
tourism

WYDAWNICTWO
UNIWERSYTETU
ŁÓDZKIEGO

tourism

25 | no. 1 2015

ŁÓDŹ
UNIVERSITY
PRESS

ŁÓDŹ 2015

Editorial address
Institute of Urban and Tourism Geography, University of Łódź, Poland
90-142 Łódź, Kopcińskiego 31
tel. 48 42 635 63 05, fax 48 42 635 45 50
e-mail: turyzm@geo.uni.lodz.pl; e-mail: kwom@geo.uni.lodz.pl

The printed version is the journal's original (reference) version

Printed directly from the materials submitted to Łódź University Press
First Edition. W.07043.15.0.C

Ark. druk. 20,75

Published by Łódź University Press

ISSN 0867-5856

Łódź University Press
90-131 Łódź, Lindleya 8, 48 42 665 58 63, fax 48 42 665 58 62
www.wydawnictwo.uni.lodz.pl, e-mail: ksiegarnia@uni.lodz.pl

CONTENS

Introduction 7

Articles

MIROSŁAW MIKA – Sustainable tourism: a critique of the academic feasibility of the concept 9

ALINA ZAJADACZ – The contribution of the geography of disability to the development of 'accessible tourism' 19

MAREK NOWACKI – Constraints to attendance at visitor attractions: The case of museums, zoos and botanic gardens 29

MAŁGORZATA DURYDIWKA – The tourism function of rural areas in Pomerania province: diversity and change 39

ZYGMUNT KRUCZEK – Analysis of visitor attendance at Polish tourism attractions 47

JACEK KOTUS, MICHAŁ RZESZEWSKI – Applaying 'mixed methods' in the study of tourist behaviours in the city – an example of conceptualization and application (discursive article) 57

SŁAWOMIR SOBOTKA, ANNA DŁUGOZIMA – Evaluation and development opportunities of the disused lutheran cemeteries within the Maskulińskie and Pisz Forest Divisions for thanatourism 67

JÓZEF P. GIRJATOWICZ – Ice phenomena as a tourism asset on the southern coast of the Baltic Sea 77

INTRODUCTION

Continuing the invitation for young PhDs to present their research in the form of original articles (the practice was implemented several years ago, in *Turyzm/Tourism* vol. 21, issue 1-2), the editors of *Turyzm/ Tourism* decided to publish five other papers prepared by new senior academic staff members, who obtained their degrees in the field of tourism geography.

This issue contains articles written by PhDs from Poznań (A. Zajadacz, M. Nowacki), Kraków (M. Mika, Z. Kruczek) and Warsaw (M. Durydiwka). The topics of these papers were chosen by the authors themselves and concern their current research interests. We would like to remind the reader that vol. 21, issue 1-2 (2011) contained eight papers by PhDs, which together with the articles published in the current issue (vol. 25, issue 1) present nearly all young independent researchers involved in research and didactic activity concerning tourism in Poland. It can be expected that over the next few years the generation of professors specializing in tourism (tourism geography) in Poland will be replaced and the leading role will be played by the researchers whose articles have appeared in these two issues of the *Turyzm/ Tourism* journal.

Apart from the five articles whose authors (PhDs) were invited by the journal, the current issue contains three other works, concerning research methodology as well as the tourist assets of ice phenomena which are very rarely presented in scientific tourism journals.

We hope you enjoy reading this special edition of our journal.

Editors

Mirosław Mika
Uniwersytet Jagielloński
Instytut Geografii i Gospodarki Przestrzennej
miroslaw.mika@uj.edu.pl

SUSTAINABLE TOURISM: A CRITIQUE OF THE ACADEMIC FEASIBILITY OF THE CONCEPT

Abstract: The aim of the article is to raise and discuss, according to contemporary research findings, the most important reservations regarding the concept of sustainable (harmonious) tourism development as well as the barriers to the implementation of its principles in practice. The author points to ambiguities in the interpretation of the term 'sustainability' and, as a result, the methodological implications for tourism studies including the problem of measuring and evaluating 'sustainability' in tourism development processes. In addition it considers the social hostility towards limiting consumption in tourism and the growing climatic, economic and political instability at tourism destinations hindering its implementation of the concept of sustainability. In conclusion, the author proposes a new paradigm for sustainable tourism which does not directly relate to the imperative of harmonious interconnection between differing development goals and values in tourism.

Keywords: sustainable tourism, tourism research, methodology.

1. INTRODUCTION

The question of how to appropriately shape the relationships between tourism activities and the natural and social environment at a destination has been the topic of academic and research debate for years. For over two decades academic discussion on the relationships between environmental, cultural, social and economic values in tourism development has been based on the principles behind the concept of sustainable development (BUTLER 1999, DURYDIWKA *et al.* 2010, GÖSSLING, HALL & WEAVER 2009, HUNTER & GREEN 1995, HUNTER 1997, 2002, IWICKI 1998, JĘDRZEJCZYK 1995, 2000, KIDOŃ 2002, LIU 2003, MIKA 2014, NIEZGODA 2006, PANFILUK 2011, SAARINEN 2006, SHARPLEY 2000, 2002A, STABLER 1997, WEAVER 2006, 2009). The factors that contributed to the incorporation of tourism issues into the worldwide debate on a search for the mechanisms of facilitating harmony in social and economic development came about in the second half of the 20th century. This is when the environmental and social impacts of large-scale tourism investments at destinations began to be discussed. The environmental and associated social implications of rapidly growing tourism activities have became an incentive for some researchers to formulate limits to growth in tourism development. This issue, and the thinking that follows from it, has set the main course of the debate on the relationships between development goals and values in tourism right through to the present.

Originating from the 'limits to growth' concept, the idea of sustainable tourism has been enthusiastically adopted by part of the academic world as a potential solution to the dilemma of linking different development goals with often contradictory forms of tourism activity which are impossible to reconcile, both in the context of 'man–environment' relationships as well as the expected social and economic functions of tourism at destinations. In reference to the key idea of sustainable development, i.e. linking the environmental, social, and economic orders, a holistic approach has been embedded in the concept of sustainable tourism. In turn, social support for the idea of environmental and heritage protection as well as facilitating equal access to the benefits from tourism for local communities, has brought the concept of sustainable tourism into the mainstream as normative. In most tourism research, the interpretation of sustainability as harmonious development has became the paradigm defining the academic approach and perception of tourism as well as the functions of tourist destinations.

Intense academic debate on the definition of sustainable tourism has only led to a reconciliation of its basic principles with a general way of interpretation (HUNTER 2002, LANE 2009, SHARPLEY 2000, 2002a). Despite the fact that the essence and the goals of sustainability are still not accurately defined, the concept of sustainable tourism has been adopted as the theoretical foundation and the interpretive reference point in tourism research. It also serves as a determinant in planning and management at various spatial scales of tourism development (KOWALCZYK 2010).

Since the 1990s, there have been attempts to apply the idea of sustainable tourism in practice. A number of projects financed by international institutions have been developed and yet these have only proven the serious mismatch between its principles and the realities of tourism and socio-economic development. The inability to match theory with practice has found reflection in a handful of implemented so-called 'sustainable' tourism projects which raises questions about the feasibility of this concept. Moreover, it calls for critical reflection on the academic usefulness of the concept of sustainable tourism itself.

The aim of this article is to present, in accordance with the current state of research, some of the most crucial methodological dilemmas which have arisen within sustainable tourism, as well as the practical limitation to implementing the principles of this concept in social and economic life.

2. MAIN RESERVATIONS

A critical discussion of the issue should be preceded by pointing to the significant differences between the ideas of sustainable tourism and the perception of tourism as a sustainability factor in socio-economic development. Both concepts, seemingly similar in their content, are in fact separate issues requiring specific solutions in both theoretical and methodological aspects. It is something quite different to seek ways for sustainability in tourism, for instance, in terms of forms of tourism, means of transport, tourism facilities or the various categories of tourism destination (from protected areas to multifunctional urban centres). It is completely different to try and use a tourism activity and its accompanying effects to implement the concept of sustainability in local development (socio-economic development). Naturally, it is impossible to elaborate on both issues at this point. Narrowing the discussion down to the dilemmas that have grown around the core and goals of sustainability in tourism, it is necessary to emphasize the fact that today it is difficult to connect the concept of sustainable tourism to socio-economic development in a situation of weakened faith in its universal formula. Additionally, it is cumbersome to connect the concept of sustainable tourism with interpretations of socio-economic development that emphasize the non-linearity of development processes as well as the multiplicity and divergence of values (CHOJNICKI 2008, DOMAŃSKI 2004).

The academic value of the concept of sustainable (harmonious) tourism development has been questioned since the beginning of the debate on its principles and many critical arguments have been put forward by geographers (BUTLER 2005, SHARPLEY 2002a). The field of academic debate on sustainability in tourism has been determined by the discussion and reservations voiced against its foundations, ambiguity in the interpretation of 'sustainability', difficulties in the operational development of its theoretical principles in the research process, the analytical tools used to assess the implementation of sustainable principles in tourism as well as proposals for regulatory limits to tourism consumption and the functioning of tourism businesses put forward by some 'as heralds' of sustainability (BUTLER 2005, CERON & DUBOIS 2003, GÖSSLING, HALL & WEAVER 2009, GÖSSLING *et al.* 2013, SAARINEN 2006, SHARPLEY 2002a, b, WEAVER 2009). Moreover, there are serious concerns about the policies of institutions supporting the implementation of green growth principles in tourism, especially true in a situation of change in the global climate that significantly complicates the development of many world tourism destinations (PEETERS, GÖSSLING & LANE 2009, UNEP 2011). It is also important to bear in mind the question of the depth of the concept of sustainable tourism in the culture of the West and the resulting problem of its appropriacy in other socio-cultural contexts.

3. SUSTAINABILITY – THE INTERPRETIVE RANGE

In the case of concepts related to the principles of sustainable development, the basic methodological issue is the ambiguous interpretation of the English word 'sustainability'. In Polish, there are various interpretations each putting emphasis on different aspects of the relationship: environment – economy – society. The meaning of sustainability is understood differently in various academic disciplines. For example, in reference to biological systems, sustainability means the ability to support and preserve divergence and life processes over time. From the perspective of territorial systems, sustainability means preserving a correct relationship between the environmental,

economic and social subsystems that determine the development desired by local communities, provided it takes place within the limits of acceptable environmental change. In reference to the mainstream and spatial economies, the implied meaning of sustainability is in sustaining factors of growth in local development, whereas in ecological economy it means sustaining future generations' access to the natural and socio-cultural environment as well as the pursuit of inter- and in-generational justice in access to goods (BORYS 2011, DOMAŃSKI 2005, 2007, POSKROBKO 2011, ROGALL 2010). Each discipline that deals with sustainable development has created a set of concepts which are operational interpretations of 'sustainability', which in turn has led to terminological confusion in the academic literature (MIKA 2014).

4. DICHOTOMY OF 'SUSTAINABLE' VALUES IN TOURISM

The multi- and interdisciplinary approach to sustainability in tourism has revealed a clear dichotomy in the formulation of its goals, depending on the point of view on development issues and values (BUTLER 2005). In environmental (ecological) and humanistic approaches it is assumed that the primary purpose of sustainability is to maintain the conditions at destinations, including its value for tourism values and the local socio-economic context of tourism. The goals of sustainable development are perceived in a different way compared to an economic perspective, here, durability and continuity of tourism development is emphasized in terms of the stability of local tourism business (tourist entities, tourist attractions), which in turn facilitates realisation of the social and economic goals for local communities. In practice this means the existence of two contradictory and mutually exclusive interpretations of sustainability in tourism (!) as from the standpoint of tourism businesses (tourism market), the requirement of maintaining a balance between environmental, social and economic systems, creates *de facto* a barrier to its development (SHARPLEY 2002a, b). Thus, the dichotomy of 'sustainable' values (goals) that results from different interpretations, suggests that at least one of two academic perspectives or research strategies has to be chosen: either one that focuses on evaluating the vulnerability and protection of the natural and socio-cultural environments from the impacts of tourism, or the one which concentrates on the optimal use of local tourism development in order to improve the level and quality of the lives of individuals and social groups.

5. THE QUESTION OF ESSENCE AND MEASURES OF SUSTAINABILITY IN TOURISM

The complexity of conditions and features of socio-economic development determines why one of the most serious methodological dilemmas is to identify the actions and processes which can be considered as 'sustainable', and to measure and evaluate them. If, in the dimension of the tourism-environment relationship, a difficulty like this can be solved by referring to the concept of limits of acceptable change (LAC), then in the case of social and economic relationships attempts to evaluate the degree of sustainability of certain forms of tourism activity face a barrier which can be difficult, if not impossible, to cross that in turn allows such attempts to fall easily into the traps of relativism and idealism.

In practice, detailed questions about what sustainability is and what it is not are asked predominantly when developing local plans and programmes for tourism development. It can be found that these are left unsettled when analysing so-called measures of sustainability included in various strategic documents, those measures are either vague and difficult, impossible to evaluate, or characterized by triviality as a result of an over-simplified structure (MANNING 1999, ONZ 2007, UNWTO 2004, PAWLUSIŃSKI, MIKA & FARACIK 2008, SCHIANET &, KAVANAGH 2008). The impossible-to-solve dilemma of the harmonious combination of differing goals in tourism development is the primary reason why the main emphasis of evaluation is moved towards the protection of space as a resource, the result is that the proposed measures of sustainability, by reference to concepts of limits to growth, create in fact a tool to control the development of tourism, the purpose of which is to demonstrate the degree to which tourism activities and investments disrupt the local natural, social and economic environments. Even when such a narrow approach is adopted, the problem of selecting an appropriate set of indicators with subsequent effective evaluation and interpretation of results arises.

6. OBJECTION TO REGULATORY LAW

Questions about the purpose and practical means of achieving sustainability relate directly to tourism demand, tourism facilities and transport systems (DICKINSON *et al.* 2013, GÖSSLING *et al.* 2012, HALL 2010). One of the primary principles of sustainability is to limit the consumption of goods and services to a level acceptable in terms of ecology (WHEELER 1993).

At the turn of the 1990s, a number of publications emphasized the need to change the model of tourist activity. At first, the concern to make it possible for future generations to have access to the environment and its values was expressed by promoting the idea of alternative development (e.g. eco-tourism). This in time has been transformed into proposals for implementing and disseminating regulations in the area of social and tourism business activities, either by means of voluntary acceptance or by applying institutional inspection procedures. Such proposals have been inspired by the increased social sensitivity to the issues of environmental protection observed in post-industrial societies.

The reality of the tourism market has shown that the changes in tourism demand which have been taking place for the last two decades, while heading towards individualism and conscious consumption, have not yet brought about an increase in social interest in alternative (ecological) ways. What is more important, empirical research shows that leisure time spent on tourist activities is the aspect of social life in which proposals for imposing any limits on the extent of the fulfilment of tourists' needs contradict the vested interest of individuals and groups (GÖSSLING *et al.* 2013, WEAVER 2006, 2009). There is a conflict of values, i.e. achieving ecological goals through the development of so-called sustainable forms of tourism decreases the value of goals realized by the majority of tourists. This highlights a clear discrepancy between the concept of harmonious sustainability and the very nature of tourism consumption (!). Social disapproval of proposals for regulations which, in accordance with the principles of sustainability, should set norms of behaviour and limits to tourism consumption, stems from the belief that travelling is not a privilege but a fundamental right of any individual.

The majority of consumer studies conducted in developed countries indicate that tourists are unwilling to see any structural change favouring sustainability in tourism (COHEN & HIGHAM 2011, HARES *et al.* 2010, MCKERCHER *et al.* 2010). The social acceptance of the concept of environmental protection and sustainable development, with the latter being only vaguely understood, is not supported by a willingness to personally sacrifice and waive the freedom to make decisions when on holiday (WEAVER 2009). Participation in tourism creates opportunities for individuals to detatch from various forms of social control and laws which are present in both professional and every day life. Reaching the state in which people would voluntarily limit the need to fulfill their tourism needs requires a dramatic behavioral change in a social dimension which is hardly possible in a culture of consumerism (BARR *et al.* 2010, COHEN *et al.* 2011, HIGHAM & COHEN 2011, GÖSSLING *et al.* 2009, MILLER *et al.* 2010). Additionally, promoting such attitudes and solutions is thought to be insufficiently justified and even unnecessary (GÖSSLING *et al.* 2013). The reason for this is that regulatory law is contrary to the social expectations of tourists. Since changes towards sustainability cannot be expected in those societies which entered a post-industrial phase in the 20th century, then legitimizing sustainability as an imperative of tourism behaviour seems even more unattainable where modernisation processes are still pending (e.g. in the countries of Central and Eastern Europe). The question of how the concept of sustainability is going to be received in societies which are governed by values which are different to the West remains unanswered, especially in Asian countries whose significance on the worldwide tourism market is continuously growing.

The discrepancy between values declared and the actual attitudes and behaviour of individuals should be taken for granted as an immanent and inevitable feature of tourism consumption. This is the most serious barrier in a holistic approach to the issue of sustainability as it undermines the validity and meaning of implementing the principles of harmonious sustainability in tourism. It seems that the subordination of tourism activity to the regulatory system could only be marginally socially approved only in certain situations, e.g. in legally protected areas.

Voluntary acceptance of regulatory law is also rejected by tourism businesses (BRAMWELL & LANE 2013, BUCKLEY 2012, *Tourism. Investing in…* 2011). They explain it by referring to the competitive tourism market which is subjected to regulatory law, and to the excessive growth of inspection procedures which negatively affect the competitiveness of tourism companies. In the tourism sector, short-term schemes are predominant, they are set on maximizing profits at times of greatest demand (annual, seasonal). The principles of market self-organization are thought to be the best mechanism for moulding the behaviour of businesses in a situation of insecure tourism demand. Another reason which determines why it is impossible to implement regulatory law in the tourism sector is the considerable involvement of multinational companies in the tourism business as their organisational system is corporate. The caution and distancing of tourism businesses from voluntary or legal imposition of regulations is based upon negative experiences related to the development of eco-tourism (ROSS & WALL 1999). This, in many cases, has become a 'trap' for tourism investors and local authorities in developing countries.

In spite of aversion promotional activity can be found in the media, implementation of so-called sustainable business practice by some tourism businesses and sectors. These predominantly take the form

of participation in partnership programmes or eco-certification initiatives. Such 'ecological' solutions essentially represent mere labelling of the activities that aim to create a positive image of the businesses involved, an attempt to create positive PR or attract a certain group of customers (FILIMONAU *et al.* 2011, GÖSSLING 2009, WEAVER 2009). In reality, they do not create new policies for businesses towards expected sustainability and they do not have any influence on the reduction of the negative effects on the natural or social environments.

7. SUSTAINABILITY VERSUS GROWTH FACTORS IN LOCAL DEVELOPMENT

Sustainability which strives to promote a synergy between tourism development and limitations imposed on tourism consumption seems incompatible with the policies of local authorities at tourism destinations whose activities aim at supporting economic growth and creating employment (DODDS 2007, HALL 2011). Integrating the principles of sustainable development into local policies and creating strategies for development based on these principles, inevitably leads to a conflict of goals. As a result, all activities aiming at finding new factors for local development, as well as supporting existing ones, inevitably lead to changes in social and natural environments. There is a justified concern of local decision-makers i.e. that a law is going to cause an excessive growth in inspections for both individuals and businesses. The inspections in turn will limit initiatives which can lead to continuity in the local economy and meet the needs of local communities. The reasons for such an attitude are the radical measures undertaken by some non-governmental organizations which narrow the interpretation of harmonious development solely to ecological dimensions (DODDS & BUTLER 2009).

One of the most important problems associated with the implementation of the principles of sustainable development in tourism concerns reaching a common agreement about local development (BEETON 2006, BERITELLI 2011, BUCKLEY 2012, DREDGE 2006, MILLER *et al.* 2010). Two issues can be pointed to: firstly, the idea of the harmonious combination of differing tourism development goals is incompatible with the varied goals of actors (stakeholders) at a local level. Locally there are social lobbying groups as well as individuals who, to a varied extent, are able to take advantage of the opportunities created by the achievement of certain goals in local policies. From the perspective of the actors in tourism development, the common goals should in theory lead to an agreement on key issues locally. Reality shows that self-interest and unconnected individual goals represent serious barriers to the design of optimal solutions which would generate benefits to all interested parties. These barriers in cooperation are of a market, social and institutional nature: the first is a result of the rules of competition, the second relates to the heterogeneity and disagreement between local development actors, and the latter a result of the lack of rapport in cooperation among businesses. Secondly, in many cases local communities have problems formulating their own priorities in reference to the strategic goals of local development. The principle of governance, which the concept of sustainable development makes an explicit reference to, creates circumstances in practice that promote confrontation between extreme attitudes and the views represented by groups or individuals with conflicting interests. The situation of internal conflict in a group of local development actors creates a situation in which local authorities cannot guarantee the results of proposed solutions and whether these results are in accordance with a common interest. The results will always be inconsistent with the goals of some local stakeholders.

8. SUSTAINABILITY VERSUS INSTABILITY IN TOURISM DEVELOPMENT

Unstable climatic processes, as well as the economic and political instability, are a key decisive factor in global socio-economic development. The first priority nowadays is the ability to sustain those local economic structures which play a key role in producing economic and social benefits. In such a situation the debate on harmonious development must account for such issues as competitiveness, efficiency and flexibility of business. The tourism sector is especially vulnerable to the influence of negative natural, economic and socio-political phenomena. The issues which relate to the safety of travel and a guarantee of satisfaction of tourism needs have a fundamental meaning in an area of tourism demand.

In times of climatic change, as experienced by the public, the practical implementation of the principles of sustainable development have become impossible in the eyes of a part of the academic community (WEAVER 2009). There is an opinion that the global tourism sector is neither prepared, nor fit to face the consequences of such changes (REDDY & WILKES 2013, SCOTT 2011, SCOTT, HALL & GÖSSLING 2012). Such phenomena as a rise in air temperatures during a tourism season, a rise in sea water temperatures, an increased threat from extreme weather events and insufficient snow cover have become the decisive factors responsible for the instability of development

of many tourism destinations in the world as well as in those regions which play the key part in the global tourism system (AMELUNG & VINER 2006, ELSASSER & BÜRKI 2002, JONES & PHILLIPS 2011, *Climate change and tourism. Responding…* 2008, KRZESIWO 2014, PATTERSON, BASTIANONI & SIMPSON 2006, PERRY 2006, SCOTT, SIM & SIMPSON 2012, STEIGER 2012, STEIGER & MAYER 2008).

The alteration (instability) of weather or, more broadly, climate, is difficult to predict and becomes an increasingly important factor determining tourism demand. Forecasting behaviour in mass tourism, especially for leisure, is the subject of more frequent research and analyses including some of the institutions which co-finance tourism investments (BECKEN 2007, BUZINDE 2010b, *Climate change and tourism, Where…* 2008, DICKINSON, ROBBINS & LUMSDON 2010, GOH 2012 , GÖSSLING *et al.* 2012, PETERS & DUBOIS 2010). The rise of investment risk in the tourism sector and the higher cost of accommodating the increasing instability may affect and modify business strategies, excluding the issues of structural sustainability connected with their functioning (BUZINDE *et al.* 2010a, BRAMWELL & LANE 2009, KLINT *et al.* 2011).

9. IS THE HARMONIOUS DEVELOPMENT OF TOURISM AT ALL POSSIBLE?

There are a number of signs showing that general tourism activities, both in reference to social interaction and economic processes, are an exceptional phenomenon which 'by its nature' are inconsistent with the idea of sustainable development. This inconsistency is not just a matter of disliking legal and institutional regulation. A detailed analysis of various forms of local tourism development in many parts of the world provides evidence for this. The tourism service sector in a situation of mass touism, i.e. a highly commercialised and resource-draining type of development, is characterized by its 'inherent' inability to form socially desired and anticipated relationships in the socio-economic field as well as in human vs. environment relationships. This phenomenon affects many factors that strongly depend on the local conditions in which the development of tourism takes place.

Aside from the social, economic and political limits already mentioned, and those which represent the outcome of the increasing instability of economic trends in the global tourism market, important problems that contribute to the inharmonious development of mass tourism are the high and rapidly increasing commercialization of tourism activities, the considerable involvement of multinational corporations in tourism, the conflict between 'internal' and the 'external' forces in local development and the inability of local social structures to join the chain of economic benefits derived, especially in developing countries. Almost any tourism destination possesses a separate set of obstacles and barriers which, to a different extent and with differing intensities, limit or prevent the implementation of the principles of harmonious (sustainable) development. Yet, it does not stop the search for opportunities to implement these principles in other types of tourism development, at smaller scales and in reference to certain categories of tourism. Tourism activities and investments are, after all, subject to regulatory law in conservation areas, under a so-called strict protection regime, in this way, achieving the principle of sustainability and renewability of resources in geographical space, and at the same time providing for its social function (MATEI 2011, PTASZYCKA-JACKOWSKA 1993, ZAWILIŃSKA 2010). Potentially favourable conditions for developing regulatory mechanisms exist in some historic cities. Additionally, previous experience shows that the so-called small-scale development projects that introduce innovative solutions in accordance with the principles of sustainability and which are created on the grounds of well-documented studies of local conditions, have the highest chances of success.

10. TOWARDS A NEW PARADIGM IN TOURISM SUSTAINABILITY

In view of the methodological shortcomings outlined and the practical limits to implementation of the principles of sustainable (harmonious) development in tourism, a justified question arises on the degree and scope to which the concept of sustainable tourism matches the challenges of today's changing world. There are many demonstrations that the theoretical concept, based on a holistic and normative approach as well as on attempts to combine the manifold goals of tourism development effectively with environmental, social and economic values, has mostly exhausted its power on the direction and the method of solving research problems in the study of tourism. Reducing the academic usefulness of this concept does not suggest its rejection. It is rather the effect of false and illusory assumptions made by promoters of sustainability in tourism that the idea of harmonious development can 'cover' all manifestations of tourism activity and simultaneously achieve success in all of them.

Academic rationality calls for verification of the symptoms of speculative thinking that can lead academic discourse into intellectual traps. The long

debate on sustainability in tourism lasting more than two decades has brought about a situation in which certain patterns of thinking, based on a belief in its correctness, has become a norm. It is only empirical research and the exchange of experience on implementing this concept practically that has provided arguments objecting to this. As a result, demand for a new paradigm within the concept of sustainable tourism has been created with no reference to the imperative of harmonious linking of environmental, social and economic systems with the development of tourism.

The variety and the multitude of forms (social, organizational, spatial) and the uniqueness of the local situations in which the processes of tourism development take place, create a favourable background to the formulation of innovative conceptualizations of the term 'sustainability' – being the foundation of a theory of sustainable development. The English word 'sustain', in the context of providing future generations with access to the resources and value of space, requires a new interpretation in tourism studies. The reconceptualisation of sustainability in tourism should be equally based on emphasizing the necessity to protect spatial resources as well as values, but what is deeply 'rooted' in tourism, i.e. standing for what is necessary to achieve the needs of tourists, as well as the result of achieving socio-economic success at tourism destinations, need to be considered. Adopting such an interpretation allows the development of tourism destinations to be perceived as a value in itself. The proposal for a new interpretation of sustainability is introduced for instance by the concept of sustaining 'life processes' in local tourism development (MIKA 2014), in which, alongside what accompanies the development of tourism, the author names the factors and mechanisms that determine this development. The meaning of sustainability is manifested in the long-term sustenance of tourism that determines the stability of local socio-economic structures, it is of the highest importance to mature tourism destinations which rely on a so-called 'lock-in' within the socio-economic development path.

