensions, etc.), holiday and recreation centers.

The subject of the study was hotel managers and other facilities organizing the business meetings. The selection of the sample was random. The source file was a list from the Central List of Hotel Facilities in Poland (CWOH, 2018). The general population was all objects from the list (645 objects), from which every third respondent was drawn. The study questionnaire was provided to 215 entities from the database.

The survey involved and correctly filled out a questionnaire of 60 agents of tourist facilities with infrastructure enabling the organization of meetings and business events. It should be noted that many entities refused to participate in the study. As a result, the rate of return was 27.9%. The examined entities were dominated by hotels, including 2-stars hotels and 3-stars hotels – 34.5%, (4-stars and 5-stars hotels accounted for 26.3%). An important part of the group was also created by other entities organizing the business meetings (9.1%). The actual survey contained 8 questions. This paper presents one question, in order to achieve the intended objective of the paper. Table 3 presents the results of the answer to the question: What kind of facilities provided in the field of technological innovations do you consider necessary in the development of services for a business client?

The results of the research indicate the great attention of hotel managers and other hotel facilities for technological facilities such as wireless internet access throughout the entire facility (45% of managers indicated this amenity as the most important) and the possibility of providing services via mo-

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Table 3. The importance of technological innovation facilities in the development of services for a business client

Source: Authors.

Specification	Strongly disagree Strongly agree				
	1	2	3	4	5
Wireless internet access throughout the entire facility	3.3%	5.0%	20.0%	26.7%	45.0%
Electronic equipment available to clients (smartphone, tablet, etc.)	11.7%	10.0%	11.7%	36.7%	30.0%
Application of "telepresence" technology	5.0%	13.3%	35.0%	31.7%	15.0%
Self-service check-in and check-out kiosks	15.0%	21.7%	45.0%	10.0%	8.3%
Interactive movie, e-books rentals	18.3%	30.0%	36.7%	8.3%	6.7%
Interactive information boards	1.7%	11.7%	21.7%	45.0%	20.0%
Regulation of air conditioning, lighting available in the rooms	6.7%	28.3%	25.0%	26.7%	13.3%
The possibility of providing services via mobile applications (bills, maps, attractions, etc.)	0.0%	1.7%	20.0%	36.7 %	41.7%
Availability of medical and rehabilitation services and equipment	5.0%	23.3%	46.7%	20.0%	5.0%
Facilities for the disabled people	5.0%	40.0%	28.3%	15.0%	11.7%
Availability of sports and recreation services (fitness trainer, sport equipment rental, etc.)	0.0%	8.3%	23.3%	36.7%	31.7%

bile applications (41.7%). Among the important facilities in the opinion of managers, one should indicate electronic equipment available to clients (36.7%), interactive information boards (45%), and availability of sports and recreation services and equipment (36.7%). Average importance was attributed to the following facilities: application of "telepresence" technology (35%), interactive movie, e-books rentals (36.7%), and availability of medical and rehabilitation services and equipment (46.7%). The answers "rather disagree" were most often indicated in the case of regulation of air conditioning, lighting available in the rooms (28.3%), and facilities for the disabled people (40%). Particularly small interest attributed to additional facilities for the disabled, however, similar results were obtained in Poland in this area (Szewczyk, 2017).

2. METHODOLOGY

The exploration of the undertaken topic required the creation of the collection of statistical data based on the data from the Polish Central Statistical Office (CSO) and the Local Database of the CSO.

Three methods were used in the research:

- the quantitative analysis regarding the presence of the facilitations in the accommodation services according to their types and categories, adaptation of the hotel objects in the national and regional systems, as well as the adequate equipment and infrastructure; moreover, the changes in the adaptation of the objects in years 2009 to 2017 were presented; the scope of the research presented below covered the facilitations of the hotel objects and their spatial distribution;
- the method of long-term observation was used, related to the active participation of the authors in tourism activity in Poland.

3. RESULTS AND DISCUSSION

The quantitative studies were conducted and covered the years 2009–2017.

The significance level was assumed 0.05. The analysis was performed with the package Statistica v.12. The basic statistical measures were calculated to perform the analysis of variables of the sample, such as

- arithmetic mean $\left(\overline{X}\right)$

$$\overline{X} = \frac{\sum_{i=1}^{n} x_i}{n},$$

- standard deviation $\left(S\right)$

$$S = \sqrt{\frac{\sum_{i=1}^{n}\left(X_i - \overline{X}\right)^2}{n}},$$

- coefficient of variation (V)

$$V = \frac{S}{\overline{X}} \cdot 100\%.$$

The cut points were calculated as quartiles 1, 2 (median), and 3.

As the initial part, the averaged data for 3 measuring periods are presented, for which the basic descriptive statistics were calculated (Table 4 and Table 5).