The variety of tourism destinations prompts the core of the discussion around sustainability in tourism to be shifted to a local level and the specific conditions (local context) in which the development of tourism takes place. It is necessary to abandon the interpretation of sustainable development of tourism destinations perceived as their 'ideal' state (which is impossible to determine in practice), in favour of an evolutionary process of change based on rational economic premises which does not lead towards a predetermined objective. In turn, the new concept of sustainability should, to achieve social goals, take into account to a greater extent the actual attitudes and behaviour of individuals and social groups that participate in tourism. In both it is essential to adopt a bottom-up and evolutionary approach to the analysis of tourism as well as limiting the evaluation of features and directions based solely on ideological premises which is especially important when an academic perspective is applied.

FOOTNOTES

[1] The complexity of this issue is shown by merely using the term 'appropriately' which can be interpreted in many ways, depending on the adopted evaluation standards.

REFERENCES

AMELUNG B., VINER D., 2006, Mediterranean tourism. Exploring the future with the tourism climatic index, *Journal of Sustainable Tourism*, 14(4), pp. 349-366.

BARR S., SHAW G., COLES T., PRILLWITZ J., 2010, A holiday is a holiday. Practicing sustainability, home and away, *Journal of Transport Geography*, 18, pp. 474-481.

BECKEN S., 2007, Tourists' perception of international air travel's impact on the global climate and potential climate change policies, *Journal of Transport Geography*, 15(4), pp. 351-368.

BEETON S., 2006, *Community development through tourism*, Landlinks Press, Collingwood.

BERITELLI P., 2011, Cooperation among prominent actors in a tourist destination, *Annals of Tourism Research*, 38(2), pp. 607-629.

BORYS T., 2011, Interdyscyplinarność ekonomii zrównoważonego rozwoju, [in:] B. Poskrobko (ed.), *Teoretyczne aspekty ekonomii zrównoważonego rozwoju,* Wyższa Szkoła Ekonomiczna w Białymstoku, Białystok, pp. 134-151.

BRAMWELL B., LANE B., 2009, Economic cycles, times of change and sustainable tourism, *Journal of Sustainable Tourism*, 17(1), pp. 1-4.

BRAMWELL B., LANE B., 2013, Getting from here to there. Systems change, behavioural change and sustainable tourism, *Journal of Sustainable Tourism*, 21(1), pp. 1-4.

BUCKLEY R., 2012, Sustainable tourism. research and reality, *Annals of Tourism Research*, 39(2), pp. 528-546.

BUTLER R.W., 1999, Sustainable tourism. A state-of-the-art review, *Tourism Geographies*, 1(1), pp. 7-25.

BUTLER R.W., 2005, Problemy miejsc recepcji ze zrównoważonym rozwojem, [in:] R. Winiarski, W. Alejziak (eds), *Turystyka w badaniach naukowych*, Akademia Wychowania Fizycznego w Krakowie, Wyższa Szkoła Informatyki i Zarządzania w Rzeszowie, Kraków–Rzeszów, pp. 35-48.

BUZINDE C.N., MANUEL-NAVARRETE D., KERSTETTER D., REDCLIFT M., 2010a, Representations and adaptation to climate change, *Annals of Tourism Research*, 37(3), pp. 581-603.

BUZINDE C.N., MANUEL-NAVARRETE D, YOO E.E., MORAIS D., 2010b, Tourists' perceptions in a climate of change. eroding destinations, *Annals of Tourism Research*, 37(2), pp. 333-354.

CERON J., DUBOIS G., 2003, Tourism and sustainable development indicators. the gap between theoretical demands and practical achievements, *Current Issues in Tourism*, 6(1), pp. 54-75.

CHOJNICKI Z., 2008, Rozwój społeczno-ekonomiczny i jego aspekty aksjologiczne, [in:] J.J. Parysek, T. Stryjakiewicz

(eds), *Region społeczno-ekonomiczny i rozwój regionalny*, Bogucki Wyd. Naukowe, Poznań, pp. 21-36.

Climate change and tourism. Responding to global challenges, 2008, United Nations World Tourism Organization, United Nations Environment Programme, World Meterological Organization (UNWTO-UNEP-WMO), UNWTO, Madryt.

Climate change and tourism, Where will the journey lead?, 2008, Deutsche Bank Research, Current Issues, Frankfurt am Main.

COHEN S.A., HIGHAM J.E.S., 2011, Eyes wide shut? UK consumer preceptions on aviation climate impacts and travel decisions to New Zealand, *Current Issues in Tourism*, 14(4), pp. 323-335.

COHEN S.A., HIGHAM J.E.S., CAVALIERE C.T., 2011, Binge flying. Behavioral addiction and climate change, *Annals of Tourism Research*, 38(3), pp. 1070-1089.

DICKINSON J.E., ROBBINS D., FILIMONAU V., HARES A., MIKA M., 2013, Awareness of tourism impacts on climate change and the implications for travel practice. A Polish perspective, *Journal of Travel Research*, 52(4), pp. 506-519,

DICKINSON J.E., ROBBINS D., LUMSDON L., 2010, Holiday travel discourses and climate change, J*ournal of Transport Geography*, 18(3), pp. 482-489.

DODDS R., 2007, Sustainable tourism & policy implementation. Lessons from the case of Calviá, Spain, *Current Issues in Tourism*, 10(1), pp. 296-322.

DODDS R., BUTLER R.W., 2009, Inaction more than action barriers to the implementation of sustainable tourism policies, [in:] S. Gössling, M. Hall, D.B. Weaver (eds.), *Sustainable tourism futures perspectives on systems, restructuring and innovations,* Routledge, Londyn–Nowy Jork, pp. 43-57.

DOMAŃSKI B., 2004, Krytyka pojęcia rozwoju a studia regionalne, *Studia Regionalne i Lokalne*, 2(16), pp. 7-23.

DOMAŃSKI R., 2005, Samowzmacnianie rozwoju miast i regionów w gospodarce intensyfikującej wykorzystanie wiedzy. Wnioski z nowej teorii wzrostu endogenicznego, *Przegląd Geograficzny*, 77(2), pp. 131-138.

DOMAŃSKI R., 2007, Podtrzymywalny (trwały) rozwój społeczno-gospodarczy w środowisku ziemskim jako problem integrujący nauki geograficzne i zespół nauk o Ziemi, [in:] B. Ney (ed.), *Aktualne i perspektywiczne problemy nauk o Ziemi i nauk górniczych*, Polska Akademia Nauk, Wydział VII, Warszawa, pp. 172-209.

DREDGE D., 2006, Networks, conflict and collaborative communities, *Journal of Sustainable Tourism*, 14(6), pp. 562-581.

DURYDIWKA M., KOWALCZYK A., KULCZYK S., 2010, Definicja i zakres pojęcia „turystyka zrównoważona", [in:] A. Kowalczyk (ed.), *Turystyka zrównoważona*, Wyd. Naukowe PWN, Warszawa, pp. 21-43.

ELSASSER H., BÜRKI R., 2002, Climate change as a threat to tourism in the Alps, *Climate Research*, 20(3), pp. 253-257.

FILIMONAU V., DICKINSON J.E., ROBBINS D., REDDY M.V., 2011, A critical review of methods for tourism climate change appraisal. Life cycle assessment as a new approach, *Journal of Sustainable Tourism*, 19(3), pp. 301-324.

GOH C., 2012, *E*xploring impact of climate on tourism demand, *Annals of Tourism Research*, 39(4), pp. 1859-1883.

GÖSSLING S., 2009, Carbon neutral destinations. A conceptual analysis, *Journal of Sustainable Tourism*, 17(1), pp. 17-37.

GÖSSLING S., HAGLUNDB L., KALLGRENB H., REVAHLB M., HULTMANB J., 2009, Swedish air travellers and voluntary carbon offsets. Towards the co-creation of environmental value?, *Current Issues in Tourism*, 12(1), pp. 1-19.

GÖSSLING S., HALL C.M., WEAVER D.B., 2009, *Sustainable tourism futures. Perspectives on systems, restructuring and innovations*, Routledge, Nowy Jork.

GÖSSLING S., SCOTT D., HALL C.M., 2013, Challenges of tourism in a low-carbon economy, *WIREs Clim Change*, 4, pp. 525-538.

GÖSSLING S., SCOTT D., HALL C.M., CERON J.P., DUBOIS G., 2012, Consumer behaviour and demand response of tourists to climate change, *Annals of Tourism Research*, 39(1), pp. 36-58.

HALL C.M., 2010, Changing paradigms and global change. From sustainable to steady-state tourism, *Tourism Recreation Research*, 35(2), pp. 131-144.

HALL C.M., 2011, Policy learning and policy failure in sustainable tourism governance. from first and second to third change order?, *Journal of Sustainable Tourism*, 19(4-5), pp. 649-671.

HARES A., DICKINSON J., WILKES K., 2010, Climate change and the air travel decisions of UK tourists, *Journal of Transport Geography*, 18(3), pp. 466-473.

HIGHAM J., COHEN S.A., 2011, Canary in the coalmine. Norwegian attitudes towards climate change and extreme long-haul air travel to Aotearoa/New Zealand, *Tourism Management*, 32(1), pp. 98-105.

HUNTER C., 1997, Sustainable tourism as an adaptive paradigm, *Annals of Tourism Research*, 24(4), pp. 850-867.

HUNTER C., 2002, Aspects of the sustainable tourism debate from a natural resources perspective, [in:] R. Harris, T. Griffin, P. Williams (eds), *Sustainable tourism. A global perspective,* Butterworth-Heinemann, Burlington, pp. 3-23.

HUNTER C., GREEN H., 1995, *Tourism and the environment a sustainable relationship?,* Routledge, Londyn.

IWICKI S., 1998, *Turystyka w zrównoważonym rozwoju obszarów pojeziernych*, Akademia Techniczno-Rolnicza, Bydgoszcz.

JĘDRZEJCZYK I., 1995, *Ekologiczne funkcje i uwarunkowania turystyki*, Wyd. Śląsk, Katowice.

JĘDRZEJCZYK I., 2000, *Nowoczesny biznes turystyczny. Ekostrategie w zarządzaniu firmą*, Wyd. Naukowe PWN, Warszawa.

JONES A., PHILLIPS M., 2011, *Disappearing destinations. Climate change and future challenges for coastal tourism*, CABI Publ., Wallingford.

KIDOŃ E., 2002, *Zasady kształtowania uzdrowisk Beskidu Sądeckiego w świetle idei zrównoważonego rozwoju,* doktors thesis, Instytut Geografii i Gospodarki Przestrzennej, Uniwersytet Jagielloński, Kraków, (typescript).

KLINT L., WONG E., JIANG M., DELACY T., HARRISON D., DOMINEY-HOWES D., 2011, Climate change adaptation in the Pacific Island tourism sector. Analysing the policy environment in Vanuatu, *Current Issues in Tourism*, 15(3), pp. 247-274.

KOWALCZYK A. (ed.), 2010, *Turystyka zrównoważona*, Wyd. Naukowe PWN, Warszawa.

KRZESIWO K., 2014, *Rozwój i funkcjonowanie stacji narciarskich w Karpatach Polskich*, Instytut Geografii i Gospodarki Przestrzennej, Uniwersytet Jagielloński, Kraków.

LANE B., 2009, Thirty years of sustainable tourism drivers, progress, problems and the future, [in:] S. Gössling, C.M. Hall, D.B. Weaver (eds.), *Sustainable tourism futures perspectives on systems, restructuring and innovations,* Routledge, Londyn–Nowy Jork, pp. 19-32.

LIU Z, 2003, Sustainable tourism development. a critique, *Journal of Sustainable Tourism*, 11(6), pp. 459-475.

MANNING T., 1999, Indicators of tourism sustainability, *Tourism Management*, 20(2), pp. 179-182.

MATEI E., 2011, The ecotourism's development in the Romanian Carpathians' protected areas. Facts, figures and needs, *Human Geographies – Journal of Studies and Research in Human Geography*, 5(2), pp. 31-39.

MCKERCHER B., PRIDEAUX B., CHEUNGA C., LAW R., 2010, Achieving voluntary reductions in the carbon footprint of tourism and climate change, *Journal of Sustainable Tourism*, 18(3), pp. 297-318.

MIKA M., 2014, *Założenia i determinanty podtrzymywalności lokalnego rozwoju turystyki*, Instytut Geografii i Gospodarki Przestrzennej, Uniwersytet Jagielloński, Kraków.

MILLER G., RATHOUSE K., SCARLES C., HOLMES K., TRIBE J., 2010, Public understanding of sustainable tourism, *Annals of Tourism Research*, 37(3), pp. 627-645.

NIEZGODA A., 2006, *Obszar recepcji turystycznej w warunkach rozwoju zrównoważonego*, „Prace Habilitacyjne" 24, Wyd. Akademii Ekonomicznej w Poznaniu, Poznań.

ONZ, 2007, *Indicators of Sustainable Development. Guidelines and Methodologies*, Nowy Jork.

PANFILUK E., 2011, Problemy zrównoważonego rozwoju w turystyce, *Ekonomia i Zarządzanie*, 3(2), pp. 60-72.

PATTERSON T., BASTIANONI S., SIMPSON M., 2006, Tourism and climate change. Two-way street, or vicious/virtuous circle?, *Journal of Sustainable Tourism*, 14(4), pp. 339-348.

PAWLUSIŃSKI R., MIKA M., FARACIK R., 2008, *Plan rozwoju i zarządzania turystyką w regionie Babiej Góry*, Instytut Geografii i Gospodarki Przestrzennej, Uniwersytet Jagielloński, Kraków.

PEETERS P., DUBOIS G., 2010, Tourism travel under climate change mitigation constraints, *Journal of Transport Geography*, 18(3), pp. 447-457.

PEETERS P., GÖSSLING S., LANE B., 2009, Moving towards low-carbon tourism. Opportunities for destinations and tour operators, [in:] S. Gössling, C.M. Hall, D. Weaver (eds.), *Sustainable tourism futures*, Routledge, Londyn, pp. 240-257.

PERRY A., 2006, Will predicted climate change compromise the sustainability of Mediterranean tourism?, *Journal of Sustainable Tourism*, 14(4), pp. 367-375.

POSKROBKO B. (ed.), 2011, *Teoretyczne aspekty ekonomii zrównoważonego rozwoju*, Wyższa Szkoła Ekonomiczna w Białymstoku, Białystok.

PTASZYCKA-JACKOWSKA D., 1993, *Kształtowanie stref ochronnych przyrodniczych obszarów ochronnych*, Wyd. Instytutu Kształtowania Środowiska, Warszawa, Kraków.

REDDY V., WILKES K., 2013, *Tourism, climate change and sustainability*, Routledge, Abingdon.

ROGALL H., 2010, *Ekonomia zrównoważonego rozwoju. Teoria i praktyka*, Wyd. Zysk i S-ka, Poznań.

ROSS S., WALL G., 1999, Ecotourism. towards congruence between theory and practice, *Tourism Management*, 20(6), pp. 123-132.

SAARINEN J., 2006, Traditions of sustainability in tourism studies, *Annals of Tourism Research*, 33(4), pp. 1121-1140.

SCHIANETZ K., KAVANAGH L., 2008, Sustainability indicators for tourism destinations. A complex adaptive systems approach using systemic indicator systems, *Journal of Sustainable Tourism*, 16(6), pp. 601-628.

SCOTT D., 2011, Why sustainable tourism must address climate change, *Journal of Sustainable Tourism*, 19(1), pp. 17-34.

SCOTT D., HALL C.M., GÖSSLING S., 2012, *Tourism and climate change. Impacts, mitigation and adaptation*, Routledge, Londyn.

SCOTT D., SIM R., SIMPSON M., 2012, Sea level rise impacts on coastal resorts in the Caribbean, *Journal of Sustainable Tourism*, 20(6), pp. 883-898.

SHARPLEY R., 2000, Tourism and sustainable development. exploring the theoretical divide, *Journal of Sustainable Tourism*, 8(1), pp. 1-19.

SHARPLEY R., 2002a, Sustainability. A barrier to tourist development?, [in:] R. Sharpley, D.J. Telfer (ed.), *Tourism and development. Concepts and issues*. Channel View Publ., Clevedon, pp. 319-337.

SHARPLEY R., 2002b, The consumption of tourism, [in:] R. Sharpley, D.J. Telfer (eds), *Tourism and development. Concepts and issues*. Channel View Publ., Clevedon, pp 300-318.

STABLER M.J., 1997, *Tourism and sustainability. principles to practice*, CAB Intern., Wallingford.

STEIGER R., 2012, Scenarios for skiing tourism in Austria. integrating demographics with an analysis of climate change, *Journal of Sustainable Tourism*, 20(6), pp. 867-882.

STEIGER R., MAYER M., 2008, Snowmaking and climate change. future options for snow production in Tyrolean ski resorts, *Mountain Research and Development*, 28(3/4), pp. 292– 298.

Tourism. Investing in the green economy, 2011, [in:] United Nations World Tourism Organization (UNWTO) and United Nations Environment Program (UNEP), *Towards a Green Economy*, UNEP, Genewa, pp. 409-447.

UNEP, 2011, *Towards a green economy. Pathways to sustainable development and poverty eradication – a synthesis for policy makers*.

UNWTO, 2004, *Indicators of sustainable development for tourism destinations. A guidebook*, World Tourism Organization, Madryt.

WEAVER D.B., 2006, *Sustainable tourism. Theory and practice*, Elsevier Butterworth-Heinemann, Burlington.

WEAVER D.B., 2009, Reflections on sustainable tourism and paradigm change, [in:] S. Gössling, C.M. Hall, D.B. Weaver (eds.), *Sustainable tourism futures perspectives on systems, restructuring and innovations*, Routledge, Londyn–Nowy Jork, pp. 33-40.

WHEELER B., 1993, Sustaining the ego, *Journal of Sustainable Tourism*, 1(2), pp. 121-129.

ZAWILIŃSKA B., 2010, *Możliwości rozwoju turystyki w parkach krajobrazowych Karpat Polskich w świetle idei zrównoważonego rozwoju*, „Monografie i Prace Doktorskie", 10, Uniwersytet Ekonomiczny, Kraków.

Alina Zajadacz
Uniwersytet im. A. Mickiewicza w Poznaniu
Wydział Nauk Geograficznych i Geologicznych
Katedra Turystyki i Rekreacji
e-mail: alina@amu.edu.pl

THE CONTRIBUTION OF THE GEOGRAPHY OF DISABILITY TO THE DEVELOPMENT OF 'ACCESSIBLE TOURISM'

Abstract: The article presents an outline of the evolution of the geography of disability (since the 1930s) taking into account significant issues in the creation of theoretical foundations as well as practical action in 'accessible tourism'. It may be considered a review. Based on an analysis of literature, the first section presents a definition of 'accessible tourism' and the development of the geography of disability, the result of which is the geographical model of disability. The second section is a synthetic presentation of the effect of geographical research on the development of theoretical accessible tourism concepts and their implications in practice. The final conclusions highlight the need to identify the level of detail in universal design principles applied to buildings, spaces, services, which are to fulfil the criteria of accessibility for people with various types of disability.

Key words: geography of disability, accessible tourism, geographical model of disability.

1. INTRODUCTION

Geographers have been concerned with research in the field of disability since the 1930s and it has developed systematically in connection with social change (the increase in the number of people with a disability, the ageing population) and legislative changes (aimed at providing equal opportunities). It is also connected with the 'sanctioning of social issues as a distinct theme in geography' (in Poland, in 1983, LISOWSKI 2008: 201). The significant achievements of geographers in disability issues have led to the development of two distinct currents: the geography of disability (basic studies) and geography for the disabled (applied research). Much of this work, especially that carried out since the 1950s, due to the complexity of how disability is perceived in the context of the interaction between a person with a disability and the geographical environment (physical, social), has contributed to the growth of the currently widely propagated concept of 'accessible tourism'.

The article aims to present an outline of the evolution of research in the geography of disability taking issues which are vital in the creation of theoretical foundations as well as practical activities in the field of 'accessible tourism' into account. It may be considered a review. The first section presents the assumptions of 'accessible tourism' and the development of the geography of disability based on an analysis of literature. The second section is a synthetic presentation of the contribution of geographical research results to the development of the theoretical foundations of 'accessible tourism' as a concept and their implications in practice.

2. 'ACCESSIBLE TOURISM'

As awareness of the diverse needs of tourists, including those connected to disability rose, it led to the development of action promoted under numerous slogans applied interchangeably such as 'tourism for all' (NeumannConsult 2014), 'tourism without barriers' (NeumannConsult *et al*. 2014) and 'accessible tourism' (BUHALIS & DARCY 2011, GfK and others 2014). This action is undertaken on a national administrative level, organisations, social initiatives, and in the private tourism services sector. The term 'accessible tourism' is gaining in popularity and this is also thanks to numerous United Nations World Tourism Organization (UNWTO) publications,

including *The Manual on Accessible Tourism for All…* (2015). Accessible tourism is defined as: 'a form of tourism involving collaborative processes between stakeholders that enables people with access requirements, including mobility, vision, hearing and cognitive dimensions of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services and environments. This definition adopts a whole of life approach where people throughout their lifespan benefit from accessible tourism provision. These include people with permanent and temporary disabilities, seniors, obese, families with young children and those working in safer and more socially sustainable designed environments' (adapted from DARCY & DICKSON, 2009: 34, DARCY & BUHALIS (ed.), 2011: 10-11, BUHALIS, DARCY & AMBROSE (ed.), 2012: 3, *Recommendations on Accessible Tourism* 2013: 4). In order for the concept of 'accessible tourism' to be realised, the cooperation and involvement of numerous subjects in the following fields is required:

1. **raising the awareness of tourism industry specialists** at all levels of tourism management and organisation through education, workshop and training programmes specifically designed to eliminate barriers hindering the development of 'accessible tourism', and to convince private enterprises that there are advantages to be gained by investing in 'accessible tourism', which become visible as quality improves and the competitiveness of a given enterprise increases;

2. **guaranteeing a general right to participate in tourism,** despite global economic uncertainty, through international cooperation;

3. **adhering to the principles of universal design** in the creation of new tourism infrastructure, products and services and the modernisation of those already in place;

4. **the development and application of intelligent technologies** in order to deliver **objective information** on all services (regardless of the degree of accessibility), enabling individual evaluation of accessibility by travellers, according to personal needs;

5**. tourism seen from a systemic perspective, providing universal accessibility in regard to all the elements in the tourism values chain** including the natural environment, transportation, tourist information and paratourism;

6. **the promotion and dissemination of best practices** contributing to universal accessibility in travel and tourism;

7. **strengthening cooperation with all interested parties in the field of universal accessibility in tourism on a international and regional scale,** engage representatives of the tourism sector, non-governmental bodies and people with disabilities in public-private partnerships (PPP). Cooperation which involves people with disabilities should lead to the development of new, global policies on the elaboration of principles and their implementation contributing to the growth of accessible tourism.

The postulates presented are the basic recommendations of the *San Marino Declaration on Accessible Tourism* (2014). They are the result of much social debate, analyses of practices applied in the organisation of tourism for people with a disability, as well as scientific research carried out by representatives of many disciplines (including the geographical sciences), taking the experiences of people with disabilities regarding tourism into consideration. It should be noted that the concept of 'accessible tourism', which emphasises the need for universal design, takes into account the factors determining the tourism activity of many groups (not only people with a disability, but also the elderly, children and young people, families with children and others) who encounter restrictions of a structural nature (physical) or functional (connected to the organisation of tourism services) when travelling.

The article focuses on the accessibility of tourism for a selected group – people with a disability (PwD), assuming that disability in a general sense is related to a physical and/or mental dysfunction. The definition of disability has evolved through the development of numerous disability models such as the medical model (PARSONS 1951), the social model (OLIVER 1996, DARCY & PEGG 2011) and the currently recommended bio-psychosocial model (*International Classification of Functioning, Disability and Health* (ICF) 2002, *World Report on Disability* 2011). This model is founded on the assumption that disability is a complex phenomenon, caused by a person's somatic problems (bodily) as well as a range of social conditions, and is the result of interaction between that individual's characteristics and the features of the surrounding environment in which he/she lives. Some of its aspects are connected almost entirely with 'internal' features i.e. individual to a given person, whereas others may be almost entirely external in nature (environmental). So it should therefore be accepted that if disability issues are to be eradicated, medical and social action is necessary (ICF 2002: 9). The bio-psychosocial model (BM) indicates several levels of disability: individual, institutional, social, connected to the characteristics of a given person, restrictions on activity or participation in the life of society, determined both by social and personal factors. The bio-psychosocial model is a synthesis of the assumptions of the social and medical models, thereby reducing errors arising from a one-sided approach to disability from a medical or social perspective (ICF 2002: 9).

Similar comprehensive assumptions formed the foundations of the geographical model of disability (GAINES 2004, ZAJADACZ & ŚNIADEK 2014) which takes into account the medical and social determinants of disability in the context of spatial relations: person – geographical environment (physical, social). This model developed gradually, on the basis of the results of geographical research into the various aspects of disability.

3. GEOGRAPHY OF DISABILITY

Geographers have been concerned with issues of disability since the 1930s (FARIS & DUNHAM 1939). In the following decades, research was undertaken mainly into disability: sensory, intellectual, motor, physical barriers (including architectural), the planning of public spaces, accessibility of transport, social relations (exclusion, marginalisation, equal opportunities), as

Table 1. Geography of disability – selected papers

	Author, year of publication, title of paper	Published by
Sensory disability	H.F. GILMAN (1987) Territorial concepts among Tampa's deaf community.	*Florida Geographer*
	T. SKELTON, G. VALENTINE (2003) It feels like being deaf is normal an explora-tion into the complexities of defining D/deafness and young D/deaf peoples' identities.	*Canadian Geographer*
	S.K. ANDREWS (1988) Applications of a cartographic communication model to tactual map design.	*The American Cartographer*
	R. BUTLER (1994) Geography and vision-Impaired and blind populations.	*Transactions of The Institute of British Geographers.*
	R.G. GOLLEDGE (1993) Geography and the disabled, a survey with special reference to vision impaired and blind populations.	*Transactions of the Institute of British Geographers*
	R.D. JACOBSON (1992) Spatial cognition through Tactile Mapping.	*Swansea Geographer*
	R.D. JACOBSON (1994a) GIS and the visually disabled, the spatial contribution to mobility.	*Mapping Awareness*
	R.D. JACOBSON (1994b) Navigation for the visually impaired going beyond tactile cartography.	*Swansea Geographer*
	R. KITCHIN, M. BLADES, R.G. GOLLEDGE (1997) Understanding spatial concepts at the geographic scale without the use of vision.	*Progress in Human Geography*
	R. KITCHIN, R.D. JACOBSON, R.G. GOLLEDGE, M. BLADES (1998) Belfast without sight, Exploring geographies of blindness.	*Irish Geography*
	J.W. WIEDEL (1966) Tactual maps for the visually handicapped.	*Professional Geographer*
Mental disability	S.M. BAIN (1971) The geographical distribution of psychiatric disorders in the North East Region of Scotland	*Geographia Medica: International Journal of Medical Geography*
	K.G. DEAN, H.D. JAMES (1981) Social factors and admission to psychiatric hospital schizophrenia in plymouth.	*Transactions of the Institute of British Geographers*
	M. DEAR (1977a) Locational factors in the demand for mental health care.	*Economic Geography*
	M. DEAR (1977b) Psychiatric patients and the inner city.	*Annals of the Association of American Geographers*
	G. GUDGIN (1975) The distribution of schizophrenics in Nottingham, A comment.	*Transactions of The Institute of British Geographers.*
	H. PARR, CH. PHILO, N. BURNS (2004) Social geographies of rural mental health, experiencing inclusions and exclusions.	*Transactions of the Institute of British Geographers*
Accessibility to transport	R. GANT (1992) Transport for the disabled.	*Geography*
	J.R. MARSTON, R.G. GOLLEDGE, C.M. COSTANZO (1997) Investigating travel behavior of nondriving blind and vision impaired people, The role of public transit.	*The Professional Geographer*
	S.D. NUTLEY (1980) Accessibility, mobility and transport-related welfare, The case of rural Wales.	*Geoforum*
	C. FRY (1988) Maps for the physically disabled.	*The Cartographic Journal*
barriers, accessibility of build-ings, public	R. BUTLER, S. BOWLBY (1997) Bodies and spaces, an exploration of disabled people's experiences of public space.	*Environment and Planning D: Society and Space*
	C. MCEWAN, R. BUTLER (2007) Disability and development, different models, different places.	*Geography Compass*
	CHURCH, J.R. MARSTON (2003) Measuring accessibility for people with a disability.	*Geographical Analysis*
	B. GLEESON (1997) Community care and disability, the limits to justice.	*Progress in Human Geography*
	B. GLEESON (2001) Disability and the open city.	*Urban Studies*

Source: A. ZAJADACZ (2012a, 2012b).

well as the participation of PwD in studies relating to disability, and the interpretation and implementation of research results (table 1). Many papers have presented a review of the work of geographers so far in this field, for example, *Geographies of disability* (GLEESON 1999), *Mind and Body Spaces Geographies of Illness, Impairment and Disability* (Butler & Parr 1999), and in other publications (CHOUINARD 1997, DORN 2001, KITCHIN 2000, PARK *et al.* 1998, PFEIFFER 2001, HANSEN & PHILO 2007, AITCHISON 2009, TAYLOR & JÓZEFOWICZ 2012, ZAJADACZ 2012a, 2012b).

A review of the results of geographical research into disability indicates they developed systemically, although up until the 1990s this was a niche sphere (IMRIE & EDWARDS 2007). Research was mostly focused on physical barriers arising within diverse types and different scales of spaces, and the results were supposed to lead to the reduction or removal of such barriers. However, these pioneering studies systemically contributed to changes in how disability is viewed not only from the perspective of the individual conditions (dysfunction) of a given person but also in the wider context of environmental factors, restricting full participation in the life of society.

The visible rise in geographers' interest in studies into disability has been termed 'the second wave' (AITCHISON 2009) beginning in the 1990s when critical works appeared, such as that by B. GLEESON (1996), in which he highlighted that disability is a key social issue (concerning approx. 15% of the global population) and cannot be ignored in geographical research. R. GOLLEDGE (1993) stated that researchers into human geography should note the fact that disability is clearly connected with socio-spatial relations (GOLLEDGE 1993). In discussions regarding 'the subject of the practical functions of geography such important issues as living conditions, including health and human existence, within the environment cannot be overlooked' (PARYSEK 1990, 2002: 7). The geographical perspective of research in the 1990s initiated changes in discourse on the definition of disability (from the medical, social point of view) towards taking the entire complex of socio-spatial determinants into account. The results contributed to action undertaken towards creating conditions in the geographical environment enabling PwD to function independently. Emphasis was placed on the need for 'equal opportunities' for PwD, who are often in a less privileged social position. Disability can lead to multiple layers of social problems developing: it can hinder access to education, work, transport, which in turn give rise to social marginalisation and poverty.

Geographers' interest in issues of marginalisation and social exclusion led to the development of studies concerning the principles shaping the accessible environment (BUTLER & BOWLBY 1997, KITCHEN 2000). Both physical and social barriers, and institutional and political factors which restrict access to particular spaces were considered (IMRIE & HALL 2001). The significance of geographical research into social exclusion issues was highlighted by, amongst others, CHOUINARD (1994) who argued that the investigation of such issues 'signifies the position of academics who do not follow the latest 'fashion' only because it 'sells' well and who take the notion that knowledge means power seriously' (CHOUINARD 1994: 5).

Of significance to the paradigms accepted in geographical research were legislative changes regarding segregation and social discrimination, including: the *Union of Physically Impaired People Against Segregation* (UPIAS, 1976, Great Britain), *Americans with Disabilities Act* (ADA, 1990, USA) and the *Disability Discrimination Act* (DDA, 1995, amended in 2005, Great Britain). In accordance with the UPIAS (1976), the medical and rehabilitative concept of disability was rejected and emphasis was placed on understanding disability as a social and political issue. This change in attitudes opened up new directions in the search to understand problems of disability in society (IMRIE & EDWARDS 2007). In the UPIAS *disability* cannot be reduced to impairment – a medical state, but is treated as a complex of social and political attitudes and relations which do not value those with disabilities. Both in UPIAS declarations and political prognosis, as in later studies into social policy and in literature on disability and society, there has so far been a lack of a geographical perspective, an understanding that social identity and social processes are dependent on spatial – geographical points of reference.

Studies into the spatial relations of a person with a disability and the geographical environment also considered how people with disabilities were involved in the shaping of this environment. R. GOLLEDGE (1993) noted that PwD occupy 'transformed' and 'distorted' space, which was met with general criticism (TAYLOR & JÓZEFOWICZ 2012). Allegations mainly concerned the diversification of space and the creation of separate 'disability worlds' which can lead to social segregation.

Nevertheless, such analyses of actions undertaken by PwD regarding the organisation of the surrounding environment which reflects real needs, should be recognised as indications from 'lead users' in the process of universal design. Research results (GOLLEDGE 1993) indicated that PwD are actively involved in reshaping the landscape within the environment of their own everyday lives, creating a world of their own experiences. The motivating force is dysfunction, initial restrictions connected to disability, which having 'collided' with the urban landscape lead to changes aimed at the removal of any barriers encountered. Numerous works have indicated the

importance of the opinions and actions of people with disabilities as experts in developing optimal solutions (ZAJADACZ 2012, 2014). SKELTON & VALENTINE (2003) pointed out issues in the interpretation of research results related to ignoring the true opinions of PwD in relation to deaf communities who use sign language. The difficulties in carrying out research in this group, connected to the language barrier and the necessity of using a sign-language interpreter in order to communicate, can potentially lead to the exclusion of the true opinions of deaf people. Interpretation of content in either direction (for hearing people or deaf people) can cause distortions in meaning due to the interpreter's own understanding.

Geographical research has taken various spatial scales into consideration, including accessibility for PwD in urban spaces (JÓZEFOWICZ 2006, 2010), opportunities for PwD living in cities to do sports and active recreation (JÓZEFOWICZ 2007), and on a domestic microscale. This has shown how a home, usually a source of comfort guaranteeing privacy, can also be a trap for PwD or a zone of 'threatened privacy' due to the interference of third parties (carers, assistants) who may underestimate private space. Furthermore, it has also investigated issues connected with the ageing population (LIN & ZIMMEr 2002) and ethics in disability studies (KITCHIN, 1999, KITCHIN & WILTON 2000). The results of geographical research are undoubtedly a challenge to preconceived judgements on what disability is and how it should be defined. M. HAWKESWORTH (2001) indicates the fluidity of a PwD's identity in different places, environments, the potential for stigma or rituals and practices which accompany efforts to 'blend in with' the surroundings to arise.

Numerous geographical papers have dealt with issues directly concerning tourism of PwD (AITCHISON 2009). For example, studies which presented the current state of research into the tourism of PwD in Poland (WYRZYKOWSKI & MARAK 2011). Problems of the accessibility of destinations and tourism sites have often been discussed (KOŁODZIEJCZAK & ZAJADACZ 2008) as have the motives of PwD who travel and the destinations they chose (FURMANEK & URBAŃSKA 2011). Cyclical studies into how deaf people spend their free time, their tourism and leisure practices have been undertaken (ZAJADACZ 2012a, 2012b, 2014). Complex studies dealing with tourism of PwD include the one edited by STASIAK & ŚLEDZIŃSKA (2008).

R. GOLLEDGE (1993: 81), following a review of geographical papers, proposed applying the term *geography of the disabled* to theoretical studies and *geography for the disabled* to research of an applied nature. Geography of disability, the subject of which are PwDs' experiences of spatial relations: person – geographical environment (natural and social) is currently recognised as a sub-discipline of geography (JACOBSON 2013). It covers a wide range of issues through which it is connected to many other disciplines. Geography of the disabled investigates the relation (treated as a complex of dynamic interactions) between the geographical environment and a PwD taking different degrees and types of disability into account. The role of PwDs' social relations is considered in various contexts from inclusion to marginalisation. Geography of disability refers to the experiences of PwD on a range of spatial scales: from urban to rural, from micro (mobility in their place of residence) to accessibility of transport (as a network of connections between cities and countries). Research concerns people with visible and invisible disabilities (e.g. the experiences of people with mobility issues, as well as invisible intellectual disabilities). Geographical studies contribute towards better adaptation of the geographical environment to the needs of PwD (especially in the field of universal design regarding accessible spaces, buildings and public services). Research also covers social, political and cultural factors of disability determinants (JACOBSON 2013). Geographers point out the different contexts for the definition of disability and propose a comprehensive perspective, as the result of the PwD – geographical environment relation.

4. THE IMPLICATIONS OF THE RESULTS OF GEOGRAPHICAL RESEARCH INTO 'ACCESSIBLE TOURISM'

A review of papers released to date, reveals two directions of geographical research (GOLLEDGE 1993, GLEESON 1996, IMRIE & EDWARDS 2007) which are of significance to the development of the 'accessible tourism' concept:

- theoretical – concerning interaction between people with diverse types of disability and the geographical environment,
- practical – covering principles of universal design in public spaces and the search for technical solutions to remove the barriers PwD encounter.

The **geographical model of disability** (**GM**) emerged from the theoretical current, alongside numerous other models (Table 2). It influences the reshaping of the supply structure of the tourism market which is accessible to PwD (compare ZAJADACZ & ŚNIADEK 2014).

The geographical (**geospatial**) **model of disability** (Fig. 1 GM) was created during research in the field of the geography of disability. 'In recent years, geographers have made significant strides towards understanding the spatiality of disability. This research has

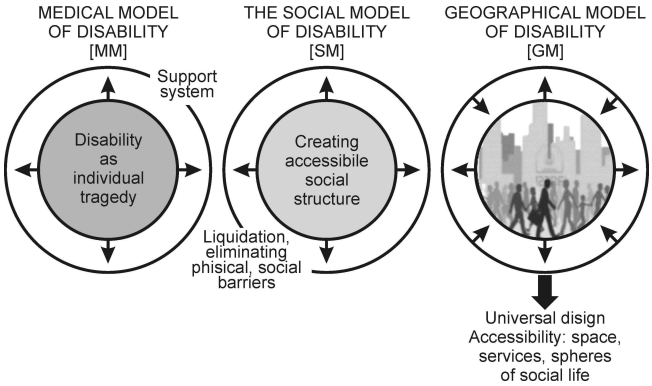
Table 2. Selected models of disability

Medical (MM)	Social (SM)	Geographical (GM)	Economic (EM)
PERSONAL problem	SOCIAL issues	SPACES issue	DEMAND issue
Medical care	Social integration	Spatial integration	Economic integration
Individual Treatment	Social action	Accessibility of places and spaces	Product development
Professional help	Individual and collective responsibility	Exploitation of geographical information systems to evaluate the accessibility of space regarding individual needs	Innovation in design and function
Personal adjustment	Environmental manipulation	Universal design	Universal design
Behaviour	Attitude	Person as an integral part of the geographical environment	Culture
Care	Human rights	Human rights	Competitive advantage
Health care policy	Politics	Politics, market forces	Market forces
Individual adaptation	Social change	Inclusion	Inclusion

Source: B. FORRESTER & D. DAVIS (2011), A. ZAJADACZ & J. ŚNIADEk (2014).

presented disability as a characteristic of the population that inevitably leads to marginalization and spatial exclusion from otherwise normal social arenas and spaces within the built environment' (BUTLER & BOWLBY 1997, GAINES 2004: 80). The GM concept applies experience gathered to date (connected to the MM and SM models) and focuses mainly on the interrelation between PwD and geographical space (CHOUINARD, HALL & WILTON 2010, ZAJADACZ & ŚNIADEK 2014). Geographers connect the nature of factors causing disability (*disabling nature*) both with social and spatial aspects of the human environment, they promote solutions which are more 'inclusive' and which provide access to sites and the full scope of life within society taking different degrees and types of disability into consideration. The GM also aims to remove social 'tensions' related to the SM which treats disability as a process of social exclusion (CHOUINARD, HALL & WILTON 2010). It assumes that limited ability is caused by both individual conditions (connected to a specific dysfunction) and those of the surrounding physical and social environment creating the restrictions which occur in the PwD – environment (social, physical) relation. The GM has accepted a significant paradigm in that it treats needs connected to various types and degrees of disability not as 'special' but as one of many which occur in contemporary society. Universal design should therefore consider the nature of these needs in the creation of maximally accessible buildings, sites and public services (IMRIE 2012, ZAJADACZ 2014). The central postulate is not to concentrate on 'disabilities', but to focus on various social needs and adapt the geographical environment (social, as well as physical) accordingly.

The **GM,** similar to the biopsychosocial model of disability, is mainly focused on developing social



A/ The arrows symbolise the main direction of action connected to: desire take away a person's disability [MM], removal or elimination of barriers and restrictions occurring in the physical and social environment [SM], exploiting the individual potential of each person and the development of universal design respecting the needs of as great a section of society as possible, including PwD, not recognising however any group of needs as special [GM].

Fig. 1. Models of disability: medical, social, geographical
Source: A. ZAJADACZ & J. ŚNIADEK (2014)

inclusion. Social inclusion is a process where people with disabilities have the opportunity and resources necessary to participate fully in economic, social and cultural life and to maintain a standard of living which is acknowledged as normal in a given society. At the same time, it is important to guarantee PwD greater participation in the deciding processes which affect their lives and access to basic rights. In accordance with this approach, features connected to disability are not treated as 'special' but rather as one of many occurring in society. For people who have various physical or sensory restrictions, a universally prepared product ensures easy and independent access. This

approach is in accordance with all the assumptions of the accessible tourism concept to the highest degree (DARCY & DICKSON, 2009: 34, DARCY & BUHALIS (eds.), 2011: 10-11, BUHALIS, DARCY & AMBROSE (eds.), 2012: 3).

The practical current in geographical research led to the identification of the nature of barriers occurring in the geographical environment encountered by people with various types of disability (Table 1) and on different spatial scales. The results served to create tools enabling mobility (including the use of mental maps, navigation systems, adding data on the accessibility of spaces, tourist services buildings) to the tourist information system. A further subject of interest were the characteristics of PwDs' tourism practices (motives, scope of travel, organisation methods etc). The research results indicated the heterogeneous nature of tourism demand from PwD (ZAJADACZ 2012a) which determines the need for the creation of diverse tourism products and breaks down the stereotype which sees tourists with disabilities as a homogeneous group. Of significance to the realisation of the assumptions of accessible tourism in geographical research is respect for the involvement of PwD as experts in the field for the search for optimal solutions in universal design, covering both the spaces and the tourism products offered. Of further practical implication is systemic recognition in geographical studies of the determinants of disability which correspond to recommendations regarding universal accessibility for all elements in the tourism value chain (*San Marino Declaration…* 2014).

5. SUMMARY

One characteristic of research in the geography of disability field is a comprehensive approach to understanding disability, determined by the features of an individual (body and mind) and environmental (social, physical). In the course of the evaluation of the accepted disability models, in particular the medical model (highlighting an individual's dysfunction), geographical research connected both concepts, emphasising the fact that human behaviour varies according to a person's individual characteristics as well as the features of the space within which a person functions as a normal phenomenon. The work of N. HANSEN & CH. PHILO (2007) and R. BUTLER & H. PARR (1999) are of significance here in highlighting this paradigm. Consistently developed by geographers and included in the geographical model of disability, such an approach is in accordance with the currently accepted understanding of disability (*World Report on Disability* 2011). The results of geographical studies have contributed to knowledge on the accessibility of space (on a micro, meso and macro-scale) for people with various types of disability in social and physical contexts. The findings can be applied in the universal design of spaces, especially in relation to tourism which is an area of life closely connected to mobility. Accessible tourism growth is possible thanks to the application of geographical studies in:

- a systemic approach to the determinants of disability and the tourism products offered;
- the tourism information system (including GIS tools);
- diverse spatial scales (from local – providing a direct tourism service to global – including transport issues);
- the elimination of social 'tensions' related to the accepted social model of disability (treating disability as the result of social barriers) and accepting diversity in society in regard to features and behaviour (including those related to disability) as normal;
- the inclusion of PwD as study participants, the interpretation and implementation of research results.

Despite the significant achievements of geographers in the field of research on disabilities, their long tradition and increased intensity (from the 1990s – the 'second wave') this current can still be acknowledged as marginal both in geographical sciences and in research on disability. There is an ongoing need to broaden this area of research (GOLLEDGE 1993). The development of theoretical studies (within the 'geography of disability' framework) should concentrate on current issues – defining the basic level of spatial accessibility which PwD expect (in other words, the features of universal space). The second current from the field of applied research ('geography for the disabled') should include the development of expertise aimed at improving lifestyle and quality of life for PwD in the social space they inhabit and which they co-create. The two currents can significantly contribute towards the development of accessible tourism in a theoretical as well as pragmatic aspect.

FOOTNOTE

[1] According to the Act of September 27 1997 on professional and social rehabilitation and employment of people with a disability Dz.U. [Journal of Laws] No. 123, item 776, (including later amendments) "disability – signifies a permanent or temporary inability to fulfill social roles due to a permanent or long-term impairment to the body, which in particular leads to an inability to work".

BIBLIOGRAPHY

AITCHISON C., 2009, Exclusive discourses: leisure studies and disability, *Leisure Studies*, 28, 4, pp. 375–389.

Americans with Disabilities Act, 1990, http://finduslaw.com/americans-disabilities-act-1990-ada-42-us-code-chapter-126990.

ANDREWS S.K., 1988, Applications of a cartographic communication model to tactual map design, *The American Cartographer,* 15(2), pp. 183–195.

BAIN S. M., 1971, The Geographical Distribution of Psychiatric Disorders in The North East Region of Scotland, *Geographia Medica: International Journal of Medical Geography*, 2, pp. 84-108.

BUHALIS D., DARCY S. (ed.) 2011, *Accessible tourism. Concepts and Issues*, Aspects of tourism, Channel View Publications, Bristol.

BUHALIS D., DARCY S., AMBROSE I. (ed.) 2012, *Best practice in accessible tourism. Inclusion, Disability, Ageing Population and Tourism*, Channel View Publications, Bristol.

BUTLER R., 1994, Geography and Vision-Impaired and Blind Populations, *Transactions of The Institute of British Geographers,* 19(3), pp. 366-369.

BUTLER R., BOWLBY S., 1997, Bodies and spaces: an exploration of disabled people's experiences on public space, *Environment and Planning D: Society and Space,* 15, pp. 411-433.

BUTLER R., PARR H., 1999, *Mind and Body Spaces: Geographies of illness, impairment and disability,* Routledge, London.

CHOUINARD V., 1994, Reinventing radical geography: is all that's left right?, *Environment and Planning D: Society and Space,* 12, pp. 2-6.

CHOUINARD V., 1997, Making space for disabling differences: challenging ableist geographies, *Environment and Planning D: Society and Space,* 15, pp. 379-387.

CHOUINARD V., HALL E., WILTON R., 2010, *Towards Enabling Geographies: "Disabled" Bodies and Minds in Society and Space*, Ashgate Publishing Ltd. Surrey.

CHURCH R.L., MARSTON J.R., 2003, Measuring accessibility for people with a disability, *Geographical Analysis*, 35, 1, pp. 83–96.

DARCY S., PEGG S., 2011, Towards strategic intent: Perceptions of disability service provision amongst hotel accommodation managers, *International Journal of Hospitality Management*, 30, pp. 468-476.

DEAN K. G., JAMES H. D., 1981, Social factors and admission to psychiatric hospital: schizophrenia in Plymouth, *Transactions of The Institute of British Geographers,* New Series 6, pp. 39–52.

DEAR M., 1977a, Locational factors in the demand for mental health care, *Economic Geography* 53(3), pp. 223-240.

DEAR M., 1977b, Psychiatric patients and the inner city, *Annals of The Association of American Geographers* 67, pp. 588-594.

DORN M.L., 1994, 'Disability as spatial dissidence: a cultural geography of the stigmatized body,' unpublished M.S. thesis in Geography, The Pennsylvania State University, University Park, Pennsylvania.

DORN M., 2001, Symposium on disability geography: commonalities in a world of differences, *Disability Studies Quarterly* 21 (4), pp. 2-5.

FARIS, R.E.L., DUNHAM H., W., 1939, *Mental Disorders in Urban Areas: An Ecological Study of Schizophrenia and other Psychoses*, University of Chicago Press, Chicago.

FORRESTER B., DAVIS D., 2011, *An Economic Model of Disability*, Travability Pty. Ltd., Occasional Paper, 4, http://travability.travel/blogs/economic_model.html; 20.03.2015.

FRY C., 1988, Maps For The Physically Disabled, *The Cartographic Journal*, 25, pp. 20-28.

FURMANEK M., URBAŃSKA K., 2011, Motivations and directions of travel for tourists with disabilities in the light of Krakow's research, [in:] J. Wyrzykowski, J. Marak (eds.) *Tourism Role in the Regional Economy. Social, Health-Related, Economic and Spatial Conditions of Disabled People´s Tourism Development*. University of Business in Wroclaw, Wroclaw, pp. 369-380.

GAINES, D., 2004, Geographical perspectives on disability: a socio-spatial analysis of the mentally disabled population in Russia, *Middle States Geographer*, 37, pp. 80-89.

GANT R., 1992, Transport for the disabled, *Geography,* 77(1), pp. 88-91.

GfK Belgien/University of Surrey/NeumannConsult/ ProAsolutions, 2014: *Economic impact and travel patterns of accessible tourism in Europe*, Eine Studie im Auftrag der EU-Kommission. Brüssel.

GILMAN H.F. 1987, Territorial concepts among Tampa's deaf community, *Florida Geographer*, 21, pp. 20-26.

GLEESON B., 1996, A geography for disabled people?, *Transactions of The Institute of British Geographers*, 21, pp. 387-396.

GLEESON B., 1997, Community care and disability: the limits to justice, *Progress in Human Geography,* 21(2), pp. 199-224.

GLEESON B., 1999, *Geographies of Disability*, Routledge, London.

GLEESON B., 2001, Disability and the open city, *Urban Studies,* 38(2), pp. 251-265.

GOLLEDGE R. G., 1993, Geography and the disabled: a survey with special reference to vision impaired and blind populations, *Transactions of the Institute of British Geographers*, 18, pp. 63-85.

GUDGIN G., 1975, The distribution of schizophrenics in Nottingham: A comment, *Transactions of The Institute of British Geographers,* 64, pp. 148-149.

HANSEN N., PHILO CH., 2007, The normality of doing things differently: bodies, spaces and disability geography, *Tijdschrift voor Economische en Sociale Geographie*, 98, 4, pp. 493-506.

HAWKESWORTH M., 2001, Disabling spatialities and the regulation of a visible secret, *Urban Studies,* 38 (2), pp. 299-318.

ICF, 2002, *Towards a Common Language for Functioning, Disability and Health,* WHO, Geneva.

IMRIE R., 2012, *Accessible Housing: Quality, Disability and Design*, Routledge, London.

IMRIE R., Hall P., 2001, *Inclusive design*, Spon Press, London.

IMRIE R., EDWARDS C., 2007, The geographies of disability: Reflections on the development of a sub-discipline, *Geography Compass,* 1/3, pp. 623-640.

JACOBSON R.D., 1992, Spatial cognition through tactile mapping, *Swansea Geographer*, 29, pp. 79-88.

JACOBSON R.D., 1994a, GIS and the visually disabled: The spatial contribution to mobility, *Mapping Awareness*, 8(6), pp. 37-39.

JACOBSON R.D., 1994b, Navigation for the visually impaired: Going beyond tactile cartography, *Swansea Geographer*, 31, pp. 53-59.

JACOBSON D., 2013, Geography of disability, http://www.oxfordbibliographies.com; 20.03.2015.

JÓZEFOWICZ I., 2006, Bydgoszcz – przyjazne miasto? Dostępność przestrzenna wybranych funkcji dla potrzeb osób niepełnosprawnych, [in:] H. Ochonczenko, M.A. Paszkowicz (eds.), *Potrzeby osób niepełnosprawnych w warunkach globalnych przemian społeczno-gospodarczych,* vol. II, Oficyna Wydawnicza „Impuls", Kraków.

JÓZEFOWICZ I., 2007, Sport dla wszystkich... Możliwości rekreacji ruchowej niepełnosprawnych mieszkańców Bydgoszczy,

J. Kistowski (ed.), Prace Komisji Geografii Komunikacji PTG, XIII, Wydział Ekonomii Uniwersytetu Rzeszowskiego, Warszawa–Rzeszów, pp. 281-291.

JÓZEFOWICZ I., 2010, *Codzienna ruchliwość osób niepełnosprawnych w Bydgoszczy*, unpublished Dr. thesis, IGiPZ PAN, Warszawa.

KITCHIN R., 1999, Ethics and morals in geographical studies of disability, [in:] J. Proctor, D. Smith (eds.), *Geography and Ethics: Journeys through a Moral Terrain*, Routledge, pp. 223-236.

KITCHIN R., 2000, The researched opinions on research: Disabled people and disability research, *Disability and Society*, 15(1), pp. 25-48.

KITCHIN R., BLADES M., GOLLEDGE R.G., 1997, Understanding spatial concepts at the geographic scale without the use of vision, *Progress in Human Geography*, 21(2), pp. 225-242.

KITCHIN R., JACOBSON R.D., GOLLEDGE R.G., BLADES M., 1998, Belfast without sight: Exploring geographies of blindness, *Irish Geography* 31, pp. 34-46.

KITCHIN R., WILTON R. (eds.), 2000, Geography, disability and ethics, *Ethics, Place and Environment*, 3(1), pp. 61-102.

LIN G., ZIMMER Z., 2002. A geographical analysis of spatial differentials in mobility and self-care limitations among older Americans, *International Journal of Population Geography*, 8(6), pp. 395-408.

KOŁODZIEJCZAK A., ZAJADACZ A., 2008, Dostępność infrastruktury i informacji turystycznej warunkiem poznawania obiektów krajoznawczych Wielkopolski przez osoby niepełnosprawne, [in:] A. Stasiak (ed.), *Rola krajoznawstwa i turystyki w życiu osób niepełnosprawnych*, Wyd. PTTK "Kraj", Warszawa, pp. 193-202.

LISOWSKI A., 2008, Geografia społeczna, [in:] *Historia geografii polskiej*, A. Jackowski, S. Liszewski, A. Richling A. (eds.), Wyd. Naukowe PWN, Warszawa, pp. 195-205.

Manual on Accessible Tourism for All – Public-Private Partnerships and Good Practices, 2015, World Tourism Organization (UN WTO) and Fundación ACS.

MARSTON J.R., GOLLEDGE R.G., COSTANZO C.M., 1997, Investigating travel behavior of nondriving blind and vision impaired people: The role of public transit, *The Professional Geographer*, 49(2), pp. 235-245.

MCEWAN C., BUTLER R., 2007, Disability and development: Different models, different places, *Geography Compass*, 1, 3, pp. 448–466.

NeumannConsult, 2014, Tourismus für Alle in Osnabrück und im Osnabrücker Land. Ein Leitfaden für die Praxis. Herausgegeben von Osnabrück Marketing und Tourismus GmbH/ Tourismusverband Osnabrücker Land e.V. Osnabrück.

*NeumannConsult/Project*M/DSFT, 2014, Praktikerleitfaden Barrierefreier Tourismus in NRW. Herausgegeben vom Tourismus NRW e.V. Düsseldorf.

NUTLEY S.D., 1980, Accessibility, Mobility and Transport-Related Welfare: The Case of Rural Wales, *Geoforum*, 11, pp. 335-352.

OLIVER M., 1996, *Understanding Disability: From Theory to Practice*, Macmillan, Basingstoke, Houndmills.

PARK D., RADFORD J., VICKERS M., 1998, Disability studies in human geography, *Progress in Human Geography*, 22 (3), pp. 208-233.