In each case, the value of analyzed variables was close to the median, which means that in most cases, the median was a good estimator of the analyzed sample. Given that the coefficient of the variation was between 6% and 32%, it can be stated that the results were quite homogeneous. The average number of the entry ramps in the years 2009–2017 was 2164.33 ± 341.9 and the median was 2200.00; for automatic doors 954.67 ± 257.64 – median 1001.00; lifts adapted for persons with motoric disabilities 1361.75 ± 427.79 – median 1380.00; rooms and bathrooms adapted for persons with motoric disabilities 2056.50 ± 202.94 – median 2056.50; and parking space adapted for persons with motoric disabilities 2162.00 ± 493.56 – median 2162.00.

Based on the presented table, it can be stated that in case of each analyzed variables, the trends are growing meaning the improvement of the hotel infrastructure in particular periods.

It can be noticed that, as for the infrastructure, trends related to the adapted lifts are statistically significant (adapted lift, adapted lift per 10,000 inhabitants, and adapted lift per 1,000 inhabitants). Thus, it can be concluded that the lift was the quickest built and modified element of the infrastructure to adapt the hotel for disabled. Trends for the remaining variables related to the infrastructure were also growing, but their statistical significance was on the border with the significance level of 0.05. It would have been acceptable to lower the significance level to 0.1 in case of such small sample as in years 2009, 2013 and 2017, which would result with the trends statistically significant, consequently.

Table 4. The general characteristics of the number of the devices for disabled in Polish hotels

Source: Authors.

Types of facilities	Entry ramp	Automatically open doors	Elevators adapted for disabled person
Number of devices			
Arithmetic mean	2164.33	954.67	1361.67
Standard deviation	341.90	257.64	427.79
First quartile	1806.00	677.00	925.00
Median (2nd quartile)	2200.00	1001.00	1380.00
Third quartile	2487.00	1186.00	1780.00
Coefficient of variation	15.80	26.99	31.42
Number of devices per 10,000 persons			
Arithmetic mean	0.57	0.25	0.36
Standard deviation	0.09	0.07	0.11
First quartile	0.47	0.18	0.24
Median (2nd quartile)	0.58	0.26	0.36
Third quartile	0.65	0.31	0.46
Coefficient of variation	15.46	26.68	31.04
Number of devices per 1,000 sleeping places			
Arithmetic mean	3.27	1.43	2.03
Standard deviation	0.23	0.27	0.47
First quartile	3.05	1.14	1.56
Median (2nd quartile)	3.24	1.47	2.03
Third quartile	3.50	1.67	2.51
Coefficient of variation	6.91	18.57	23.17

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Table 5. The general characteristics of the number of the devices for disabled in Polish hotels

Source: Authors.

Types of facilities	Rooms or bathrooms adapted for disabled person	Parking adapted for disabled person
Number of devices		
Arithmetic mean	2056.50	2162.00
Standard deviation	202.94	493.56
First quartile	1913.00	1813.00
Median (2nd quartile)	2056.50	2162.00
Third quartile	2200.00	2511.00
Coefficient of variation	9.87	22.83
Number of devices per 10,000 persons		
Arithmetic mean	0.54	0.57
Standard deviation	0.05	0.13
First quartile	0.50	0.48
Median (2nd quartile)	0.54	0.57
Third quartile	0.57	0.66
Coefficient of variation	9.16	23.03
Number of devices per 1,000 sleeping places		
Arithmetic mean	2.96	3.38
Standard deviation	0.20	0.45
First quartile	2.82	3.07
Median (2nd quartile)	2.96	3.38
Third quartile	3.10	3.70
Coefficient of variation	6.76	13.17

CONCLUSION

The results show that business tourism in Poland has many development opportunities. However, hotels that support business tourism in Poland need to constantly evaluate the potential competitiveness of tourism offers, to enable them to improve their product development. Modern trends in these services are forcing the industry into continuous improvement and innovation. However, for their effective utilization, hotel establishments should develop their resources in terms of both quantity and quality. Despite the progress in recent years, overall, the tourist base has remained insufficient adapted to support the disabled people. Only spa facilities and centers authorized to organize the rehabilitation stays for disabled are totally prepared for them. It is initially estimated that around 30% of accommodation facilities were equipped with one or some special amenities. A large part of the service base had only one or two such facilities. Therefore, further investments and financial support are necessary to allow creating friendly conditions for the stay of disabled people. More suitable and adequate devices should be adapted in both new and older buildings.

Lubelskie and Podkarpackie voivodships and Lubuskie and Warmińsko-Mazurskie are particularly neglected provinces, and they need a special help and major activities. It also seems reasonable to extend the scope and frequency of statistical surveys. Progress in adapting the accommodation facilities to the needs of people with disabilities is undoubtedly noticeable. Hoteliers' awareness is increasing and, what is important, they want to deepen their knowledge in this subject. Newly built hotels are planned to meet at least the basic requirements of the disabled.

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