PARSONS T., 1951, *The social system*, Routlage & Kegan Paul, London.

PARR H., PHILO CH., BURNS N., 2004, Social geographies of rural mental health: experiencing inclusions and exclusions, *Transactions of the Institute of British Geographers*, 29, 4, pp. 401-419.

PARYSEK J., 1990, Czy i jak geografia pełni funkcje praktyczne – dwugłos nauki i praktyki, *Przegląd Geograficzny*, 62, 1-2, pp. 3-21.

Parysek J., 2002, Funkcje praktyczne geografii medycznej, [in:] *Zróżnicowanie przestrzenne sytuacji zdrowotnej, systemu bezpieczeństwa i usług medycznych w województwie pomorskim*, ser. „Regiony Nadmorskie" 5, Katedra Geografii Rozwoju Regionalnego, Uniwersytet Gdański, Gdańsk, pp. 7–14.

PFEIFER D. (ed.), 2001, Disability geography: commonalities in a world of differences, *Disability Studies Quarterly*, 21 (4), pp. 2-5.

Recommendations on Accessible Tourism, 2013, World Tourism Organization (UNWTO).

San Marino Declaration on Accessible Tourism, 2014, UNWTO, Republik of San Mariono, http://media.unwto.org/press-release/2014-12-03/san-marino-declaration-calls-univer sal-accessibility-tourism.

SKELTON T., VALENTINE G., 2003, It feels like being deaf is normal: an exploration into the complexities of defining D/deafness and young D/deaf peoples' identities, *Canadian Geographer*, 47(4), pp. 451-466.

STASIAK A., ŚLEDZIŃSKA J., (eds.) 2008, *Rola krajoznawstwa i turystyki w życiu osób niepełnosprawnych*, Wyd. PTTK „Kraj", Warszawa.

The Disability Discrimination Act, DDA, 1995, http://www.legislation.gov.uk/ukpga/1995/50/contents.

TAYLOR Z., JÓZEFOWICZ I., 2012, Geograficzne badania niepełnosprawności ze szczególnym uwzględnieniem codziennej ruchliwości osób niepełnosprawnych w przestrzeni miasta – część I, *Przegląd Geograficzny*, 84, 2, pp. s. 261–278.

Ustawa z dnia 27 sierpnia 1997 r. *o rehabilitacji zawodowej i społecznej oraz zatrudnianiu osób niepełnosprawnych*, Dz.U. 1997, nr 123, poz. 776.

Union of Physically Impaired People Against Segregation, 1976.

World Report on Disability, 2011, WHO, http://www.who.int/disabilities/world_report/2011/report.pdf; 20.02.2015.

WIEDEL J.W., 1966, Tactual maps for the visually handicapped. *Professional Geographer*, 18, pp. 132-139.

WYRZYKOWSKI J., MARAK J. (eds.), 2011. *Tourism Role in the Regional Economy. Social, Health-Related, Economic and Spatial Conditions of Disabled People´s Tourism Development*, University of Business in Wroclaw, Wrocław.

ZAJADACZ A., 2012a, *Turystyka osób niesłyszących – ujęcie geograficzne*, Bogucki Wydawnictwo Naukowe, Poznań.

ZAJADACZ A., 2012b, Badania geograficzne a niepełnosprawność, [in:] *Turystyka, moda na sukces*, „Warsztaty z Geografii Turyzmu", vol. 2, B. Włodarczyk, J. Kowalczyk-Anioł, M. Makowska-Iskierka (eds.), Wyd. Uniwersytetu Łódzkiego, Łódź, pp. 181-203.

ZAJADACZ A., 2014, Sources of tourist information used by deaf people. Case study: The Polish Deaf Community, *Current Issues in Tourism*, 17, 5, pp. 434-454.

ZAJADACZ A., ŚNIADEK J., 2014, Modele niepełnosprawności jako determinanty przeobrażeń struktury podażowej rynku turystycznego dostępnego dla osób niepełnosprawnych, [in:] *Wyzwania społeczno-ekonomiczne współczesnej turystyki*, Wyższa Szkoła Turystyki i Ekologii w Suchej Beskidzkiej, pp. 208-230.

Marek Nowacki
Poznan School of Banking
Institute of Economics
marek.nowacki@wsb.poznan.pl

CONSTRAINTS TO ATTENDANCE AT VISITOR ATTRACTIONS: THE CASE OF MUSEUMS, ZOOS AND BOTANIC GARDENS

Abstract: The paper has employed a three-factor model of constraints, which differentiates intrapersonal, interpersonal and structural. The study was carried out on a sample of N = 981 adult residents of Poland. The three most common barriers constraining attendance at attractions were identified: availability, high entrance fees and lack of time. The constraints were found to be related to a number of socio-demographic characteristics, such as gender, age, education, size of place of residence and household income per capita. Three market segments limited by similar constraints and showing similar attraction attendance behaviour were identified with their socio-demographic characteristics.

Keywords: visitor attractions, constraints, attendance, segmentation.

1. INTRODUCTION

Constraints can be considered as factors that shape leisure preferences, limit activity or reduce the level of perceived pleasure and satisfaction (JACKSON 2005). The literature concerning constraints to leisure involvement is quite rich (CRAWFORD & GODEY 1987, CRAWFORD *et al.* 1991, JACKSON 2000, 2005, SHAW & HENDERSON 2005), however the problem of tourism activity constraints, especially to attendance at visitor attractions, is discussed much more rarely. Most research focuses on the frequency of attendance, and there is a lack of empirical research identifying constraints and activity with regard to attendance. It is very important that the constraints be studied along with their consequences, i.e. visitor levels (WIT 1992). Unfortunately, little research has been undertaken so far that takes these and their interactions into consideration.

The purpose of the paper is to establish the level of activity with regard to attendance at visitor attractions, as well as to identify the constraints to this activity and factors determining their occurrence. The secondary aim is to identify and characterize market segments with a similar level of activity and limited by similar constraints.

2. LEISURE CONSTRAINTS

The most commonly listed leisure constraints include lack of time and money (JACKSON 2005), while the ones most difficult to overcome are thought to be psychological barriers, deeply ingrained in social awareness (KUNICKI 1984, KIEŁBASIEWICZ-DROZDOWSKA 2001). From socio-demographic characteristics, the one most strongly related to leisure involvement and the perception of constraints is gender. This mainly results from the social roles of men and the women rather than from their respective physio- or psychological features (SHAW & HENDERSON 2005). Women are much more susceptible to leisure inhibitors than men. These include lack of time, companions or transport; family responsibilities, fear of crime, lack of prerequisite skills or lack of self-belief (WIT & GOODALE 1981, SEARLE & JACKSON 1985, SHAW & HENDERSON 2005).

The perception of constraints is also influenced by the individual's phase of life. Depending on the phase, new constraints become important, while others recede into the background. JACKSON (2005) identified four stages of change in perceiving constraints in an individual's life. In the course of life, factors related to skills and abilities become increasingly important, while the relevance of costs decreases with age. Engagement in family and professional

duties, in turn, increases in middle age and decreases during old age, forming an inverted U-shaped curve. This pattern, influences the perception of interpersonal factors, such as social relations with family members, friends, co-workers and neighbours. Perception of constraints also rises with increases in costs, especially in multi-child households. The same holds true for perceived lack of time as a leisure participation constraint (Jun *et al.* 2008).

The hierarchical model of constraints developed by Crawford *et al.* (CRAWFORD & GODEY 1987, CRAWFORD, JACKSON, GODEY 1991) proposes three constraint categories: intrapersonal, interpersonal and structural (Fig. 1). Intrapersonal constraints include preferences and predispositions for certain activities. They emerge as a result of individual needs, socialisation, stress, depression, preferred attitudes and attitudes among the peer group, and self-perception of skills and abilities. Interpersonal constraints result from social interactions, relations with friends, family members and others. Structural constraints depend on life-cycle stage, free time availability, flexibility, financial situation and opportunities.

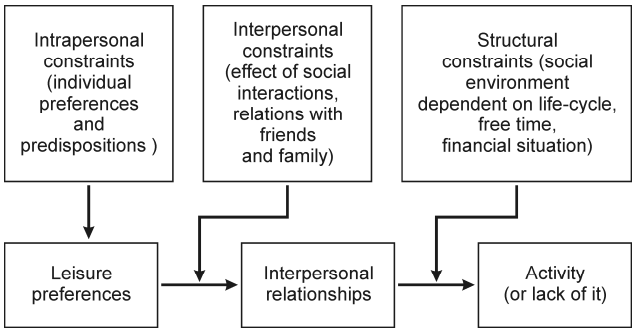


Fig. 1. The hierarchical model of leisure constraints (CRAWFORD, JACKSON, GODEY 1991, p. 313)

The following conclusions follow from the model: leisure activity is a process that is sequentially influenced by a number of factors, including constraints. The sequential influence of the constraints results in a hierarchy of importance. At the initial stage of an individual's development, the constraints influence the formation of leisure activity preferences. Then, depending on the preferred leisure activities, interpersonal constraints may occur. Finally, when these two types of constraints have been overcome, structural barriers may emerge, intervening factors between leisure preferences and actual activity.

Leisure activity constraints are increasingly perceived as changeable, i.e. participation in activities despite existing constraints by employing various strategies to overcome them. Constraints may modify the participation, but they do not make it impossible. The power of motivation and the benefits that can be obtained through the activity determine success in overcoming constraints. As a consequence, the ability to effectively overcome constraints determines the level of leisure activity (NADIROVA & JACKSON 1999).

3. CONSTRAINTS TO ATTENDANCE AT VISITOR ATTRACTIONS

Constraints to attendance at visitor attractions and their influence are not much different from other constraints on leisure activity. They include lack of time resulting from professional and household responsibilities, lack of energy after work, lack of money and low general morale, lack of cultural habits and needs in free time, competition from other forms of leisure, lack of transportation (no car or poor public transport), costs of transport, negative perceptions of visitor attractions as 'ruins' or 'always the same' and being interesting only for tourists (DAVIES & PRENTICE 1995). For example S. TIAN, J. CROMPTON, P. WITT (1996) (1996) identified six factors inhibiting people from visiting museums: cost, time, access, programme, repetition and interest.

J. JUN, G. KYLE i J. O'LEARY (2008)), when studying those who did not visit museums despite being interested, found that certain socio-demographic features are correlated with certain types of constraints. For example income is correlated with intrapersonal and structural barriers. Age, gender and the number of children in the household have a significant impact on interpersonal constraints. The perception of constraints is a function of socio-demographic characteristics and their interactions. The perception of intrapersonal constraints, for instance, varies according to gender, and depending on the number of children in the household. Moreover, place of residence 'filters', the impact of socio-demographic characteristics on the perception of constraints.

In the case of visits to museums, the distance constraint or lack of access may be particularly important for those living outside of urban centres where they do not exist. Similar to communication difficulties are problems related to finding companionship, health issues and opportunities for other activities (e.g. other visitor attractions) (SEARLE & JACKSON 1985, MCCARVILLE & SMALE 1993).

Authors agree that if an individual has knowledge about the existence of attractions, the decision about visiting is a compromise between the perception of the benefits that can be obtained, experiences received, and the effort and expense needed to overcome constraints. Constraint perception is also influenced by the number of alternative options available in free

time, selected based on barriers related to finances, time and other factors (WOODSIDE & LYSONSKI 1989, UM & CROMPTON 1992, TIAn *et al.* 1996).

4. METHOD

Data for the study were collected through the Omnibus survey conducted by the Centre for Public Opinion Research Foundation (*Fundacja Centrum Badania Opinii Społecznej*) between 30 November and 8 October 2010 on a representative random sample of 981 adult Polish residents. The sample was drawn from the Common Electronic System of Population Register (*Powszechny Elektroniczny System Ewidencji Ludności – PESEL*). Interviews were carried out face-to-face using CAPI (Computer Assisted Personal Interviewing). Survey questions covered a wide range of socio-political issues, among them were questions about the level of activity and constraints related to attendance at visitor attractions. The study focused on three types of attraction: museums, zoos and botanical gardens. The first question was, "How often do you visit a museum, a zoo or a botanical garden?" Possible answers were *once or several times a month, once or several times a year, less often, never* and *difficult to say.* The question related to activity constraints was as follows: "What is the reason that you never, or hardly ever, visit a museum, a zoo or a botanical garden?" Respondents were asked to point out any of the 13 constraints (Table 2).

As a dependent variable the level of activity on visiting attractions was considered, and as independent variables – socio-demographic indicators. Activity constraints were considered as mediating variable: as independent variable affecting the level of activity and as dependent variable, being afected by socio-demographic indicators.

Several statistical methods were employed in data analysis. The first step involved the calculation of attendance frequency by the interviewees and the score averages for particular constraint types in the sample. The next step involved non-parametric Mann-Whitney U and Kruskal-Wallis H tests employed to determine which socio-demographic factors and constraints are correlated with the level of activity and which socio-demographic factors are correlated with the constraints. The statistical tests were considered significant at a level of $p < 0.05$. In the last step cluster analysis was performed, aimed at selecting, from among the test group, homogeneous market segments which are similar in activity level and likewise in perceiving constraints.

5. SAMPLE CHARACTERISTICS

The studied sample comprised 47.6% women and 52.4% men. The largest groups were the older respondents, aged 45-54, 55-64 and older than 64 – 18% in each group, while less numerous were the younger, aged 25-34 – 14.6% and 18-24 – 13.6%. 25% of the respondents had only primary education, another 25% had a further basic vocational education, 33% secondary (post 16), and 15% higher. Most respondents lived in the countryside (37.6%), while 19.9% lived in towns and cities with a population of 20,000 to 100,000. Only 12.7% lived in the largest cities. The largest group with regard to income were those whose household income per capita fell within the range of 751–1000 PLN (ca. 183–243 EUR) per month. The other groups comprised approximately 15% only of the whole sample.

6. RESULTS

An analysis of the responses received from the study demonstrates that the respondents' activity regarding attendance at visitor attractions is extremely low. Almost half of the sample (42.2%) visit no attractions whatsoever, whereas 28.1% visit less than once a year (Table 1). This suggests that almost three-quarters of the adult Polish population show no activity at all. Only 29.1% claim to attend visitor attractions on a fairly regular basis (once a year or more).

Table 1. Level of activity regarding attendance at visitor attractions

How often do you visit a museum, a zoo or a botanical garden?	N	%
Once or several times a month	32	3.26
Once or several times a year	254	25.89
Less often	276	28.14
Never	414	42.20
Difficult to say	5	0.51
Sum	981	100.00

Source: author.

An analysis of the answers to the question: *What is the reason that you never or rarely visit a museum, a zoo or a botanical garden?* demonstrated that the most frequently indicated attendance constraint was the lack of such attractions in their area (for 46% of the respondents) and lack of time (32.32%) (Table 2). Next were troublesome (difficult) access (23.05%), expensive entrance fees (22.21%) preference of other leisure activities (20.20%) and lack of interest (14.40%). The least likely were the statements: *I feel out of place there (I cannot understand, I feel bored)* (0.90%), *unintelligible exhibitions* (1.07%) and *because of the children* (1.11%).

Table 2. Constraints to attendance at visitor attractions

What is the reason that you never, or hardly ever, visit a museum, a zoo or a botanical garden?	*N*	%
Lack of nearby attractions (structural constraint)	435	46.00
I am too busy (intrapersonal constraint)	304	32.32
Poor communication (structural constraint)	222	23.05
Entrance fees too expensive (structural constraint)	200	22.21
I prefer other activities (intrapersonal constraint)	191	20.20
I am not interested (intrapersonal constraint)	122	14.40
Personal reasons (health, security) (intrapersonal constraint)	88	9.26
Always the same things to see (structural constraint)	49	5.07
Lack of companionship (interpersonal constraint)	30	3.44
Uninteresting exhibitions (structural constraint)	15	1.39
Because of children (interpersonal constraint)	10	1.11
Unintelligible exhibitions (intrapersonal constraint)	9	1.07
I feel out of place there (I cannot understand, I feel bored) (intrapersonal constraint)	8	0.90
Difficult to say	22	1.85
No response	5	0.08

Source: author.

7. CONSTRAINTS, ACTIVITY AND SOCIO-DEMOGRAPHIC CHARACTERISTICS

The level of activity is strongly linked to socio-demographic characteristics (Table 3): women are more likely than men to visit the attractions ($Z = 2.21$; $p = 0.014$), younger people visit the attractions more often than the elderly – a clear age limit is about 45 ($H = 124.23$, $p < 0.001$). Similarly, place of residence clearly differentiates activity, evidently because of access: the activity of village and small town inhabitants is by far the smallest and grows in proportion with increase in size of place of residence ($H = 123.23$, $p < 0.001$). Also, a direct relationship was found between the level of education: the activity of those with only primary education is the lowest but gradually increases in groups with higher levels ($F = 248.92$, $p < 0.001$). Visiting attractions is also closely related to the financial situation: it increases in direct proportion to household income ($H = 88.45$; $p < 0.001$).

Table 3. Activity level and socio-demographic characteristics

Socio-demographic characteristics		How often do you visit a museum, a zoo or a botanical garden? (data in %)						Test (*U* or *H*)
		Once or several times a month	Once or several times a year	Less often	Never	Difficult to say	Mean	
Gender	Male	2.5	21.7	29.1	46.2	0.5	3.20	$Z = 2.21$ $p = 0.019$
	Female	3.4	25.9	27.1	43.1	0.4	3.05	
Age	18-24	7.4	35.2	26.6	30.7	0.0	2.76	$H = 124.23$ $p < 0.001$
	25-34	1.0	38.9	38.0	22.0	0.0	2.79	
	35-44	5.8	32.2	32.7	28.8	0.6	2.77	
	45-54	2.3	14.7	31.5	51.5	0.0	3.24	
	55-64	2.2	19.1	24.9	52.3	1.6	3.31	
	65+	0.8	8.3	15.8	74.5	0.6	3.59	
Residence	Countryside	1.1	15.1	24.3	59.3	0.3	3.38	$H = 123.23$ $p < 0.001$
	Town < 20,000	1.6	13.8	27.0	56.2	1.3	3.38	
	20-100,000	3.6	24.1	32.2	40.2	0.0	3.08	
	101-500,000.	3.7	35.2	32.4	27.4	1.3	2.82	
	501,000 and more	8.2	46.6	28.6	16.6	0.0	2.47	
Education	Primary	0.4	10.4	13.4	74.5	1.3	3.73	$H = 248.92$ $p < 0.001$
	Vocational	1.3	14.0	28.6	56.1	0.0	3.43	
	Secondary	4.8	26.0	40.4	28.6	0.2	2.97	
	College or university	6.2	58.0	24.3	11.0	0.6	2.43	
Household income per capita per month	500 PLN or less	0.6	13.7	21.4	63.8	0.5	3.49	$H = 88.45$ $p < 0.001$
	501-750 PLN	1.4	13.3	32.0	53.2	0.0	3.38	
	751-1000 PLN	2.8	23.7	24.2	48.4	1.0	3.22	
	1001-1500 PLN	3.4	27.0	32.8	36.3	0.5	3.00	
	1500 PLN or more	4.2	42.9	33.7	18.4	0.8	2.67	

Source: author.

Table 4. Constraints, activity level and socio-demographic characteristics (data in percentages, the differences were tested with Pearson χ^2 test and Mann-Whitney U test, significant differences are in bold)

Socio-demographic characteristics		Intrapersonal constraints						Inter-personal constraints		Structural constraints				
		I am not interested	Personal reasons	I feel out of place there	I am too busy	I prefer other activities	Unintelligible exhibitions	Because of children	Lack of companionship	Entrance fees too expensive	Lack of nearby attractions	Poor communication	Always the same things to see	Uninteresting exhibitions
Gender	Male	**19**	7	1	36	**24**	1	**0**	2	**17**	45	**20**	6	2
	Female	**10**	11	1	29	**17**	1	**2**	4	**27**	47	**26**	5	1
Age	18-24	**26**	**1**	1	**43**	27	**1**	**0**	6	22	51	24	**6**	1
	25-34	**10**	**0**	1	**50**	28	**0**	**5**	1	20	38	21	**11**	4
	35-44	**5**	**1**	0	**41**	15	**1**	**1**	1	21	50	27	**4**	1
	45-54	**15**	**3**	1	**33**	20	**0**	**1**	3	26	51	16	**5**	1
	55-64	**12**	**10**	0	**27**	18	**0**	**0**	5	22	52	27	**3**	0
	65 and more	**20**	**35**	2	**6**	15	**4**	**0**	4	21	37	24	**2**	0
Residence	Countryside	**18**	**10**	1	**31**	**15**	2	1	2	20	**59**	**29**	**3**	**1**
	Town < 20,000	**10**	**10**	0	**21**	**19**	0	1	2	22	**66**	**33**	**2**	**0**
	20-100,000	**14**	**3**	0	**27**	**21**	0	1	5	21	**48**	**22**	**2**	**0**
	101-500,000	**16**	**9**	2	**37**	**29**	2	3	3	26	**24**	**11**	**11**	**5**
	501,000 and more	**8**	**17**	2	**52**	**27**	1	1	8	26	**5**	**11**	**14**	**1**
Education	Primary	**22**	**15**	1	**19**	**10**	**3**	1	4	**26**	**55**	**28**	**1**	**0**
	Vocational	**18**	**11**	1	**27**	**22**	**1**	1	3	**25**	**51**	**23**	**2**	**0**
	Secondary	**9**	**6**	1	**40**	**23**	**0**	1	4	**19**	**44**	**23**	**7**	**2**
	College or university	**5**	**3**	1	**49**	**28**	**0**	3	2	**17**	**27**	**15**	**12**	**4**
Household income per capita per month	500 PLN or less	13	7	0	**24**	**11**	1	**3**	2	**33**	**57**	**23**	**1**	1
	501-750 PLN	10	9	1	**29**	**12**	2	0	3	**28**	**62**	**28**	**3**	0
	751-1000 PLN	21	12	1	**31**	**19**	2	1	4	**17**	**45**	**23**	**4**	0
	1001-1500 PLN	12	12	1	**30**	**27**	0	0	2	**23**	**41**	**30**	**7**	2
	1501 PLN or more	10	6	1	**47**	**27**	1	2	3	**14**	**29**	**14**	**10**	3
Evaluation of own financial condition	Poor	12	**21**	0	**16**	**9**	2	1	6	**47**	48	**28**	**2**	1
	Average	17	**10**	1	**29**	**18**	1	1	4	**21**	49	**26**	**4**	1
	Good	12	**5**	1	**43**	**27**	1	1	2	**15**	41	**17**	**8**	2
How often do you visit a museum, a zoo or a botanical garden?	Once or several times a month	**0**	**0**	0	**0**	0	**0**	0	0	**0**	0	**0**	0	0
	Once or several times a year	**4**	**3**	1	**45**	22	**1**	2	4	**24**	34	**19**	11	3
	Less often	**7**	**7**	1	**40**	26	**1**	1	3	**22**	49	**28**	6	2
	Never	**22**	**15**	1	**18**	15	**1**	1	3	**19**	51	**23**	1	0
	U test (p value)	**0,001**	**0.001**	ns	**0.001**	ns	**0.007**	ns	ns	**0.001**	ns	**0.001**	ns	ns

Note: ns – non-significant difference.
Source: author.

In the next step in the analysis was to verify whether activity constraints are correlated with socio-demographic characteristics (Table 4). Men to a much lesser extent than women are interested in visiting attractions – they prefer to spend their time in other ways. On the other hand, strong constraints for women are admission prices, difficulties in reaching and children. The connection of age with constraints is diverse: a lack of interest is shown by the oldest and youngest (only 5% of those aged 35-44 shows no interest in visiting), lack of time is the main reason under 44, those aged 25-34 complain most about uninteresting exhibitions. Place of residence differentiates the perception of barriers: many people from big

towns mentioned personal reasons, lack of time and the possibility of spending time in a different way. In turn, residents of villages and small towns indicate a lack of interest, lack of attractions in the area and too inconvenient to reach. Similar relationships exist with respect to education and income (Table 4). As a result of Mann-Whitney U tests, it was found that there are differences in activity of those who indicated whether or not the existence of six barriers: I'm not interested, personal reasons, I'm too busy (here the relationship is reversed – active people who say they are too busy and so visit the attractions more often than those who have enough time), the exhibition is unintelligible, entrance fees too expensive and poor communication.

8. CLUSTER ANALYSIS

In order to identify groups of people limited by similar constraints and characterized by a similar level of activity a cluster analysis was performed. Two methods were used sequentially: first, hierarchical cluster analysis and as the next step, k-means cluster analysis. In both cases, 13 constraints and level of activity were used as segmentation criteria. Firstly, hierarchical cluster analysis was carried out in order to identify the optimal number of clusters which should be assumed in a k-means cluster analysis. This analysis revealed the existence of three segments distinctly different from each other. In the next step, a cluster analysis was performed with the k-means method (Ward procedure) with a three-cluster variant being treated as the optimal one. As a result of such procedure three clusters of respondents limited by similar constraints and manifested a similar level of activity were obtained (Table 5).

In the next step, the obtained clusters were socio-demographic characteristics and analysis of inter-group differences was made using Pearson's χ^2 test. It showed significant differences between clusters due to all of the investigated socio-demographic characteristics (Table 6).

The first cluster – 'intrapersonal constraints' – comprises a majority of respondents (522 – 53.2%). These are individuals with the lowest activity in visiting attractions ($\bar{x}$ = 3.65) and constrained mainly intrapersonally – lack of interest, personal reasons, lack of time, other interests, as well as two structural barriers – tickets too expensive and the lack of nearby attractions. It contains significantly more women than men, compared to the average in the sample (48.08%) and significantly more aged 45-54 (22.61%) and 65 and older (21.84%). This cluster includes many more

Table 5. Cluster analysis results (data in percent; proportions distinguished above average are in bold; * – p <0.05; ** – p <0.01; *** – p <0.001)

Variables	Cluster 1 (n = 522; 53.2,%)	Cluster 2 (n = 174; 17.7%)	Cluster 3 (n = 286; 29.1%)	χ^2 test
How often do you visit a museum, a zoo or a botanical garden?	3.65[a]	3.55	**1.89**	3.12
Intrapersonal constraints				
I am not interested	**10.70**	0.71	1.02	60.43***
Personal reasons (health, security)	**6.42**	1.83	0.71	21.47***
I feel out of place there	0.41	0.20	0.20	ns
I am too busy	**15.49**	3.47	**12.03**	25.35***
I prefer other activities	**11.62**	2.04	5.81	8.80*
Unintelligible exhibitions	0.61	0.00	0.31	ns
Interpersonal constraints				
Lack of companionship	1.63	0.31	1.12	ns
Because of children	0.31	0.20	0.51	ns
Structural constraints				
Uninteresting exhibitions	0.71	0.00	0.82	ns
Entrance fees too expensive	**9.48**	4.69	6.22	6.38*
Lack of nearby attractions	**22.53**	13.05	8.77	86.06***
Poor communication	0.00	**17.64**	4.99	749.08***
Always the same things to see	1.83	0.20	**2.96**	23.95***

Note: [a] – average was calculated for the following: 1 – once or a several times a month, 2 – once or several times a year, 3 – less often, 4 – never.

Source: author.

Table 6. Characteristics of clusters by socio-demographic variables
(data in percentages; proportions above average are in bold)

Socio-demographic characteristics		Cluster 1	Cluster 2	Cluster 3	Mean
Gender	Female	**48.08**	41.04	38,46	44,04
	Male	51.92	**58.96**	**61,54**	55,96
	Pearson's χ^2 Test	$\chi^2 = 7.71$; $df = 2$; $p = 0.02$			
Age	18–24	9.20	9.25	**17,48**	11,62
	25–34	(12.64)	13.29	**23,08**	15,80
	35–44	(12.64)	(12.14)	**22,73**	15,49
	45–54	**22.61**	16.18	(12,94)	18,65
	55–64	21.07	**26.59**	(16,78)	20,80
	65+	**21.84**	**22.54**	(6,99)	17,64
	Pearson's χ^2 test	$\chi^2 = 80.08$; $df = 10$; $p < 0.001$			
Education	Primary	**23.56**	**28.32**	(6,29)	19,37
	Vocational	**29.69**	**27.17**	(11,89)	24,06
	Secondary	34.67	**38.15**	36,71	35,88
	College or university	(12.07)	(6.36)	**45,10**	20,69
	Pearson's χ^2 test	$\chi^2 = 181.16$; $df = 6$. $p < 0.001$			
Residence	Countryside	41.95	**53.76**	(23,78)	38,74
	Town < 20,000	13.98	**21.39**	9,09	13,86
	20-100,000	19.92	(15.60)	18,88	18,86
	101-500,000	15.33	(6.36)	**23,43**	16,11
	501,000 and more	(8.81)	(2.89)	**24,83**	12,44
	Pearson's χ^2 test	$\chi^2 = 115.128$; $df = 8$. $p < 0.001$			
Household income per capita per month	500 zł or less	**17.50**	**18.27**	(10,74)	15,76
	501–750 PLN	**17.86**	**23.08**	(5,37%)	15,38
	751–1000 PLN	**28.57**	(19.23)	24,16	25,52
	1001–1500 PLN	(19.64)	**31.73**	**28,19**	24,39
	1500 PLN and more	(16.43)	(7.69)	**31,54**	18,95
	Test χ^2 Pearsona	$\chi^2 = 47.04$; $df = 8$; $p < 0.001$			

Source: author.

respondents with primary (23.56%) and vocational (28.32%) education than average in the sample. Place of residence does not really distinguish– only those living in large towns are much less than the average (8.81%). This cluster is dominated by those with the lowest incomes (up to 1000 PLN per capita in the household).

The second cluster – 'from the province', 174 respondents (17.7%), also comprises those with a very low activity level ($\bar{x} = 3.55$). However, these perceive very few barriers. The only barrier that distinguishes this cluster is that associated with access to attractions. The cluster is dominated by men (58.96%), those in the oldest age group (55 or more), living in villages and small towns (up to 20,000 inhabitants) and with the lowest income (up to 750 PLN).

The third cluster – 'actives' (286 – 29.1%) are those with far greater activity, constrained mainly by a lack of time and the uninteresting exhibitions. The cluster is dominated by men (61.54%) and the relatively young aged up to 44. Almost half of the respondents (45.10%) with higher education are in this cluster and a significant number live in large towns (with a population of over 100,000). In this group are those with higher incomes (above 1000 PLN).

9. CONCLUSIONS

The aim of the research was to identify the level of attendance at visitor attraction activities, determine activity constraints and identify the factors.

The level of activity as measured in the study is extremely low: only one-third of the respondents reported fairly regular attendance (at least once a year) to a museum, zoo or botanical garden. However, this level is higher than the one assessed in a previous study conducted in 2000 by OBOP (16% of the respondents reported visiting a museum at least once a year). Yet the year 2000 study only investigated museum visits, which explains the significantly lower level of activity. However, the obtained data do not significantly differ from other European countries.

Similar activity levels have been found in the United Kingdom, with 28 to 37% visiting museums and 25 to 36% visiting zoological or botanical gardens and parks (DAVIES 2005). Interestingly, Lin (2006) found, in a study among citizens of Taipei (Taiwan), that as many as 67.7% of the respondents visited a museum at least once a year.

The most common constraints reported by respondents were lack of nearby attractions, lack of time, poor communication and high entrance fees. These barriers do not significantly differ from those pointed out in other studies on leisure activity (MCGUIRE 1984, GODBEY 1985, JACKSON 2005, JUN *et al.* 2008). This may result from the so-called constraint generalisation (MCCARVILLE & SMALE 1993, MANNELL & IWASAKI 2005): people generalise constraints influencing one type of leisure into other types. Those who live their lives in a hurry, who feel they lack time to engage in any leisure activity, will feel lack of time regardless of current needs, type of activity and opportunities arising.

By analysing the dependence of activity constraints on socio-demographic characteristics, it was observed that all the studied characteristics showed relationships with constraints and activity levels. A strong relationship was found between structural barriers (the tickets are too expensive, not in my neighbourhood, too troublesome to reach) with level of education, size of the place of residence and income. Opposite relationships were found between intrapersonal barriers (I'm too busy, I prefer spending time in a different way) and place of residence and household income. Similar relationships have been found by MC-CARVILLE & SMALE (1993), JACKSON & HENDERSON (1995), SCOTT & MUNSON (1994) as well as JUN *et al.* (2008). The level of structural constraints decreases with an increase in income, but, surprisingly, at the same time the level of intrapersonal constraints increases. The same pattern can be observed for education and size of place of residence. The perception of constraints changes with phase of the life cycle: for intrapersonal constraints (e.g. I am not interested) follows a U-shaped curve with a maximum for the youngest and oldest. There was no significant relationship between interpersonal barriers and visiting activity. Only women, aged 25-34, showed the existence of barriers and those were associated with having children.

The market segmentation produced in the course of this study may prove a useful tool in visitor attraction marketing, as it helped identify real and potential customers limited by similar constraints. Knowledge of these segments allows visitor attraction managers to develop diversified strategies targeted at specific market segments. The analysis demonstrated that three segments can be identified: one active segment and two inactive limited by various constraints.

The active segment (third cluster), mainly limited by the lack of time, is dominated by relatively young and well-educated individuals, living in large towns and having a high income. Their activity is above average thanks to their mobility, and constraints such as entrance fees do not limit them in any significant way. This segment can be targeted with a more demanding and ambitious offer and includes potential visitors to museums and art galleries. However, the higher level barrier *Always the same things to see* in this group indicates a strong need for offering a differentiated product by means of attractions and events, of which best example may be the regular 'Night of Museums'.

The **intrapersonal constraints** segment – first cluster – includes more than half of the respondents, mainly those not interested in visiting attractions, restricted by lack of time (real or imaginary) and high ticket prices. These are mostly the elderly, having just primary or vocational education and the lowest incomes. They could be the target market for such attractions as local fairs, festivals and local events, zoos and theme parks. These are attractions favouring a less demanding audience that provide many experiences and can arouse interest even among an unprepared audience.

The **from the provinces** segment (second cluster) is dominated by those mainly limited by attraction availability (poor communication). These are mainly the most poorly educated, living in the countryside (more than half of the respondents) or in small towns and having the lowest household income. It is extremely difficult to encourage them to visit attractions. This situation is often due to objective conditions, beyond the individual. They can be potential customers of local fairs and events held in small towns and villages, preferably admission free, events in regional museums or community centres. Since these individuals do not experience severe intrapersonal constraints (so they are interested in visiting), they can be potential partners for small, regional institutions implementing community activity strategies (KOTLER & KOTLER 1998, 2001).

Further research on the visitor attractions market should take into account the intensity of individual constraints (for instance measuring them on a multipoint Likert scale) and preferences related to various types of attractions, such as museums, amusement and theme parks, zoological and botanical gardens, fairs, events, etc. The model for visitor attraction attendance activity should, apart from preferences, activity and constraints, also include motivations, values and benefits gained through visiting specific types of visitor attraction.

BIBLIOGRAPHY

CRAWFORD D., GODEY G., 1987, Reconceptualizing barriers to family leisure, *Leisure Sciences*, 9, pp. 119-127.

CRAWFORD D., JACKSON E., GODEY G., 1991, Leisure constraints, *Leisure Sciences* 13, 4, pp. 309-320.

DAVIES A.J., PRENTICE R.C., 1995, Conceptualising the Latent Visitor to Heritage Attractions, *Tourism Management*, 16, 7, pp. 491-500.

DAVIES S., 2005, Still Popular: Museums and their Visitors 1994-2004, *Cultural Trends*, 14, 1, pp. 67-105.

GODBEY G., 1985, Nonuse of public leisure services: A model, *Journal of Park and Recreation Administration*, 3, 2, pp. 1-12.

JACKSON E.L., 2005, Leisure constraints research: overview of a developing theme in leisure studies, [in:] E.L. Jackson (ed.), *Constraints to leisure*, Venture Publishing, Inc, State Colledge, Pensylvania, s. 3-22.

JACKSON E.L., HENDERSON K.A., 1995, Gender-based analysis of leisure constraints, *Leisure Sciences*, 17, pp. 31-51.

JACKSON E.L., SEARLE M.S., 1985, Recreation Non-Participation and Barriers to Participation: Concepts and Models, *Society and Leisure*, 8, pp. 693-707.

JUN J., KYLE G., O'LEARY J., 2008, Constraints to Art Museum Attendance, *Journal of Park and Recreation Administration*, 26, 1, pp. 40-61.

KIEŁBASIEWICZ-DROZDOWSKA I., 2001, Zarys rozwoju refleksji teoretycznej nad problematyką rekreacji, [in:] I. Kiełbasiewicz-Drozdowska, W. Siwiński (eds.), *Teoria i metodyka rekreacji (zagadnienia podstawowe)*, AWF w Poznaniu, Poznań, pp. 9-25.

KOTLER N., KOTLER P., 1998, *Museum Strategy and Marketing. Designing Missions. Building Audiences. Generating Revenue and Resources*, Jossey-Bass Publishers, San Francisco.

KOTLER N., KOTLER P., 2001, Can Museum be All Things to All People? Missions, Goals, and Marketing's Role, *Museum Management and Curatorship*, 18, 3, pp. 271-287.

KUNICKI B.J., 1984, *Społeczne bariery rekreacji fizycznej*, Wyd. AWF, Warszawa.

LIN, Y.N., 2006, Leisure-A function of museums? The Taiwan perspective, *Museum Management and Curatorship*, 21, 4, pp. 302-316.

MANNELL R.C., IWASAKI Y., 2005, Advancing quantitative research on social cognitive theories of the constraint-negotiation process, [in:] E.L. Jackson (ed.), *Constraints to leisure*, Venture Publishing, Inc, State Colledge, Pensylvania, pp. 261-275.

MCCARVILLE R.E., SMALE B.J.A., 1993, Perceived constraints to leisure participation within five activity domains, *Journal of Park and Recreation Administration*, 11, 2, pp. 40-59.

MCGUIRE F.A., 1984, A factor analytic study of leisure constraints in advanced adulthood, *Leisure Sciences*, 6, 3, pp. 313-326.

NADIROVA A., JACKSON, E.L., 1999, *How do people negotiate constraints to their leisure? Results from an empirical study, Proceedings of the Ninth Canadian Congress on Leisure Research*, Acadia University, Wolfville, pp. 28-31.

SCOTT D., MUNSON, W., 1994, Constraints to park usage among persons who are economically disadvantaged, *Journal of Park and Recreation Administration*, 12, 4, pp. 79-96.

SEARLE M.S., JACKSON E.L., 1985, Socioeconomic variations in perceived barriers to recreation participation among would-be participants, *Leisure Sciences*, 7, 2, pp. 227-249.

SHAW S.M., HENDERSON K.A., 2005, Gender analysis and leisure constraints: An uneasy alliance, [in:] E.L. Jackson (ed.), *Constraints to leisure*, Venture Publishing, Inc, State Colledge, Pensylvania, pp. 23-34.

TIAN S., CROMPTON J., WITT P., 1996, Integrating Constraints and Benefits to Identify Responsive Target Markets for Museum Attractions, *Journal of Travel Research*, 35, pp. 34-45.

UM S., CROMPTON J.L., 1992, The Roles of Perceived Inhibitors and Facilitators on Pleasure Travel Destination Decisions, *Journal of Ravel Research*, 30, pp. 18-25.

WITT P.A., 1992, The Intersection of Benefits and Constraints, *Leisure Constraints Newsletter*, 9, pp. 5-6.

WITT P.A., GOODALE T.L., 1981, The relationships between barriers to leisure enjoyment and family stages, *Leisure Sciences*, 4, 1, pp. 29-49.

WOODSIDE A.G., LYSONSKI S., 1989, A General Model of Traveler Destination Choice, *Journal of Travel Research*, 27, pp. 8-14.

Małgorzata Durydiwka
University of Warsaw
Department of Tourism Geography and Recreation
mdurydiw@uw.edu.pl

THE TOURISM FUNCTION OF RURAL AREAS IN POMERANIA PROVINCE: DIVERSITY AND CHANGE

Abstract: The aim of this paper is to present the spatial diversity of the tourism function in the rural areas of Pomerania province and the changes which occurred in 1995-2013. The tourism function has been determined by means of two characteristics: the number of tourists using accommodation and the number of businesses registered in the REGON system in sections H or I. To quantify the tourism function a synthetic measure has been used according to a procedure by ZIOŁO (1973). Based on this, five levels of the development of the tourism function have been determined. The quantitative and spatial changes occurring in the development of the tourism function in rural areas have then been analyzed. Particular emphasis has been placed on the so-called tourism communes, i.e. those where the tourism function is at least at a 'moderate' level of development. For these communes, nine functional types have been determined, based on two characteristics (average duration of stay and share of year-round accommodation), changes which occurred in this respect in 1995-2013 have also been determined.

Key words: tourism function, rural areas, Pomerania province.

1. INTRODUCTION

The tourism function of spatial units constitutes an important research problem in the geography of tourism in Poland (KUREK & MIKA 2007, DEREK 2007, WŁODARCZYK 2009). There is increasing research on the tourism function of rural areas, this is to a large extent related to the perception of tourism as a factor in the socio-economic 'activisation' of these areas (DURYDIWKA 2012). At the same time, opportunities for the development of the tourism function in rural areas of Poland are estimated as being very large. I. SIKORSKA-WOLAK (2005) states that the development of the tourism function in rural areas is fostered by such features as a diversified landscape, retention of its natural state, large areas of forests and water, large areas legally protected, rich cultural heritage resources, unused accommodation resources, and vacationing traditions.

The aim of the present paper is to present the spatial diversity of the tourism function in rural areas of Pomerania province, as well as the changes which occurred in 1995-2013. This research goal, as formulated here, contains two elements which should be addressed: rural areas and tourism functions.

Rural areas are defined in various ways in the literature. In most definitions, the emphasis is put on their population density. Some definitions, however, take into account the structure of the economy, as a rule, these definitions stress the fact that in rural areas, it is the primary sector that dominates. It seems, however, that in times when so much attention is devoted to the multifunctional development of rural areas, such an approach is passé. For that reason, in this paper we use an administrative criterion in the determination of rural areas. Therefore, the areas taken into account are rural communes and rural parts of urban-rural communes. The use of the smallest territorial units results, to a large extent, from factual premises. It is the smallest territorial units that are most strongly related to the demand processes and the supply of tourism services (AIREY & BUTLER 1999, NAWROT & ZMYŚLONY 2009). Pragmatic considerations were another important reason for their use: the research was undertaken based on statistical data from GUS, hence the use of the administrative criterion resulted from the accessibility of statistical data.

The tourism function is understood as any tourism-oriented socio-economic activity in a given spatial unit (MATCZAK 1989, KUREK & MIKA 2007). As noted by A. SZWICHTENBERG (2006: 191): "the importance of the tourism function among other economic activities

in a given commune is difficult to determine". A reliable estimate could result from a precise analysis of employment in individual sectors of the economy, of revenues from those activities and from capital investments (SZWICHTENBERG 2006). However "it is currently not possible from statistics collected by the state and local government (...) to calculate the indices determining the hierarchy of individual economic functions in a commune. In particular, there is a lack of such indices for the estimation of the potential of the tourism economy, which consists not only of tourism goods and services, but also of para-tourism, in statistics related to trade and services, transportation and communication, public utilities etc." (SZWICHTENBERG 2006: 191). That is why in the present paper the author tries to show the level of development of the tourism function in rural areas of Pomerania province leaving aside other economic functions. To describe the tourism function the following two characteristics have been chosen: the occurrence of both tourism itself and of tourism-related services. This selection is in agreement with the notion of the tourism function, according to which it is tourism itself that generates the tourism function, and its growing dimension stimulates the development of tourism-oriented services (KUREK & MIKA 2007). Besides, tourism and tourism management are the two measures of the tourism function which are most often used and discussed in the literature (WILUŚ 1997).

2. METHOD OF DETERMINATION OF THE TOURISM FUNCTION

To determine tourism functions, two characteristics (empirical measures) have been chosen. The first one is the number of tourists using accommodation facilities, the most important feature demonstrating the existence of a tourism function in a given area. The second one, dealing with tourism-related economic activities of the local community, and therefore with the development of tourism-related services, is the number of businesses registered in the REGON system in sections H[1] or I[2]. Businesses classified in these sections include: 1) rental of space for short-term premises with or without catering by hotels, motels, campsites, pensions, recreation houses, private lodging , farms, holiday homes, boarding houses, student hostels and other facilities not classified here, as well as 2) catering by restaurants, bars, canteens, cafeterias and other businesses which prepare and provide meals and drinks to outside customers, not including sale through vending machines (www.stat.gov.pl/klasyfikacje/pkd_04/pkd.htm).

To quantify the tourism function, a synthetic measure has been used (after the procedure by Zioło 1973):

$$F_t = \frac{\sum_{j=1}^{m} x'_{kj}}{m}$$

where:

x'_{kj} – normalized jth empirical measure of the kth spatial unit,

$\sum_{j=1}^{m} x'_{kj}$ – the sum of normalized measures in the kth spatial unit,

M – the number of normalized measures.

The measure applied shows the degree (size) of share of individual spatial units (communes) in the total structure, since the sum of the synthetic measures for the entire area analyzed is equal to 100. According to the author, the advantage of this measure, apart from its simple and clear construction, is that it allows "the obtaining of a synthetic value out of several empirical measures" (ZIOŁO 1973: 107).

Correct further statistical procedures are possible only when all the descriptors have the same character. For that reason, it was necessary to standardize them to a form of normalized data (measures). The normalization of empirical measures has been performed by determining their percentage share in individual spatial units. Hence, the procedure applied was based on quotient mapping.

Based on the value of the synthetic measure F_t five levels (classes) of tourism function development have been determined. It should be added here that when determining the limits of class intervals, the values of the median (*Me*) and standard deviation (*SD*) have been taken into account. Communes in which the phenomenon does not occur (F_t = 0), that is in which there is no tourism function, have been called communes with zero level of development. The limits of the consecutive levels of the tourism function development have been determined as follows:

- first level - from 0 to *Me*,
- second level - from *Me* to (*Me* + ½ *SD*),
- third level - from (*Me* + ½ *SD*) to (*Me* + *SD*),
- fourth level - above (*Me* + *SD*).

It should be added that all these intervals are exclusive.

The research has been based on statistical data from the GUS Database of Local Data (*Bank Danych Lokalnych Głównego Urzędu Statystycznego, BDL GUS*) for two years: 1995 and 2013. The analysis encompassed 98 rural communes and the rural parts of urban-rural communes[3] in Pomerania province. To order the territorial units analyzed with respect to the

level of the tourism function development, a spatial classification has been used, understood as "a division of the Earth's surface into parts, that is into spatial classes, which takes into account a determined criterion of division" (PARYSEK 1982: 141).

3. DIVERSITY OF THE TOURISM FUNCTION IN THE RURAL AREAS OF POMERANIA PROVINCE

Using a synthetic measure of the level of tourism function development (F), five levels (classes) have been determined, with level 0 consisting of communes in which Ft is zero, hence where the tourism function has not been developed. Pomerania province is characterized by above-average occurrence of natural and cultural amenities, resulting "from its regional and local identity drawing on the heritage of Kashubia, Kociewie, Powiśle, Żuławy and other parts of the region, as well as from maritime and historical traditions" (http://www.midwig.pomorskie.eu/turystyka.html). Thanks to this Pomerania province is one of the main areas of tourism reception in Poland. This is proven by the absence of communes in which there is no tourism function in 2013, with only two such communes in 1995. Level 1 can be described as having a 'weak' tourism function. Communes for which the index Ft varied from 0 to 0.4056 in 1995 and from 0 to 0.3676 in 2013 are found in this class. Their number has remained almost constant, but is significant on the scale of the entire province. In 1995 there were 47, constituting 48.0% of all rural areas of the province, while in 2013, there were 49, constituting 50.0%. Level 2, a 'moderate' tourism function, is represented by the communes for which the index Ft varies between 0.4057 and 1.6308 in 1995 and between 0.3677 and 1.2493 in 2013. In this class interval a marked decrease in the number of communes was noted: from 35 to 28, that is from 37.7% to 28.6%. The class interval representing a 'well developed' tourism function (level 3) is the most stable as regards number. In 1995, a 'well developed' tourism function was characteristic of those communes for which the index Ft had values from 1.6309 to 2.4504, they constituted 6.1% (6 communes) of all analyzed, while in 2013 a 'well developed' tourism function was characteristic for 7 (7.1%). For these communes, however, this index has slightly lower values than in 1995: from 1.2494 to 2.1311. The largest increase in the number of communes in the period analyzed was noted in the class interval representing a 'very well developed' tourism function (level 4). Their number has increased from 8 (8.2%) to 14 (14.3%), with the best having a value of the index Ft exceeding 2.4504 in 1995 and 2.1311 in 2013.

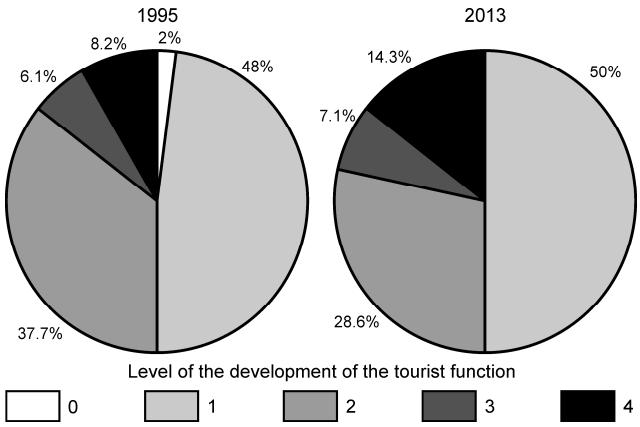


Fig. 1. Communes according to level of tourism function development (%) (levels as in the main text)
Source: author based on BDL GUS

Therefore, on the scale of Pomerania province, for the variables used and the limits of the class intervals presented above, two fundamental changes in the level of tourism function development can be observed in 1995-2013: the number of communes with a 'moderate' tourism function decreased markedly, while the number of those with a 'very well developed' function increased.

These changes are particularly apparent spatially (Fig. 2). The tourism function is preserved or strengthened in seaside communes (Ustka, Krokowa, Stegna, Sztutowo, Łeba, Puck and Kosakowo) and in communes situated around the Tri-City agglomeration (including Gniewino, Wejherowo, Żukowo, Luzino, Przywidz, Somonino, Kolbudy and Pruszcz Gdański), as well as around Słupsk (Słupsk and Kobylnica). It should be added that most of those communes are rural areas characterized by very attractive natural landscapes, thanks to varied surface features and, above all, thanks to the seashore and lakes (DURYDIWKA 2008). On the one hand, therefore, these are areas situated directly at the seaside, in which the tourism function was a natural result of development, by a gradual driving out of agricultural or fishing functions. On the other hand, a large part of these areas, also of those situated in the vicinity of the Tri-City conurbation, are lake areas (Kashubian Lake District) which are becoming increasingly popular among tourists, both those living in Tri-City and those arriving from various regions of Poland. These areas are gradually becoming more intensely developed for tourism. The tourism function is particularly pronounced in the part of the Kashubian Lake District called "Kashubian Switzerland"[4], although it should

be kept in mind that this region was penetrated already between the world wars, for instance during themed excursions "Get to know the beauty of the Kashubian Switzerland".

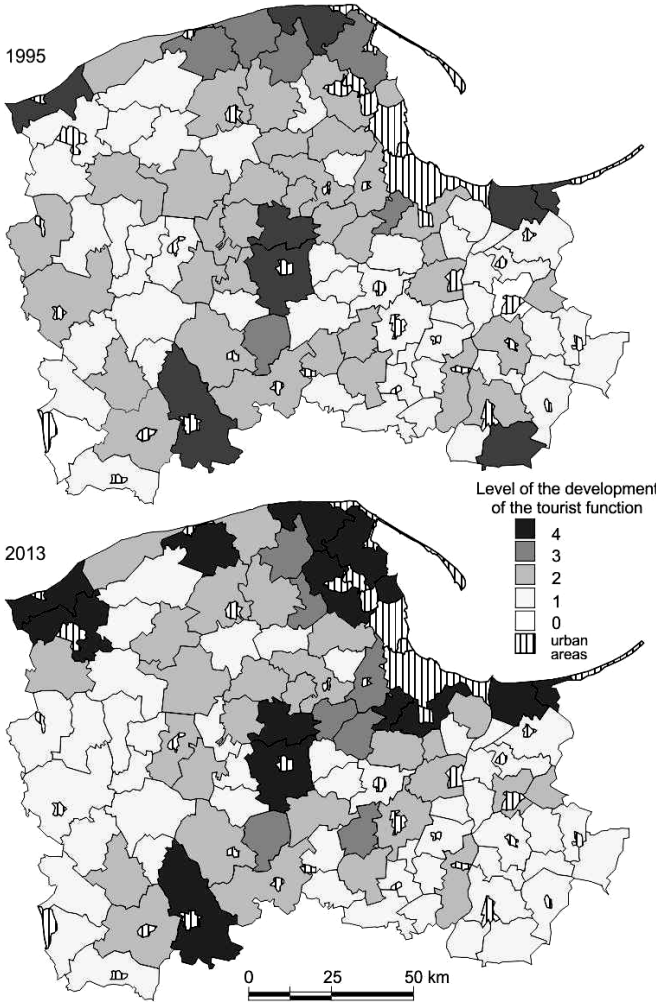


Fig. 2. Level of development of the tourism function in rural areas of Pomerania province in 1995-2013 (levels as in the main text)
Source: author based on BDL GUS

At the same time, however, in communes with less attractive natural landscapes, a certain weakening or stagnation of their low level of development can be noted. Such are, in particular, communes situated in the western part of the province, hence partly also in the lake areas (e.g. Miastko, Tuchomie and Lipnica), and partly on areas without or with few lakes (e.g. Dębnica Kaszubska, Kępice, Kołczygłowy, Czarne and Debrzno). This tendency can also be observed in the south-eastern part of the province, in particular in the region of Żuławy Wiślane (e.g. Nowy Dwór Gdański, Ostaszewo and Lichnowy), which for years had been identified as exclusively agricultural. In recent years, however, attempts have been made to 'activise' these areas through tourism, at the very least, by including them in the regional network of tourism trails such as Historical Monuments of Żuławy Wiślane and Powiśle, or the Mennonite Trail, or through the introduction of additional attractions such as the Żuławy narrow-gauge railway[5].

4. FUNCTIONAL TYPES OF TOURISM COMMUNES IN POMERANIA PROVINCE

Using the notion of spatial types (LISZEWSKI 1995), we call tourism communes those where the tourism function is at least at a' moderate' level of development, that is those for which the index of the tourism function level F_t exceeded 0.4056 in 1995 and 0.3676 in 2013. Their number (49) did not change from 1995 to 2013, they constitute therefore 50.0% of all communes of the Pomerania province. Nonetheless,

Table 1. Criteria determing functional types of tourism communes

Type	Name	Average duration of stay	Year-round overnight accommodation (%)
W1	Area with recreational (vacation) tourism function, used mostly seasonally	8 days and longer	up to 25
W2	Area with recreational (vacation) tourism function, partly used year-round	8 days and longer	from 25 to 75
W3	Area with recreational (vacation) tourism function, used mostly year-round	8 days and longer	over 75
S1	Area with tourism function related to medium-term stays, used mostly seasonally	4-7 days	up to 25
S2	Area with tourism function related to medium-term stays, partly used year-round	4-7 days	from 25 to 75
S3	Area with tourism function related to medium-term stays, used mostly year-round	4-7 days	over 75
K1	Area with function of short-term active stay, used mostly seasonally	1-3 days	up to 25
K2	Area with function of short-term active stay, partly used year-round	1-3 days	from 25 to 75
K3	Area with function of short-term active stay, used mostly year-round	1-3 days	over 75

Source: M. DURYDIWKA (2012, p. 233).

ten communes (Dębnica Kaszubska, Kępice, Miastko, Parchowo, Lipusz, Linia, Kaliska, Sztum, Kwidzyń and Gardeja), due to a distinct weakening of their tourism function, lost their status, while ten others (Słupsk, Kobylnica, Potęgowo, Luzino, Bytów, Stara Kiszewa, Trąbki Wielkie, Cedry Wielkie, Malbork and Starogard Gdański), thanks to the development of their tourism function, gained this status. More significant changes have been observed as regards the character of the tourism function.

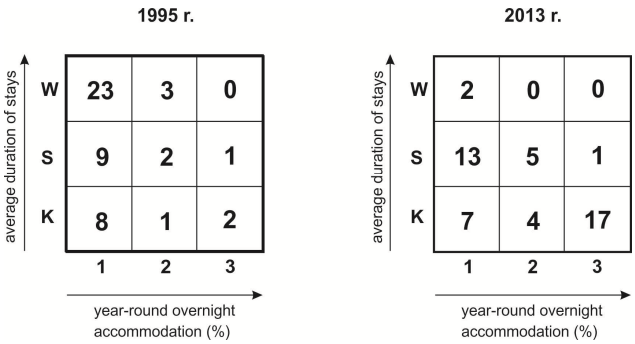


Fig. 3. Tourism typology matrices for rural areas (communes) in Pomerania province (notation as in Table 1)
Source: author

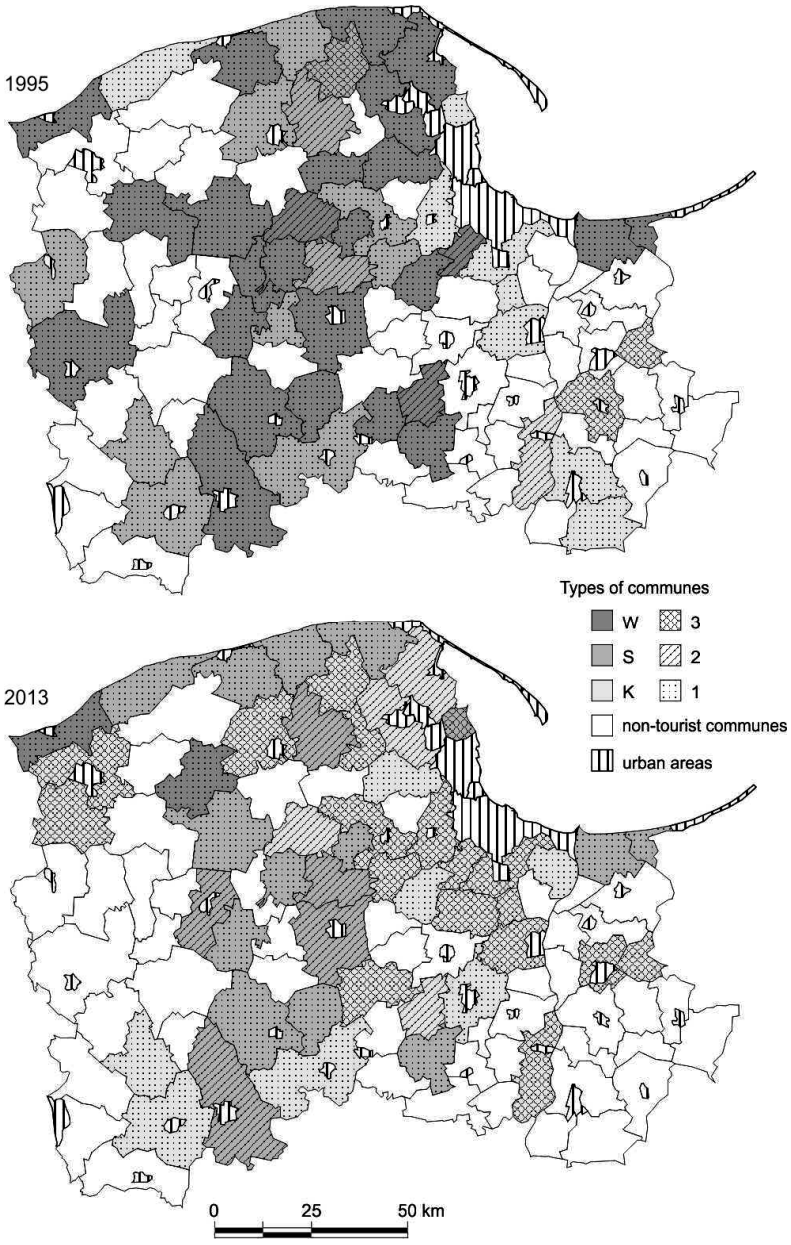


Fig. 4. Types of tourism communes according to duration of tourism stay and share of year-round accommodation in 1995-2013 (notation as in Table 1)
Source: author based on BDL GUS

It has been assumed that the features that explain the functional diversity of tourism communes are the average duration of tourism stays in a given area (which indirectly indicates the character of those stays) and seasonality of accommodation (as a feature that represents the duration of tourism use during the year). As a result, nine types of tourism commune in rural areas have been determined (Table 1).

During the period 1995-2013, the number of rural areas with a recreational / vacationing function, i.e. related to longer stays (type W) markedly decreased. In 1995 there were 26 such communes, while in 2013, only two. On the other hand, the number of communes related to shorter stays, over the weekend (type K), increased from 11 in 1995 to 28 in 2013. This reflects a more general regularity observed not only in Polish society, of a shortening of duration of vacation stays.

Changes also occurred as regards the seasonality of tourism use in rural areas. This is demonstrated by a marked decrease in the number of communes where the share of year-round overnight accommodation was lower than 25% (type 1) and an increase in those where the share exceeded 75% (type 3). To be specific, in 1995-2013 in Pomerania province, the number of type 1 communes decreased from 40 to 22, while the number of type 3 communes increased from 3 to 18.

As regards functionality, not only quantitative, but also spatial changes have been observed in tourism communes. A significant part of those with a recreational function (type W) have been transformed into areas whose function is related to medium-term (type S) or short-term stays (type K), with seaside communes retaining their strictly seasonal character (type 1). A specific exception to this rule is the commune of Puck, which underwent a change from W1 into S2. On the other hand, communes situated around the Tri-City have been transformed, to a large extent, into areas used predominantly for year-round tourism (type 3), which is related to the development of individual vacation accommodation and of various forms of weekend tourism. This is the case, among others, in such communes as Kosakowo, Żukowo, Kolbudy, Pruszcz Gdański, Trąbki Wielkie and Pszczółki. Besides, the development strategies of many of these communes stress the necessity of further integration with Tri-City, for instance through creating recreation and accommodation facilities. Year-round use is characteristic also for communes in the vicinity of Słupsk.

In many lake district communes, on the one hand, a tendency to transformation related to the shortening of the tourism stays can be observed, and on the other hand, to longer use (over the whole year) of the area for tourism. These communes have been transformed most often from type W1 into type S1 (e.g. Sulęczyno, Chmielno, Studzienice) or from type S1 into type K3 (e.g. Kartuzy, Somonino, Luzino).

5. SUMMARY

In the period under investigation a strengthening of the level of the tourism function development in many rural areas of the province can be observed. Communes whose tourism function is at least a 'moderate' level of development (so-called tourism communes) show a fairly distinct correlation with areas which have important tourism amenities, especially of a natural character. It can therefore be stated that the development of the tourism function is, to a large extent, conditioned by the natural environment resources and, to a smaller extent, by cultural resources. Of essential importance for the development of the tourism function in rural areas of Pomerania province has been the development of cities and strong administrative and socio-economic ties with the rural areas surrounding them, such as Gdańsk, Gdynia, Sopot and Słupsk. As a result, in a large part of the rural areas situated in their vicinity a tourism function was clearly formed. A significant part of those rural areas situated there, however, are areas with high natural and cultural amenities. In the case of this region, therefore, the development of the tourism function often resulted from the superimposition of two factors: tourism amenities and the vicinity of large cities.

At the same time one should stress that in the tourism communes analyzed here, marked changes of functional character have been observed, of greatest importance among them is a six-fold increase in the number of communes used for tourism purposes all year round. And this, in turn, has an important impact on the improvement of the socio-economic situation of these communes.

FOOTNOTES

[1] For 1995.

[2] For 2013.

[3] The author uses the terms "rural areas" and "communes" interchangeably. It should be kept in mind, however, that the term "commune" in this paper refers only to rural communes and to the rural parts of urban-rural communes.

[4] This term was used for the first time at the end of the 19th century in German tourist guidebooks for the vicinity of Kartuzy. In 1913, the term was used by Aleksander Majkowski, Kashubian writer and activist, in the tourist guidebook entitled *Zdroje Raduni* (Sources of the Radunia river) (http://www. szwajcaria-kaszubska.pl, http://literat.ug.edu.pl/remus/0101.htm).

[5] One of the oldest narrow-gauge railways in Poland, linking Nowy Dwór Gdański with seaside towns along the Vistula Spit (http://pomorskie.travel/Odkrywaj-Na_szlaku).

BIBLIGRAPHY

AIREY D., BUTLER R., 1999, Tourism at the Regional Level, [in:] *Future-Oriented Tourism Policy*, AIEST, 41, St. Gallen, pp. 71-90.

DEREK M., 2007, Gmina turystyczna – ujęcie metodologiczno-metodyczne, [in:] W. Kurek, R. Pawlusiński (eds.), *Studia nad turystyką. Prace ekonomiczne i społeczne*, Uniwersytet Jagielloński, Instytut Geografii i Gospodarki Przestrzennej, Kraków, pp. 27-32.

DURYDIWKA M., 2008, Tourism classification of rural areas in Poland (on the example of the Pomeranian region). A methodological proposal, [in:] J. Makowski (ed.), *On the social, economic and spatial transformations of the regions*, University of Warsaw, Faculty of Geography and regional studies, Warsaw, pp. 207-219.

DURYDIWKA M., 2012, *Czynniki rozwoju i zróżnicowanie funkcji turystycznej na obszarach wiejskich w Polsce*, Uniwersytet Warszawski, Wydział Geografii i Studiów Regionalnych, Warszawa.

KUREK W., Mika M., 2007, Turystyka jako przedmiot badań naukowych, [in:] W. Kurek (ed.), *Turystyka*, Wyd. Naukowe PWN, Warszawa, pp. 11-49.

LISZEWSKI S., 1995, Przestrzeń turystyczna, *Turyzm*, 5, 2, 87-103.

MATCZAK A., 1989, Problemy badania funkcji turystycznej miast Polski, *Turyzm*, 5, pp. 27-39.

NAWROT Ł., ZMYŚLONY P., 2009, *Międzynarodowa konkurencyjność regionu turystycznego. Od programowania rozwoju do zarządzania strategicznego*, Wydawnictwo "Proksenia", Kraków.

PARYSEK J.J., 1982, *Modele klasyfikacji w geografii,* Wyd. UAM, Poznań.

SIKORSKA-WOLAK I., 2005, Rola turystyki w zrównoważonym rozwoju obszarów wiejskich, [in:] B. Sawicki, J. Bergier (eds.), *Uwarunkowania rozwoju turystyki związanej z obszarami wiejskimi*, Wyd. PWSZ im. Papieża Jana Pawła II, Biała Podlaska, pp. 72-78.

SZWICHTENBERG A., 2006, *Gospodarka turystyczna polskiego wybrzeża*, Wyd. Uczelniane Politechniki Koszalińskiej, Koszalin.

WILUŚ R., 1997, *Rozwój funkcji turystycznej w dolinie rzeki Warty na odcinku od Działoszyna do Uniejowa*, Łódzkie Towarzystwo Naukowe, Łódź.

WŁODARCZYK B., 2009, *Przestrzeń turystyczna. Istota, koncepcje, determinanty rozwoju*, Wyd. Uniwersytetu Łódzkiego, Łódź.

ZIOŁO Z., 1973, Analiza struktury przestrzennej i form koncentracji przemysłu województwa rzeszowskiego w świetle wybranych mierników, *Folia Geographica, Series Geographica-Oeconomica*, 6, pp. 95-116.

http://literat.ug.edu.pl/remus/0101.htm; 3.04.2015.

http://pomorskie.travel/Odkrywaj-Na_szlaku; 6.04.2015.

http://www.midwig.pomorskie.eu/turystyka.html; 3.04.2015.

http://www.stat.gov.pl/klasyfikacje/pkd_04/pkd.htm; 15.02.2015.

http://www.szwajcaria-kaszubska.pl; 3.04.2015.

Zygmunt Kruczek
University of Physical Education in Cracow
Faculty of Tourism and Recreation
Chair of Natural Environment Sciences
Geography of Tourism Department
zygmunt.kruczek@awf.krakow.pl

ANALYSIS OF VISITOR ATTENDANCE AT POLISH TOURISM ATTRACTIONS

Abstract: Tourism attractions are an important segment of the tourism market; they play an immense role in shaping the geography of the tourism movement. In spite of that studies devoted to tourism attractions are undertaken relatively rarely. In the present article, the author presents the results of research devoted to attendance at various types of tourism attraction in Poland, along with an attempt to identify the factors determining their popularity which is measured by the number of visitors. Among others, the author distinguishes the so-called flagship attractions which are of importance for the identity and general image of individual regions.

Key words: tourism attractions, attendance.

1. INTRODUCTION

Tourism attractions are a key element of the tourism economy as they stimulate an interest in travelling to a given tourism destination and they ensure satisfaction to those who visit these places. They are a magnet which attracts tourisms to a given region and at the same time, they stimulate a demand for other tourism services. Tourism attractions play an immense role in shaping the geography of the tourism movement; they enable identification of places and regions; they define their identity and public image.

No complex evaluation of tourism attractions has as yet been carried out in Poland. Therefore, an urgent research task which confronts us today is to carry out a stock-taking of tourism attractions in Poland for the purpose of assessing the full potential of the tourism sector[1]. The aim of the analysis carried out by the author is to establish attendance figures in the Polish tourism attractions.

In the article, the author presents the results of research on tourism attendance in various types of attractions together with an attempt to identify the individual factors determining their popularity, measured by the number of visitors. In order to carry out the research in question, it was necessary to compile a base of tourism attractions. The author made use of a list of attractions which constitutes a component element of the Web Based System of Tourism Information (ISIT), which can be located at the following web address: polska.travel.pl. The database of tourism attractions had been verified and updated on the basis of a review of web sites associated with tourism attractions as well as on the basis of opinions of the regional tourism organizations and local government. Regional catalogues of tourism attractions and catalogues of tourism products had also served as a source of information.

In the study the author has made use of the secondary data concerning attendance at tourism attractions, gathered in the course of the so-called desk research. The main sources of information here included publications released by Statistical Offices, reports based on research studies on tourism conducted in individual provinces, reports from the activity of tourism venues, interviews with managers of specific attractions and attendance estimates in the case of a lack of credible data in the existing sources. The biggest difficulty proved to be an attempt to obtain specific information from Statistical Offices concerning attendance, in all likelihood due to data protection legislation. In such instances, information concerning attendance had been gathered *via* e-mail and telephone. Yet the effectiveness of this method

proves to be limited, as merely around 30% of the addressees respond to requests to send the required data. The managers of amusement parks, thematic parks, ropes courses as well as water parks, generally refuse to provide information concerning attendance, quoting an argument that this type of information constitutes a trade secret.

Tourism attractions are a fundamental element of the tourism product. In the present paper, the author has adopted a product-based definition of a tourism attraction and has suggested a classification which takes into consideration the needs of the tourism market. A ranking of attractions, based on the degree of attracting tourists in respective thematic groups, has been carried out.

The study also takes into consideration the regional aspect, by pointing to the saturation rate of individual regions with tourism attractions, as well as to the tourism generated by them. The author draws attention to the so called flagship attractions which are important from the point of view of creating an image of the region, as well as those which have a large potential for development.

2. PRODUCT APPROACH TO TOURISM ATTRACTIONS

The term "tourism attraction" is difficult to define for a number of reasons, for example until now, the number of visitors that are necessary to be able to regard a given venue or place as a tourism attraction, has not been precisely defined. Due to the rather complex character of the entire sector of attractions, the principles of typifying and classifying attractions are complicated.

The term "tourism attraction" had first been introduced into specialist literature by E. COHEN (1972). In his sociological treatise entitled *Towards a Sociology of International Tourism* he declares that the main goal of mass foreign tourism is visiting tourism attractions. He divides attractions into real ones, which are able to attract tourists due to their specific features, and artificial ones which have been specially "created" for tourisms. Initially, tourism attractions were defined as '*anything that might interest the tourists*' (LUNDBERG 1985) or as *'characteristic and often unique places, such as e.g. natural environment or a historical monument, or else events such as festivals or sports competitions*' (GOODALL 1990). Other authors (LEW 1974, DAVIDSON 1996, LEIPER 1990, RICHARDS 2002), defined tourism attractions in much the same way. N. LEIPER (1990), on the other hand, introduces into his conception the notion of markers which motivate tourists to undertake a particular journey.

A sociological interpretation of the term is suggested by D. MCCANNELL (1996), who is of the opinion that a modern society itself creates attractions that correspond to its specific needs. Similarly P.L. PEARCE (1998), as well as J. URRY (2007) suggest that '*attractions are nothing else but places and people that are of interest to tourists'*. In English language sources, tourism attractions are often referred to as *visitor attractions* – or attractions for visitors (SWARBROOKE 1995), which suggests that attractions are being addressed not only to tourists, but also to the local community.

Tourism attractions are a complex phenomenon which is defined in various and diverse ways in the literature. Without claiming to have come up with a universal definition, it seems that on the basis of the terminological overview, it is only sensible to refer the concept of attractions to their function. In the light of the above, one may conclude that tourism attractions are (KRUCZEK 2011):

> *all constituent elements of the tourism product (positive features of the place, as well as events, venues and authentic products of higher culture) designated as unique and having the ability to attract tourists and making them choose a particular area, rather than a different one. Combined with the tourism services, the attractions jointly make up what is known as a tourism product.*

The above definition renders both the very nature of attractions understood as unique and valuable venues, distinguished by the addition of a designate and attracting tourists in accordance with the etymology, and emphasizes the ability of the attractions to create a tourism product.

Generally, in the literature the attractions are divided into four major groups as proposed by J. SWARBROOKE (1995):

1) **natural tourism attractions** whose value is associated with the physical characteristics of the natural environment, e.g. beaches, mountains, caves, lakes, rivers and forests;
2) **works created by man**, but for a purpose other than attracting tourists which over time became tourism attractions in themselves, e.g. prehistoric sites, buildings associated with famous people, palace and garden complexes, industrial sites, sacred buildings;
3) **places designed as tourism attractions and built from scratch,** e.g. amusement parks, casinos, spas, safari parks;
4) **cultural events,** sports contests, religious events, festivals, Olympic games etc.

What is also interesting from the point of view of research devoted to the issue of attendance in tourism attractions is the division into paid and free attractions (YALE 1990). For the records revealing the numbers of tickets sold or else free entrance passes enable one to

define quite precisely the attendance volume in these attractions.

In the classification of tourism products, some researchers (KACZMAREK, STASIAK & WŁODARCZYK 2005) distinguish such products as an event, venue, trail and area. The latter categories have their counterparts in the classification of tourism attractions (SWARBROOKE 1995), thus following the way of thinking represented by the above-mentioned, we may treat the above products as "products – tourism attractions[2]. As an example of a "product–attraction", J. SWARBROOKE (1995) quotes an amusement park, where one deals with concrete facilities (such as e.g. a roller coaster) and emotions which accompany the rides. One may also treat this "product-attraction" as an experience which includes the phases of planning, travel, participation and finally recollection.

3. ATTENDANCE AT POLISH TOURISM ATTRACTIONS

During research conducted in 2014, information obtained from the managers of as many as 364 attractions, were analyzed (or else estimates had been made on the basis of the available sources). The time-span for gathering the information was limited to 2011-13. By far the biggest number of attractions were classified as belonging to group II, i.e. cultural heritage venues; the latter had originally served other purposes, but had subsequently changed their function (85%); the above group also included museums (216). In second place, there were natural sites (9.5%) – chiefly national parks, and third – events (around 4%). The smallest part was made up of amusement parks which in the majority of cases refused to provide information concerning visitor attendance figures (2%).

3.1. NATURAL ATTRACTIONS

Out of a total of 33 natural attractions, the majority were located in the Małopolska (Lesser Poland), Dolnośląskie (Lower Silesia) and Podlaskie provinces. Among them, one can find numerous national parks, nature reserves and monuments of nature.

The Polish national parks are visited by more than 10 million tourists annually. The highest was in the Tatra National Park which is visited by nearly 3 million tourists each year; then Karkonoski National Park – visited by 2 million; in third place is Woliński national park which is visited by around 1.5 million. 60 % of all visitors to national parks pay a visit to one of these three parks. On the other hand, the lowest attendance rates are in the Narwiański (25 000) and Poleski (28 000) National Parks. Among the factors which exert a big influence on the tourism attractiveness of national parks, above all their recreational, specialist, as well as scenic value ought to be mentioned; their geographical situation in relation to the centers generating tourism (big urban agglomerations), should also be taken into consideration.

The biggest problem associated with taking advantage of many of the national parks for tourism purposes is the excessive attendance of visitors. Excessive numbers concentrated within the area of delineated visitor trails, poses a threat to the natural environment (noise, pollution, anthropogenic impact on the environment etc.). It is the small national parks with an established position and renown, situated in the vicinity of big urban agglomerations that are in the worst situation. The highest attendance figures occur in the Karkonoski National Park (over 35 000/km^2), the Pieniński NP (over 32 000/km^2) and in the Ojcowski NP (18 300/km^2). The vast masses of people moving across the tourism trails of these parks create numerous problems within an area of environment protection. An equally serious, though slightly lesser problem of excessive attendance can be found in the Tatra NP (a sanctuary of Polish mountain environment) and the Wielkopolski NP (the latter one operates in fact as a suburban park for the city of Poznań), both of which have a slightly different character. The Bison Enclosure in the Woliński NP is also characterized by an excessively high number of visitors (over 100 000).

Another group of frequently visited natural attractions are caves. Among the latter, the highest attendance figures are to Łokietek Cave in Ojców (over 92 000), the Bear Cave in Kletno (over 80 000) and the Dark Cave in Ojców (58 000).

3.2. ATTRACTIONS ASSOCIATED WITH CULTURAL HERITAGE

Nearly 300 venues have been classified as belonging to this category of attraction; among them, there are monuments of architecture, technology, archeology, as well as military buildings and fortifications. In this group one finds both castles (used as museums or hotels, or else in a state of permanent ruin), as well as palaces and manor houses. Within this group, are monuments on the UNESCO world heritage list (14 entries, 28 venues). The latter include, among others, the urban town plans of Krakow, Torun, Zamość, Warsaw, fortifications (Malbork), sacred buildings (wooden Orthodox churches and Catholic churches in the Carpathians, churches of Peace in Lower Silesia), one landscape park on the Polish-German border and a landscape-pilgrimage park in Kalwaria Zebrzydowska. A sizable group is also made up of sanctuaries

and shrines; unfortunately the Main Statistical Office and the Church Statistical Institute only provide attendance rates for the shrines of the Catholic Church.

In the category of "castles", the biggest attendance rates have been recorded in the case of the Wawel castle; the branches of the State Art Collections on Wawel Hill were visited by 1.25 million people in 2013. However many tourists visiting Wawel limit themselves to a walk round the castle courtyard and surveying the city panorama, as well as a visit to Wawel cathedral. Without carrying out field studies, it is impossible to give a precise estimate of the total number of visitors to such attractions as castles, where admission is ticketed to only some of the venues.

At the same time, the Royal Castle in Warsaw was visited by 600 000 people, i.e. 50% less than the Wawel Castle. The castle in Malbork was in third place (418 000) followed by the castle in Książ (244 000), Niedzica (224 000), Ogrodzieniec (128 000), Chęciny (118 000) and Kórnik (62 000).

Greater attendance is definitely recorded in the case of park and palace complexes, chiefly due to the fact that the management of these venues incorporates into total number of visitors also those persons who decide exclusively to take a stroll in the park. An absolute leader in this category is the Palace in Wilanów with its gardens and the accompanying venues (e.g. Poster Museum), where attendance exceeds 2.8 million people. The park and palace complex in Łazienki in Warsaw, with its 2.1 million visitors, is not far behind. Attendance figures in the case of the remaining palaces – Łańcut (319 000), Pszczyna (171 000), Nieborów (81 000) or Kurozwęki (93 000) – are much more modest.

Among monuments of technology, it is the Salt Mine in Wieliczka, with its underground Tourism Trail that takes the lead, with the attendance of 1.2 million visitors in 2013. The Salt Mine in Bochnia is far behind with its attendance of 150 000, in the comparable period. Both these venues share the same entry on the UNESCO list of world heritage monuments obtained in 2013. The Museum of Mining and Metallurgy in Złoty Stok, together with the local Gold Mine – attract jointly 175 000 tourists annually. Whereas the Guido Mine, together with the mining museum "Królowa Luiza" /Queen Louise/ declares visitor attendance of 120 000. Next is the Historic Silver Mine and the Museum of Steam Engines in Tarnowskie Góry (61 000), followed by the underground tourism trail and museum in Nowa Ruda (36 000). The recently opened Mediaeval Technology Park in Złoty Stok has attracted 45 000 visitors. The unique Striped Flint Mine – Krzemionki was visited by 35 000 tourists, the Salt Mine in Kłodawa records 27 000, whereas the Chełm Chalk Mine around 20 000.

In the inventory of attractions, we find far fewer archeological venues. The most attractive in this category is Biskupin. The local archeological reserve is visited by over 166 000 tourists annually and the cyclical event known as the Archeological Festival records attendance at the level of 30-50 000 spectators and participants. The archeological site in Trzcinica, known as Karpacka Troja /Carpathian Troy/, has lower attendance figures than Biskupin (between 40 and 60 000). The archeological reserve, Kamienne Kręgi /Stone Circles/ in Odry and Węsiory, attracts only 7 000 visitors.

The lighthouses situated along the Baltic coast enjoy considerable popularity. They make the holiday by the sea more varied and diversified, particularly in cases of bad weather. The lighthouse in Rozewie (102 000) is definitely the leader in this category, outdistancing considerably the lighthouses on the Hel peninsula (54 000), in Krynica Morska (43 000) and Gąski (30 000).

Shrines are another category subdivided in respect of their range and impact into international, national and supra-regional. The leading six which attract pilgrims in Poland are Częstochowa (4 million), Kraków-Łagiewniki (2 million), Zakopane–Krzeptówki (2 million), Kalwaria Zebrzydowska (1.2 million) and Licheń (1.1 million). The shrines in Niepokalanów and Piekary Śląskie also attract over 0.5 million pilgrims annually.

Without a doubt, the most numerous group of attractions are the museums; data concerning visitor attendance rates at 212 museum venues (including museum branches, often regarded as separate tourism attractions; e.g. the Schindler's Factory Museum is a branch of the Krakow Historical Museum) had been gathered.

From the generally accessible data published by GUS[3] (Main Statistical Office), it can be learnt that visitor attendance rates at Polish museums have been systematically growing in recent years. Following a crisis which occurred in the years 1989–92, when visitor numbers in Polish museums dropped to the lowest level in decades, a systematic increase in visitor numbers is being found. Yet it was only in the 2011 that a record attendance level from before the transformation of 1989 was reached; in the course of this year, Polish museums were visited by nearly 25 million people.

The relative proportions between the number of visitors to Polish museums and the number of museums are similar. The largest number of museums are in Malopolska and Mazowiecke provinces, the smallest number in Opolskie and Lubuskie provinces. In 2012, altogether 26.7 million people visited museums in Poland (7.2% more than in the previous year); within this number, 11.3 million visited free of

charge. Organized groups of school pupils constituted 19.6% of the total number of visitors (in 2011 – 23.3%). Similar to the previous year, it was museums representing an artistic and historical profile that enjoyed the greatest popularity among visitors; they were visited respectively by 8.2 and 4.3 million people. A good opportunity to become acquainted with the Polish national heritage for free is the annually organized "Museum Night". Around 950 000 people have taken advantage of this type of museum visit (3.2% less than in 2011), whereas 1.5 million people took advantage of other forms of special museum events (*Kultura*... 2013).

The highest visitor attendance figures are recorded by the Auschwitz-Birkenau Memorial and Museum (1.5 million in 2013); it is an un-ticketed, free attraction[4], which records precisely the number of its visitors. In the second and third place, one finds two Krakow museums together with their branches. In the year 2013, the Historical Museum of Krakow was visited by 0.94 million people; within this number, the Rynek Underground was visited by 440 000, while Schindler's Factory by 270 000. In the same year, the National Museum of Krakow recorded visitor attendance at a level of 726 000, including 224 000 who visited the Painting Gallery in Sukiennice /Cloth Hall/. In fourth place, is found the Warsaw Uprising Museum (490 000); the National Museum in Wrocław is not far behind with its visitor attendance of 466 000, including visitors to the Racławice Panorama branch (260 000) and the Municipal Aquarium in Gdynia (366 000). Attendance figures exceeding the 200 000 mark have been recorded by the Podlasie Museum in Białystok (260 000) and the Lublin Museum (220 000).

A separate category of museum venues are referred to as "skansens" or open-air museums. At the present moment, there are more than 50 such venues in Poland; they are divided into railway, archeological and ethnographic museums. Studies have revealed visitor attendance figures in a few of them; the biggest number of visitors has been recorded in the largest venue of this type, namely – the Museum of Civil Engineering in Sanok (130 000 visitors) which the Museum of the Kielce Village in Tokarnia (127 000) and the Ethnographic Park in Olsztynek (86 000). Other venues of this type include the Museum of Lublin Village (66 000), open-air museum in Pstrążna near Kudowa (49 000), Museum of the Opole Village in Bierkowice (around 40 000), Museum of Folk Culture in Kolbuszowa (37 000), the Ethnographic Open Air Museum in Ochla near Zielona Góra (33 000), the Kurpiowski Open-Air Museum in Nowogród (22 000).

3.3. ATTRACTIONS CREATED SPECIALLY FOR TOURISTS

The above group includes venues which have been specially created for tourists, such as amusement parks (the latter include thematic parks, dinosaur parks, fun fairs, Wild West Cities, ropes courses and water parks), cable-cars, safari parks and zoological gardens. These venues are in most cases created by private investors who are generally unwilling to provide information concerning visitor attendance figures. In the majority of cases, they make excuses quoting the argument of trade secrets, or else they do not answer any questions. The biggest attendance among dinosaur parks has been recorded by the Jura Park in Bałtów (320 000 visitors in 2013) above Jura Park in Krasiejow (210 000) and the Dinosaur in Nowiny Wielkie (35 000) in Lubuskie province. The biggest and most frequently visited Malopolska dinosaur park in Zator, refuses to give information concerning visitor attendance. The same management is also in charge of the biggest mini Jurassic park located in nearby Inwałd. In the latter category of attractions, we have only been able to obtain data from the Mini Jurassic Park in Ogrodzieniec (between 45 and 80 000 visitors).

The water parks in Tarnów and Zakopane are visited by over 300 000 people annually, while the Zoological Garden in Opole by nearly 250 000. Yet these are by no means the biggest and most representative venues. A much higher attendance is recorded in the modern Bania baths in Białka Tatrzańska (around 600-700 000 visitors annually), which matches the attendance figures of the Maltese Baths, in the large city of Poznań (around 700 000 visitors). High attendance figures are also recorded in the case of Bukovina Baths in Bukowina Tatrzańska (around 450 000 visitors) and the Uniejów Baths (200 000). The data relating to the use of geothermal facilities for tourism and recreational purposes concerns 2011.

Only a single management of a gondola lift has supplied us with data concerning visitor attendance figures; in accordance with this data, attendance at the Jaworzyna Krynicka gondola lift is estimated to be at a level of 500 000 people annually. In the case of the latter type of facility, it is data referring to the summer season that turns out to be more precise, as the use of ski passes during the winter season requires a special re-calculation of visitor attendance figures.

3.4. SHOWS AND EVENTS

The last group of attractions includes special events and shows, such as festivals, picnics, folk rituals, fairs, games and sports events as well as battle reenactments. In this category, data and estimates from only 15 organizers have been obtained. With this type of attraction, there is no precise information concerning visitor attendance, as the events in question often involve non-ticketed open-air cultural shows. The estimates provided by the organizers and journalists often differ from each other and are sometimes exaggerated (e.g. the City Council in Gdańsk stated that as many as 7 million visitors attended the Dominican Fair in this city).

The event known as 'Przystanek Woodstok' /Woodstock Station/ in Kostrzyń on the Oder was estimated to have attracted half a million participants. High attendance figures were recorded in the case of the Dni Morza /Days of the Sea/ event in Szczecin (around 100 000), and combined with such a yachting events as the Tall Ships, it produced a record attendance of 2.6 million. Events which are much more intimate as regards attendance are the festivals of Jewish Culture in Krakow (around 30 000) and the Dialogue of Four Cultures Festival in Łódź (around 40 000). The Malta Festival in Poznań, on the other hand, attracts between 20 and 80 000 participants (depending on the year, program and weather). The New Year crib competition in Krakow attracts 15 000 spectators who view the award-winning cribs. At this point, one should add that events taking place in big cities attract more local citizens than tourists (e.g. ¾ of the visitors to the Dialogue of Four Cultures Festival were inhabitants of Łódź).

The annual reenactment of the battle of Grunwald attracts between 60 and 80 000 knights and spectators. It is the biggest event of this type in Poland, and maybe even in Europe. The cross-country ski run 'Bieg Piastów' in Jakuszyce attracts 5 000 participants.

4. FLAGSHIP AND MAXIMUM VISITOR ATTENDANCE ATTRACTIONS IN THE REGIONS

The ability to differentiate between the impact and significance of tourism attractions is very important for the process of planning and further development of individual tourism regions. Thus, the so-called flagship attractions are usually treated as instruments of economic growth or as catalysts of revitalization which may trigger processes of social transformation and economic rebranding exerting an impact on the quality of life of the local inhabitants. Their impact on the local economy is often referred to in the professional jargon as an "effect" (e.g. "the Guggenheim Effect" in Bilbao, PLAZA 2008). It may also happen that attractions which had originally been designed as flagships, lead to a degradation or deterioration of the quality of life in the target area, leading to an exodus of tourists who begin to look for alternative attractions elsewhere. Sometimes flagship attractions turn out to be unprofitable and public funds have to be engaged in order to maintain them (for instance in Poland, the majority of water parks have turned out to be unprofitable and consequently need to be subsidized from local budgets).

The problem lies in not being able to distinguish precisely between these two different types of attraction (LEASK & FYALL 2006). The two terms are often used interchangeably. The term 'flagship attraction' is understood as the "best and most important attraction". It is associated with such features as uniqueness of location, international importance, considerable size and economic effects (e.g. Euro Disneyland in France and Legoland in Denmark).

Cult attractions, also known as icons, are venues which are regarded as most prestigious and worthy of admiration; they constitute a symbol of culture. In tourism it is thought that they are authentic elements and that their perception allows one to create an image of an attraction icon. Among the icons one finds such attractions as Mount Fuji, the Eiffel Tower, the Great Wall of China and Taj Mahal. The icons are identified as universally recognized symbols and that is how they are perceived both by tourists and the local community (JENKINS 2003). They are often treated as "branded" attractions and consequently they contribute to the creation of new, often branded tourism products. Attractions which are being promoted as tourism icons are of service in the process of creating a ranking of tourism products.

The difference between flagship attractions and icons exerts an influence on the process of management of attractions. Flagship attractions have the ability to generate the required economic growth effects through attracting considerable numbers of visitors, while cult attractions /icons/, do not have to meet this requirement. For example, the London Eye is the most frequently visited paid attraction in London; it attracts 3.7 million visitors annually, compared to nearly 1 million tourists who visit the Houses of Parliament. London Eye is regarded as a flagship attraction, while the Houses of Parliament are regarded as a cult attraction or icon, similarly as the Opera House in Sydney, whose image is often taken advantage of in Australia for marketing purposes. The division into flagship attractions and icons is imprecise and subject to change. Cult attractions are

Table 1. Tourism attractions with the highest visitor attendance figures and the greatest potential (flagship venues), according to region

Province	Highest visitor attendance	Flagship attractions
[1]	[2]	[3]
Dolnośląskie	1. Karkonoski National Park 2. National Museum in Wrocław 3. Stołowe Mountains NP 4. Książ Castle in Wałbrzych 5 Gold Mine in Złoty Stok 6. Wang Temple in Karpacz 7. Papermaking Museum in Duszniki	1. Old Town in Wrocław 2. Racławice Panorama 3. Karkonosze Mountains 4. Stołowe /Table/ Mountains 5. Książ Castle 6. Wang Temple 7. Gold Mine in Złoty Stok
Kujawsko-pomorskie	1. Archeological Reserve in Biskupin 2. Jurassic Park in Solec	1. Biskupin – reserve and picnic 2. Toruń – Old Town UNESCO 3. Graduation towers in Ciechocinek
Lubelskie	1. Old Town in Zamość 2. Lublin Museum 3. Museum in Kozłówka 4. Roztocze NP	1. Zamość – UNESCO, 2. Lublin – Old Town 3. Kazimierz Dolny – historical monuments 3. Kozłówka – museum 4. Roztocze – NP
Lubuskie	1. Woodstock Station 2. Międzyrzecz Fortification Region 3. Warta Mouth NP 4. Dinosaur Park	1. MRU /Międzyrzecz Fortification Region/ 2. Warta Mouth NP 3. Łagów – castle and lakes 4. Mużakowski Park UNESCO
Łódzkie	1. Palace in Nieborów 2. Textile Museum in Łódź 3. Festival of Dialogue of 4 Cultures	1. Manufaktura Center in Łódź 2. Piotrkowska Street 3. Nieborów and Arkadia 4. Uniejów Baths
Małopolskie	1. Tatra NP 2. Auschwitz-Birkenau 3. Salt Mine in Wieliczka 4. State Art Collection in Wawel Castle 5. Historical Museum of Krakow 6. Krakow National Museum 7. Pieniny NP	1. Kraków – Old Town 2. Wawel 3. Museums of Krakowa 4. Wieliczka Salt Mine 5. Auschwitz-Birkenau 6. Pieniny Mountains 7. UNESCO Trail (wooden churches and Orthodox temples) 8. Shrine in Łagiewniki
Mazowieckie	1. Palace in Wilanow 2. Palace in Łazienki 3. Royal Castle in Warsaw 4. Kampinoski NP 5. Museum of Warsaw Uprising 6. National Museum WAW 7. Museum of Technology and Industry NOT	1. Wilanów 2. Łazienki 3. Old Town with castle and cathedral (UNESCO) 4. Kampinoski NP 5. Science Center Copernicus 6. National Stadium
Opolskie	1. St Anne's Mountain 2. Jura Park in Krasiejów 3. Zoo in Opole 4. Museum of Śląsk Opolski 5. Castle in Brzeg	1. Opole – monuments, amphitheater 2. Jura Park in Krasiejów 3. Castle in Brzeg 4. St Anne's Mount – Historic Monument 5. Paczków – Polish "Carcassonne" 6. Palace in Moszna
Podkarpackie	1. Bieszczady NP 2. 'Skansen' Open-Air Museum in Sanok 3. Carpathian Troy – 'skansen' 4. District Museum in Rzeszow 5. Museum of Przemyśl Land	1. Bieszczady Mountain Range 2. Lakes on the San river 3. Łancut – castle, park, carriage-house 4. Wooden churches and Orthodox temples (UNESCO) 4. Palaces in Krasiczyn and Baranow Sandomierski 5. Carpathian Troy
Podlaskie	1. Podlasie Museum in Białystok 2. Białowieski NP 3. Wigierski NP 4. 'Skansen' in Nowogród	1. Białowieski NP (UNESCO) 2. Augustowski Canal 3. Wigierski and Biebrzański NP 4. Palace in Białystok 5. Museum in Supraśl

[1]	[2]	[3]
Pomorskie	1. Castle in Malbork 2. Słowiński NP 3. National Museum in Gdańsk 4. Municipal Aquarium in Gdynia 5. Rozewie Lighthouse 6. 'Dar Pomorza' Ship-Museum 7. Dominican Picnic	1. Castle in Malbork 2. The Pier in Sopot 3. Aquarium in Gdynia and Seals Shelter on Hel Peninsula 5. Monuments and museums of Gdańsk 6. Kaszuby – open-air heritage park, museums, landscape 7. Słowiński NP
Śląskie	1. Museum of Silesia in Katowice 2. Palace in Pszczyna 3. Castle in Ogrodzieniec 4. Guido Mine and 'Królowa Luiza' skansen in Zabrze 5. Museum of Żywiec Brewery 6. Czarny Pstrąg /Black Trout/ Gallery in Tarnowskie Góry	1. Castle in Pszczyna 2. Guido Mine and Queen Louise open air heritage park 3. Ogrodzieniec and castles along the Eagles' Nests Trail 4. Silver Mine in Tarnowskie Góry together with the Black Trout Gallery Pstrąga 5. Park of Culture and Recreation in Chorzów 6. Breweries in Żywiec and Tychy
Świętokrzyskie	1. Świętokrzyski NP 2. JuraPark in Bałtów 3. Museum of Kielce Village 4. Ruins of the castle in Chęciny 5. Palace in Kurozwęki 6. Castle in Sandomierz	1. Świętokrzyskie Mountain Range 2. Bishops' Palace National Museum in Kielce 3. Kadzielnia Reserve 4. JuraPark in Bałtów 5. Open Air Heritage Park of the Kielce Village in Tokarnia 6. Sandomierz – monuments and Father Matthew's Trail
Warmińsko--mazurskie	1. Copernicus Museum in Frombork 2. Ethnographic Park in Olsztynek 3. Reenactment of the battle of Grunwald 4. Museum of Warmia and Mazury in Olsztyn	1. Elbląsko-Ostródzki Canal 2. Frombork – castle hill complex with cathedral and Copernicus Museum 3. Wolf's Lair in Gierłoż 4. Grunwald Battle Field 5. Mazury Lakes 6. Trail of Teutonic Castles
Wielkopolskie	1. Wielkopolska NP 2. Museum of the First Piasts in Lednica 3. National Museum of Agriculture in Szreniawa 4. Museum of the Origina of the Polish State in Gniezno 5. Castle in Kórnik 6. Malta Festival in Poznań	1. Poznań – Old Town and Museums 2. Gniezno – monuments and museums 3. The Piast Trail 4. Malta Sports and Recreation Complex in Poznań 5. The Kórnik Complex – castle, museum and arboretum
Zachodnio-pomorskie	1. Wolinski NP 2. Museum of Polish Arms in Kołobrzeg 3. Bison Enclosure in Woliński NP 4. National Museum in Szczecinie 5. Days of the Sea in Szczecin 6. Lighthouse in Gąski	1. Szczecin – museums and monuments 2. Woliński NP including the Turquoise Lake 3. Lighthouse Trail 4. Ruins of the church in Trzęsacz 5. Cathedral in Kamień Pomorski 6. Pier and Stars' Alley in Międzyzdroje 7. Borne Sulinowo – post-Soviet mementoes. 8. Drawieński NP

Source: own research.

likely to lose their cult value, for instance through environmental pollution (WEAVER & LAWTON, 2007) or competition created by new venues representing similar attributes.

On the basis of the analysis of visitor attendance figures as well as an analysis of the distribution of attractions in individual regions, a list of attractions with the highest attendance has been drawn up and a number of attractions have been selected which due to the greatest potential for attracting tourism, may be treated as flagships (Table 1). The lists do not take into consideration visitor attendance figures in religious shrines, due to the specific character of this form of tourism and a lack of product indications with regard to pilgrimages. Yet the ticketed sacred venues have been taken into consideration.

5. AN ATTEMPT TO IDENTIFY THE FACTORS DETERMINING VISITOR ATTENDANCE AT TOURISM ATTRACTIONS

The research conducted, as well as an analysis of source materials, allowed a number of factors to be distinguished which determine visitor attendance at tourism attractions. The above factors can be divided into two major groups:

1. Endogenic factors (associated with the attraction itself as well as with its character):
a) size of the venue;
b) type of attraction (authenticity, uniqueness);
c) function of attraction (iconic, flagship);
d) links with hotel, gastronomic, travel guide services, sale of souvenirs etc.;
e) price of entrance tickets;
f) attraction program, use of new multimedia techniques and interpretations;
g) creative and professional staff;
h) inroduction of innovations;
i) promotion of attractions.
2. Exogenous factors (associated with the surroundings of the attractions):
a) distance from source areas of tourism;
b) location in the vicinity of a big city ensuring a constant flow of visitors;
c) support of tourism attractions and their development by local authorities;
d) networking tourism attractions with other venues;
e) world trends in tourism.

In absolute numbers, the highest values of visitor attendance in ticketed attractions are found in renowned national parks situated in the most attractive tourism regions (the Tatra NP, Karkonosze NP, Wolin NP) or else in the vicinity of large agglomerations (Wielkopolski NP and Kampinoski NP).

In the case of cultural attractions, the highest figures for visitor attendance are in iconic attractions in cities which are regarded as international centers of tourism (Warsaw, Kraków) or else in their vicinity. The latter group is largely made up of park and palace complexes, such as Wilanów and Łazienki, the Royal Wawel Castle, the unique Salt Mine in Wieliczka as well as museum venues; within the latter category, it is the Auschwitz-Birkenau Memorial and Museum, the Historical Museum of Kraków and the National Museums in Kraków and Wrocław, that come to the foreground.

Within the group of attractions which have been created especially for tourists, the highest visitor attendance has been recorded in modern thermal springs on the Poznań Malta, in Białka Tatrzańska and Bukowina Tatrzańska, all of which are in areas which are attractive for tourists, or else are situated within the limits of a city agglomeration. High visitor attendance is also recorded by the gondola lifts, e.g. in Zakopane, Krynica etc. which are in the most popular tourism resorts. The refusal to provide information relating to visitor attendance figures by the biggest amusement parks makes it virtually impossible to successfully compare the rank and status of this category of attractions with the others.

6. CONCLUSIONS

Bearing in mind the existing information gaps as well as certain limitations in obtaining access to information concerning visitor attendance in attractions, there is an urgent need to conduct basic research within the attractions themselves. The research in question should be complex in character and it should concern selected examples from all groups of attractions. Establishing the visitor attendance levels in non-ticketed venues will allow one to estimate the number of visitors in similar attractions. In the first instance, one should conduct such studies in selected amusement parks (theme parks, dinosaur parks, water parks, funfairs, Wild West cities).

Apart from amusement parks, basic research should also be conducted on theme tourism trails, with regard to which there is virtually no statistical data concerning visitor attendance; similar studies should also be conducted in the case of more important pedestrian trails, such as e.g. the Orla Perć trail in the Tatra Mountains.

Bearing in mind the difficulties in estimating visitor attendance rates in venues such as ruins of castles, isolated historical monuments, as well as shows and events, it is advisable to initiate quantitative and qualitative studies with regard to sample attractions representing the above categories. Apart from obtaining information concerning visitor attendance, such studies should also focus on the quality of the services in the attractions, the range of their impact, methods of management, employed personnel, profitability, seasonality, the impact of the location of a given attraction on the economy of the region. Information concerning attractions is necessary for the creators of tourism products – organizers of tourism, attraction managers as well as local governments. Thus there is an urgent need to carry out such research taking advantage of a variety of available instruments. For instance, to examine the quality of the attractions,

one could take advantage of the method of diagnostic survey (questionnaire techniques, interviews), marketing methods, virtual ethnography methods and the method of mystery shopping.

FOOTNOTES

[1] In the article, the author makes reference to the results of his research project conducted for the Polish Tourism Organization, within the commissioned task "Visitor Attendance at Tourism Attractions". See a report on the research: http://www.pot.gov.pl/dzialania/p/do-pobrania/badania-i-analizy.

[2] As examples of the product-attractions, J. KACZMAREK, A. STASIAK & B. WŁODARCZYK (2005, pp. 79–89), the authors of the publication *Produkt turystyczny* /Tourism Product/, describe the Świętokrzyskie Smelting Furnaces, the International Championships in Gold-Panning in Złotoryja, the International Bread Fair in Jawor, the "Świnoujście" Sea Fortress, the Trail of Wooden Architecture, the Mazury Eden – Galindia and the Jurassic Park in Bałtów.

[3] Culture in 2012. Year-book of the Main Statistical Office /GUS/, Warsaw 2013.

[4] The management of this museum requests that, due to the specificity of the place and its collection, the term attraction should not be used with reference to it.

BIBLIOGRAPHY

COHEN E., 1972, Towards a Sociology of International Tourism, *Social Research*, 39, pp. 164-182.

DAVIDSON R., 1996, *Turystyka*, PAPT, Warszawa.

GOODALL B., 1990, The Dynamics of Tourism Place Marketing, [in:] G. Ashworth i B. Goodall (eds.), *Marketing Tourism Places*, Routledge, London.

JENKINS O., 2003, Photography and travel brochures: The circle of representation, *Tourism Geographies* 5(3), pp. 305-328.

KACZMAREK J., STASIAK A., WŁODARCZYK B., 2005, *Produkt turystyczny*, PWE, Warszawa.

KRUCZEK Z., 2011, *Atrakcje turystyczne. Fenomen. Typologia. Metody badań*, Proksenia, Kraków.

Kultura w 2012, 2013, Rocznik GUS, Warszawa.

LEIPER N., 1990, Tourism Attraction Systems, *Annals of Tourism Research*, 17, pp. 367-384.

LEASK A., FYALL A., 2006, Researching the Management of Visitor Attractions: International Comparative Studies, *Tourism Recreation Research*, 31, 2, pp. 23-32.

LEW A., 1974, A Framework of Tourism Attraction Research, [in:] J.R. Brent Ritchie, Ch.R. Goeldner (eds.), *Travel, Tourism and Hospitality Research. A handbook for Managers and Researches*, John Wiley & Sons, New York.

LUNDBERG D., 1985, *The Tourism Business*, Van Nostrand Reinhold, New York.

MCCANNELL D., 2002, Turysta. *Nowa teoria klasy próżniaczej*, Wyd. Literackie Muza S.A., Warszawa.

PEARCE P.L., 1998, Marketing and management trends in tourism attractions, *Asia Pacific – Jurnal of Tourism Research*, 3, pp. 1-8.

PLAZA B., 2008, On some challenges and conditions for the Guggenheim Museum Bilbao to be an effective economic re-activator, *International Journal of Urban and Regional Research*, 32(2), pp. 506-517.

RICHARDS G., 2002, Tourism Attractions System; exploring cultural behavior, *Annales of Tourism Research*, 29(4), pp. 1048-1064.

SWARBROOKE J., 1995, *The development and management of visitors attractions*, Butterworth – Heinemann, Oxford.

URRY J., 2007, *Spojrzenie turysty*, transl. A. Sułżycka, PWN, Warszawa.

YALE P., 1990, *From tourism attractions to Heritage Tourism*, ELM Publications, Huntington.

WEAVER D.B., LAWTON L.J., 2007, Just because it's gone doesn't mean it isn't there anymore: Planning for attraction residuality, *Tourism Management*, 28, pp. 108-117.

Jacek Kotus
Michał Rzeszewski
Adam Mickiewicz University
Institute of Socio-Economic Geography and Spatial Management
Department of Human Spatial Behaviour
tatra@amu.edu.pl

APPLYING 'MIXED METHODS' IN THE STUDY OF TOURIST BEHAVIOURS IN THE CITY – AN EXAMPLE OF CONCEPTUALIZATION AND APPLICATION (DISCURSIVE ARTICLE)

Abstract: This article fits into the category of a conceptual-discursive article. Its aim is to discuss the application of 'mixed methods' in research concerning tourist behaviours, especially in the city. The article consists of a part presenting a set of methods used to study such behaviours and a part discussing the results concerning the application of a proposed research procedure algorithm. The authors take a behavioural approach and propose using a quasi-experimental method combined with techniques of mobility monitoring (GPS), and the qualitative methods used in sociological research. The article presents a discussion concerning 'mixed methods', discusses a proposed algorithm of research procedure and presents conclusions following the joint application of these methods.

Key words: mixed methods, research into tourist behaviours, behavioural experiment, movement monitoring, GPS, focus group interview.

1. INTRODUCTION

Tourism-related research is not an easy academic endeavour. Due to its specificity it is multidimensional and methodologically difficult. Tourism as a field of research is expanding not only as regards its subject; but the variety of tourism types is increasing both spatially (due to the growing number of destinations) and temporally through the phases and cycles of preparation, the actual course of an activity, and its consequences. Such a wide area of study brings with it a question on the use of appropriate methods and suitable methodological approaches. From a different perspective, this last element is a spectacular mosaic of multidisciplinary and interdisciplinary exploration (MAIK, MARCINIAK & PALICH 2005, MARAK & WYRZYKOWSKI 2009, LISZEWSKI 2010). BOTTERILL & PLATENKAMP (2012) present a very broad spectrum of usable research methods which include both quantitative and qualitative approaches derived from ethnology, sociology, economics and psychology. Viewing tourism studies from a social perspective, the authors start by proposing an algorithm for selecting methods for three key aspects of research in tourism:

- study of a tourist's **experience** by analysing narration, conducting focus interviews, using methods of symbolic interactionism and Kelly's personal constructs;
- study of the site context, by analyzing case studies, contents, documents, conducting focus interviews;
- study of organization by using participatory action research, the Delphi method, evaluatory methods, as well as document and case study analysis.

Without going deeper into the appropriacy of these approaches, one conclusion can certainly be drawn from this multidisciplinary compilation: tourism studies have many different overtones. They are not easy, either as regards objectives, areas of investigation, or choice and knowledge of research methods. It must be added that the social perspective of combining research methods is not the only possible point of view, another is through geography and a spatial approach. The geographical aspect is represented in a very interesting way, especially from a Polish

research perspective (BUTOWSKI 2011). S. LISZEWSKI (2008) mentions the following research directions with regard to the city: analysis of tourism assets, tourism function, tourism space, as an area of tourism supply and demand, its inhabitants' free time, or the study of cityscape. The geographical (spatial) approach has resulted in the development of many quantitative methods of spatial analysis, including sociological surveys and environmental perception analysis.

In this article, we would like to consider a small part of 'tourism' studies, i.e. the analysis of tourist behaviours in a city. In this way, we want to draw the reader's attention to the behavioural aspect of studying tourism and tourists, and show at the same time the complementary application of various methods (LEE & JOH 2010, PETTERSON & ZILLINGER 2011, GREENBERG, RAANAN & SHOVAL 2014).

The general aim is to discuss the application of 'mixed methods' in tourism research, especially in the study of tourist behaviours in the city. It is a conceptual-methodological aim, although the article contains the results of empirical studies as well. The latter have been used as evidence for the proposed set of methods rather than empirical evidence. In the context of the main aim as set out here, it is possible to formulate individual aims which will be discussed in subsequent sections:

- defining the role of 'mixed methods' research in the study of tourist behaviours;
- presenting the algorithm for using the methods and discussing selected examples in the context of analyzing tourist behaviours in the city;
- presenting exemplar results and discussing the weaknesses and strengths of the applied methods.

2. WHAT IS 'MIXED METHODS' RESEARCH?

The postulate of a genuinely interdisciplinary character to research concerning tourism seems pivotal for the understanding of the mechanisms and rules existing in this domain of reality (MAIK & PRZYBECKA-MAIk 2005). Fulfilling this may guarantee a problem and conceptual integration of research activity. Due to an interdisciplinary approach, it is possible to provide increasingly detailed answers to research questions. However, as W. MAIK & M. PRZYBECKA-MAIK remark (2005), this interdisciplinary character can be misleading. Although it is declared by researchers, they often take a multidisciplinary approach where representatives of various academic disciplines look on a problem from different perspectives. It is often the case that there are no integrated conceptualizations or complementary creation of research tools and procedures. Only the approach to the objective itself is multidisciplinary, and there is no cooperation, not to mention an interdisciplinary character to the research procedure.

The most important aim of research is to discover truth and the mechanisms controlling the world around us. Hence, choosing an interdisciplinary approach in research seems a fairly natural consequence of setting out these objectives. An interdisciplinary approach lets us look at things from various, sometimes completely different research perspectives. The interdisciplinary character of the methods even makes it possible to conduct a study which is achieved thanks to various research methods at the stages of both data collection and interpretation. Taking an interdisciplinary approach makes it possible to study phenomena in more detail, which results in eliminating a researcher's 'subjective certainty' and coming closer to 'objective truth'. We must also remember about the 'load' of personal traits, conventions, geographical location, objectives and ideologies which are contributed by the researcher (a more comprehensive discussion of this issue can be found in Tribe 2006). Beyond any doubt, interdisciplinary cooperation concerning the identification of tourist behaviours in the city, needing understanding from geography, economics, psychology, cultural anthropology and sociology, supports the postulate formulated earlier – finding of the truth.

For many years, English-speaking researchers have been doing 'mixed method' research (MMR) (ROCHELEAU 1995, PHILIP 1998). It can be defined as using 'permeating' methodological approaches, two or three of which are applied concurrently (at the same stage, in the same study, at the same time, at the same place and on the same group of subjects) (MC KENDRICK 2009). English-writing authors point out that this approach is a kind of extension of the more popular multiple method, in which different research methods from various disciplines are applied at subsequent stages of study and not necessarily with the same group of subjects (JIANG 2003). In 'mixed method' research, specific methods, chosen by the researchers, are used simultaneously and in a 'permeating'/complementing manner (CRESWELL 2003).

3. 'MIXED METHOD' RESEARCH – AN ALGORITHM FOR APPLICATION IN THE STUDY OF TOURIST BEHAVIOURS

3.1. BEHAVIOURAL QUASI-EXPERIMENT

The first element of a 'mixed method' research algorithm which we propose is the experimental method. It is a kind of methodological security blanket

for the application of two other methods presented later (*cf.* Fig. 1).

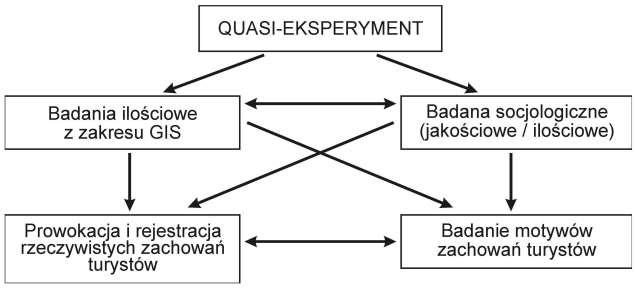


Fig. 1. A 'mixed method' research diagram for tourist behaviours in city space
Source: author based on H. JIANG (2003).

The experimental method, though popularly used in psychology (as broadly understood) in a variety of forms, is very rarely applied in other disciplines. We are naturally excluding here the wide range of sciences in which experiment is a well established, basic research method. The experimental method can be used in economic geography, although there the experiment gives way to simulation (MONTELLO & SUTTON 2006). However, the experimental (quasi-experimental) method is hardly ever used by social geographers, as well as in closely related disciplines, such as tourism. We can say 'hardly' however, because a milestone in applying psychological methods in the study of spatial behaviours was of course the pioneering work by American behavioural geographers, led by R. GOLLEDGE (GARLING & GOLLEDGE 1993), as well as many works inspired by the 'Californian school'.

It should be noticed that social research, especially the study of human behaviour, has become increasingly interdisciplinary. It is not only psychologists, cultural anthropologists or social scientists that pay attention to the 'mechanisms' controlling human behaviour. They have been joined by architects, urban planners, social geographers and those involved with geo-information. The last decade has brought the rapid development of the spatial economy and spatial planning, as well as tourism, in Poland. Although some aspects of tourism activity can be examined by means of sociological methods, tourist behaviours often require other tools. When asked about their own behaviour, respondents often provide inaccurate, declarative and normative answers. From the social perspective, the problems of 'tourism research' are serious. K. PODEMSKI & J. ISAŃSKI (2008) enumerates the following: the choice of respondents, lack of information about the number of new arrivals, tourist movements, the research location, language barriers in the study of foreign tourists, tourist interest in the research, and seasonality. Hence, an experimental approach appears to be highly interesting. At least some of the problems above disappear: the accessibility of tourists, convincing them to take part in the survey, their availability at the site, seasonality and language barriers. These elements can be controlled during an experiment. A behavioural experiment in tourism seems to be an optimal solution. However, it must be clearly stated that its full and restrictive version is difficult to apply in the study of tourists due both to the repeatability requirement and the controllability of the conditions, as well as (which is very important) the ethical aspect (PRINCE, BROWN & HEATHCOTE 2012, DZIAK, NAHUK-SHANI & COLLINS 2012). It might even be said to become a very risky and dangerous activity for the respondents (AMEDEO, GOLLEDGE & STIMSON 2009, p. 117), especially when it is conducted by those who lack the professional knowledge or interpersonal skills required in this type of research. Thus, in order to identify tourist behaviours in the city, the quasi-experiment method was used (THYER 2012). It is less restrictive in application due to the fact that a control group and a 'pretext' are excluded from it. In a quasi-experiment, the stability of dependent conditions, which cannot be controlled by the researcher, is less restrictive.

The application of the experimental (quasi-experimental) method diminishes one of the basic dilemmas of spatial social research concerning tourists – the huge difficulty in or even impossibility of grasping the dynamics of tourist behaviours, or even reaching respondents. In the latest literature on the subject, regarding the study of movement paths by means of GPS location, individual works can be found which refer to the mechanism of methodological triangulation and take the quasi-experiment into consideration, despite the fact that the authors themselves do not use these terms in their description of research methods (GREENBERG, RAANAN & SHOVAL 2014).

A quasi-behavioural experiment involves tools recording the respondents' movement in space and time, as well as setting tasks: taking the tourist into an unfamiliar city in order to examine behavioural aspects of activity, or their activity on tourism trails in a national park. It is important for the tourists (experiment participants) to be exposed to selected stimuli controlled by the researchers. It is possible to control the following social variables:

- the number of people or groups to be included;
- the compodition of the studied groups;
- individual socio-demographic profiles.

Independent variables may of course include time and the type of space: closing a part of the tourism trail, designating alternative paths/trails, different accommodation. Using the behavioural quasi-experiment method for the study of tourist behaviours allows repeatability of recording when the stimuli are

changed. Finally, in conducting a behavioural quasi-experiment, we have control over the respondents and access to them, which is very important when studying tourist behaviours. In traditional studies, they are often simply inaccessible.

3.2. RESEARCH INTO MOVEMENT PATHS

There are few technologies which have had such a significant and permanent influence on the methodology of research into spatial phenomena as the use of satellite location methods (GPS). In the early stages, GPS technology was used to track and analyse the paths of vehicles in studies of road traffic (ZITO, D'ESTE & TAYLOR 1995, QUIROGA & BULLOOCK 1998). The idea of introducing GPS technology into the study of individual human spatial behaviour probably appeared at the same time as a result of imperfect methods of recording the movements of pedestrians. The most popular were time-space budgets and diaries which made it possible to record the respondents' activity within a short time interval (ANDERSON 1971, THORNTON, WILLIAMS & SHAW 1997). The pioneer of GPS-based research was R.G. Golledge who, with the help of his co-workers, was the first to undertake research in which city pedestrian paths were recorded in order to discover certain regularities (KLATZKY, LOOMIS & TIETZ 1998). Currently, the use of GPS technology in the study of tourist behaviours, both in and outside the city, is gaining in popularity. The method has been applied by N. SHOVAL & M. ISAACSON (2007, 2010), J. XIA, P. ARROWSMITH, D. JACKSON & W. CARTWRIGHT (2008) and J. XIA, P. ZEEPHONGSEKUL & D. PACKER (2011). A serious drawback of using geo-information methods for the analysis of social behaviour is their purely recording character. They make it possible to obtain a precise record of a sequence of behaviour, but not to identify its motivation. Recently, attempts have been made to improve this by introducing a requirement to fill out different kinds of questionnaires and creating perception maps (PETTERSON & ZILLINEGER 2011, GREENBERG, RAANAN & SHOVAL 2014).

Even though it is a promising direction of development, considering analysis of social phenomena, they are not advanced but very basic methods. They record movement without providing information about motivation for an activity undertaken in time and space. In social sciences, including human geography, it is possible to find qualitative methods which are more profound and meticulous in analyzing motivations. This is why the potential of GPS triangulation with qualitative methods seems significant. However, using it to the full is possible only if advanced techniques of measuring movement paths are accompanied by equally advanced techniques supporting the interpretation of human spatial behaviours. Another necessary condition is a fully interdisciplinary application, assuming that the time, place, group of respondents, problem and research stage are the same.

3.3. QUALITATIVE SOCIOLOGICAL RESEARCH

The third component of the 'mixed method' research algorithm is qualitative sociological research, discussed last in this article, but as significant as the others. Researchers commonly believe that qualitative sociological methods (e.g. an in-depth interview) are simple research methods, easy to use and obvious in the interpretation of results. Unfortunately, due to such an attitude, qualitative studies lose their value as reliable research methods. It must be strongly stressed that qualitative methods, despite being subjective 'soft' research practices, have their own methodology of tool building and procedure. Without following a procedure, an in-depth interview becomes an ordinary social conversation, and without following a procedure, it cannot even be regarded as such a conversation. It is rarely heard that qualitative research methods are internally diversified and it is a methodological mistake to apply them in an equivalent and interchangeable way. Using each of the techniques may have different purposes: recognizing deeply rooted individual views, examining the views of a collective, resulting from the interaction of the respondents during research, recognizing ideas and stereotypes, the effects of the presence of third parties on the opinions of the respondents, etc.

The literature review shows how intensive the search for suitable sociological methods, complementing behaviour recording with the use of GPS is. It concerns methods which would allow us to make sense of recorded behavioural paths, uncovering their motivations and causes. At present, many researchers interested in behavioural research (including tourist) turn to relatively innovative techniques of conducting an interview during the respondents' trips. The methods called 'walking interviews' include both recording the respondents' comments while they are visiting the city (and at the same time recording paths), and a technique in which the researcher follows the respondent or travels with him/her, and pausing their tourism activity with a conversation-interview at key places (WYLIE 2005, MOLES 2008, EVANS & JONES 2011). Refraining from comments concerning the many advantages and disadvantages of 'walking interviews' (due to the editor's restrictions on space), we may just point out their one major weakness, i.e. lack of naturalness. Which reader

(including the authors), visiting the city or walking along a tourism trail, speaks to themselves about what they perceive, and why and how it happens, or shares their reflections with other people? The perception process itself is so complex that many impressions (it is not known how many and which ones) appear unconsciously after some time, as a part of reflection, from a distance. Distance causes secondary interpretation of the stimuli experienced. Therefore, in the case of interviews that were conducted much earlier than the actual recording it is possible that the impressions and motivations are distorted. However, the authors of this article believe that if a respondent talks about their impressions and motivations some time after the activity, it is much more natural (without pressure, stimulation, provocation) than while it lasts. We may also witness the 'effect of a good subject', who (having the researcher next to or right behind them) will want to visit, see the city or take a given route to satisfy the imaginary 'expectations' of the researcher.

In the presented algorithm, we propose using the focus group interview (FGI) or individual in-depth interview (KITZINGER 1995, LONGHURST 2003, KRUEGER & CASEY 2008), conducted slightly later than the recording of the paths, which will enable the participants of the first phase of the experiment ('sightseeing') to take a deep breath, i.e. gain some distance and take a stance on the visited sites.

The FGI is applied in order to recognize collective (perhaps even conformist – in extreme cases we are dealing with group thinking syndrome) social views. During a meeting in one room and an exchange of ideas, hidden conformism and collective views are crystallized. The confrontation of all participants' views and observations enables them to articulate their emotions, attitudes and opinions about a given issue. In contrast to this method, the individual interview is focused on searching for individual opinions, motivations, attitudes and references. The specificity of IDI allows a more or less standardized conversation with the subject in a face-to-face situation, i.e. a more intimate interaction.

4. THE RESULT OF USING THE PROCEDURE ALGORITHM

4.1. QUASI-EXPERIMENT CONDITIONS

The study took place in the summer (July-August) 2013 in Trójmiasto and was the first in a series. The independent variable of the quasi-experiment was the size of the groups sent to Trójmiasto. In total, the following were sent separately: one person aged 31, a young married couple, a group of three – grandparents with a 12 year old granddaughter and a group of student friends. Each adult participant of the experiment had their own GPS receiver recording their movement. The subjects' task was to move around Trójmiasto in any way they chose, though they could also make short, one-day trips outside. Before they left, they pointed to the place where they wanted to spend the night. Each of them had a sum of 500 zloty which they could spend on accommodation or partly use during the stay. Movement was measured with GPS HOLUX 1000C.

One month after sending the last person/group to Trójmiasto, a focus group interview more than two hours long was conducted with all the adult participants of the quasi-experiment. It is important that although the study did not bear the signs, at every stage the ethical rules of the research were strictly observed. The subjects were well informed about the aims of the study, the method of measurement and the possibility of withdrawing at any time without any consequence. The FGI material was recorded on camera and a dictaphone voice recorder. After preparing a coded transcript from the group interview, the primary materials were destroyed. The FGI itself comprised various study techniques: from interview-discussion through projection techniques to creating a mind map of the visited city.

4.2. PRESENTATION OF RESULTS

During the focus group interview, the experiment participants discussed topics related to the trip and impressions from their visit to Trójmiasto as well as their attitudes to tourism and perception of tourism attractions in Poland and globally. The conclusions presented below are based on the transcript of the discussion and contain only observations concerning the spatial behaviours of the respondents.

The first thing that could be noticed in the course of the discussion was the fact that Trójmiasto was perceived from the perspective of Gdańsk as the central, most important and most attractive city. When asked about their impressions from the stay, the subjects usually referred to Gdańsk, e.g.:

> **The single person (male)**: Gdańsk – very lively and pleasant. He really likes cities by water and seeing the harbour, ships. This is the best for me. Combined with old buildings in the city and some cafes. The first impression – incredible.

Sopot and Gdynia appeared in the discussion as less attractive places, which were 'not worth the time':

> **Couple** (**male**): (…) Gdynia, I'd been there once in transit, so I knew what to expect there. There isn't too much to see. So we decided to find something more interesting to do in Gdańsk.

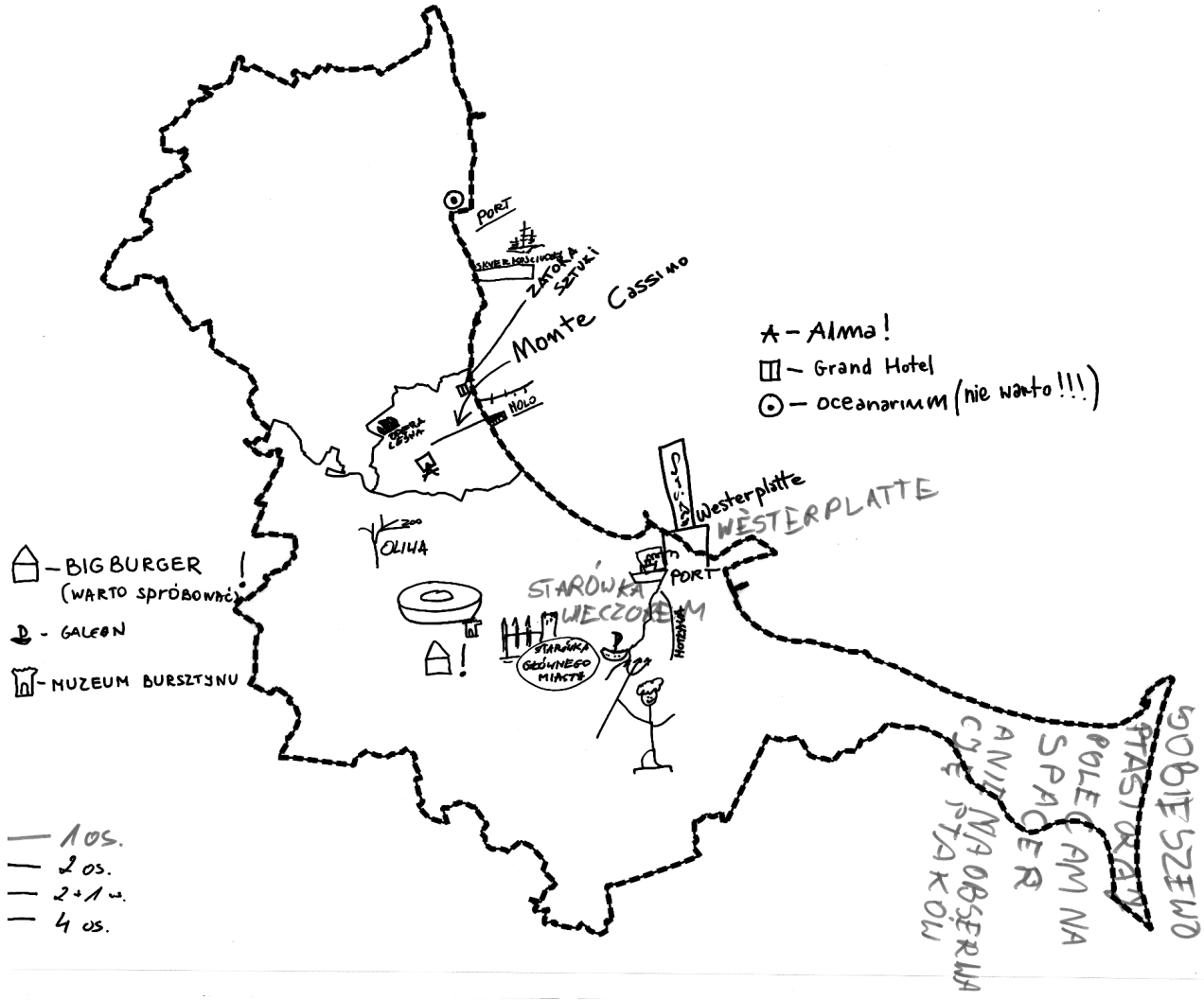


Fig. 2. The map of the most interesting places in Trójmiasto by FGI participants
The map key corresponds to the following identifiers used in the text:
1 person = a single person; 2 persons = a couple, 2+1 = a group of three with a child; 4 persons = groups A and B
Source: authors

> **Group of three with a child (female)**: (…) we skipped Sopot. I decided that it's no use going there. (…) we didn't want to waste time because we wanted to go back to Gdańsk.

An exception was the group of students, who chose Sopot as the most attractive place, due to different priorities as regards spending free time:

> **Group (female)**: There (in Sopot), we spent the most time. The greatest attraction was that we could live together for those five days. Without parents.

As for the choice of accommodation, some of the experiment participants based their choice mainly on price:

> **Group (male)**: At first, we were looking for a hostel, but it turned out that they were very expensive. We looked for something cheaper.

However, an equally important factor of the accommodation was accessibility by transport and close proximity to the main attractions:

> **Single person (male)**: I mainly focused on location. I wanted it to be close to the Old Town.

> **Group of three with a child (female)**: Transport was good, close to Wrzeszcz Railway Station. It was also quite close to tram stops; one or two lines.

Regardless of which city was chosen as the main destination, the remaining were visited only during individual short trips, often to a specific site.

> **Couple (male)**: We treated Sopot as a seaside resort; therefore we went there for one day to see it and have it over and done with.

> **Group of three with a child (female)**: We went to Gdynia instead, because you can get on those ships

there. As a matter of fact, we went there only to get on those two ships.

Group (female): We had only two trip days. One to Gdańsk and one to Gdynia. (…) We only saw the Oceanarium and the ships there (Gdynia).

During discussion, the subjects stressed how easy it was to move around Gdańsk and that the city transport was friendly and well organized:

Group (female): I like tram transport more (…). Gdańsk cares about tourists.

Group of three with a child (female): (…) there is no problem with tickets in Gdańsk because you can buy them from the tram driver.

Most participants of the experiment had not been preparing for the trip in any particular way. Their sources of information were almost exclusively local tourist information points – at the hotel or in the city. The most frequently mentioned form was the tourist map.

Group (female): We went to tourist information points and received maps.

Only the couple without a child had a detailed itinerary based on previously collected information.

Couple (male): We tried to download information from the internet. We found a lot. I made some printouts. We used just 10-15%. Not enough time.

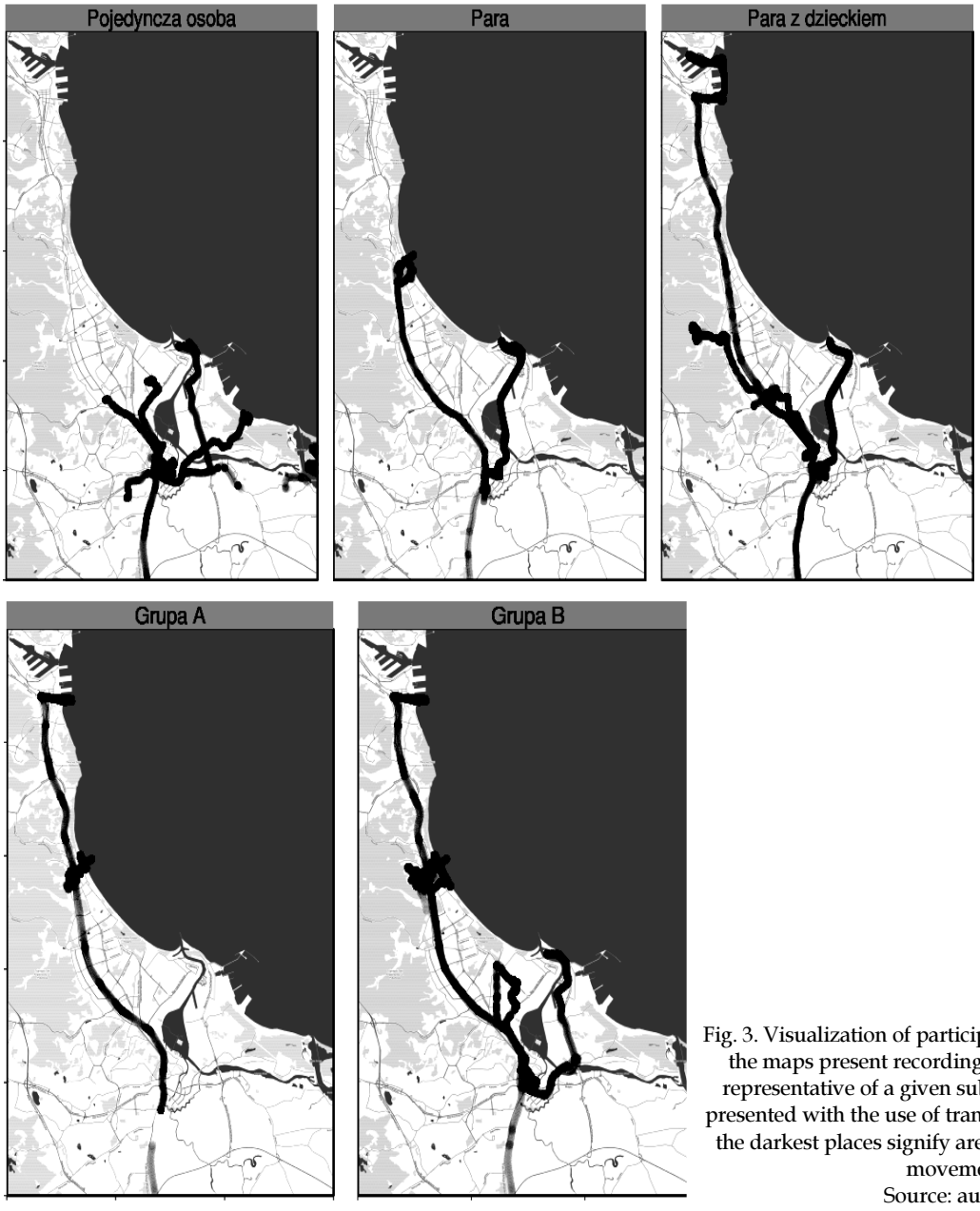


Fig. 3. Visualization of participants' movement paths – the maps present recordings from a single device representative of a given subgroup. The points are presented with the use of transparency alpha = 1/25 – the darkest places signify areas of the most frequent movement
Source: authors

The subjects also talked about the most attractive and recommendable places, as well as those which they had the worst memories of. The places worth recommending included St Dominic's Fair, the quay in Gdańsk, the Old Town in Gdańsk, the Fish Market, Mariacki Church with its view from the tower, the Museum of Amber, the Museum of Marine Culture in Gdańsk, the Shipyards, as well as Gdańsk Oliwa. Unpleasant memories were left only by the Anthropological Museum, Sobieszewska Island and in two cases the city of Gdynia as a whole. Due to the character of sightseeing described above, the respondents in both categories mentioned nearly exclusively places in Gdańsk. In addition, in this part of the group interview, the participants were asked to mark the places which they found most interesting on a map of Trójmiasto. In this way, the researchers obtained information about specific places as well their perception and remembered subjective locations in the form of a particular 'mind map' (cf. Fig. 2). It can be seen that the list of places is not simply a repetition of the names mentioned earlier. Some sites are not on the list, e.g. Mariacki Church, and instead there are new ones, sometimes described in detail, such as the *Galeon* or the Grand Hotel. It is interesting that respondents often comment on their attractiveness, e.g. put remarks like 'not worth visiting' next to the Oceanarium.

The movement paths recorded during the experiment may be analysed in aggregation or separately. Fig. 3 presents data for each group, where the largest one consisting of four, was additionally divided into two parts A and B, because its members got separated into two subgroups during the visit. The paths show both the range of tourism exploration and the most frequently visited places. In all the subgroups, except A and B, we can see the strong domination of the centre of Gdańsk as a place to spend free time – this is probably connected with the location of accommodation. Groups A and B were accommodated in Sopot and spent most of their time there, going on only one trip to Gdynia and in the case of Group B also to the centre of Gdańsk. Those staying in Gdańsk showed large differences in their movement patterns. The single person spent time mainly in the city centre, travelling to the attractions on the city outskirts, i.e. taking individual trips, not arranged in sequence. The only place visited by this person outside the city limits was Sobieszewska Island. Apart from Gdańsk, the couple visited Sopot, and their movement shows that it was strongly concentrated in the very small area of the Old Town. The couple with a child spent relatively the least time in the centre of Gdańsk, staying mostly in the south of the city and in urban greenery areas, such as the Oliwski Park. As the only group living in Gdańsk, they visited Gdynia as well.

Using the data obtained from all the participants, the most popular sites were identified, those where they spent the majority of their time (cf. Fig. 4). The procedure has been described more broadly in another publication (RZESZEWSKI & KOTUS 2014). It is not surprising that the most popular is Gdańsk centre, followed by the centre of Sopot and Gdańsk quay together with Westerplatte. The remaining attractions were visited only occasionally.

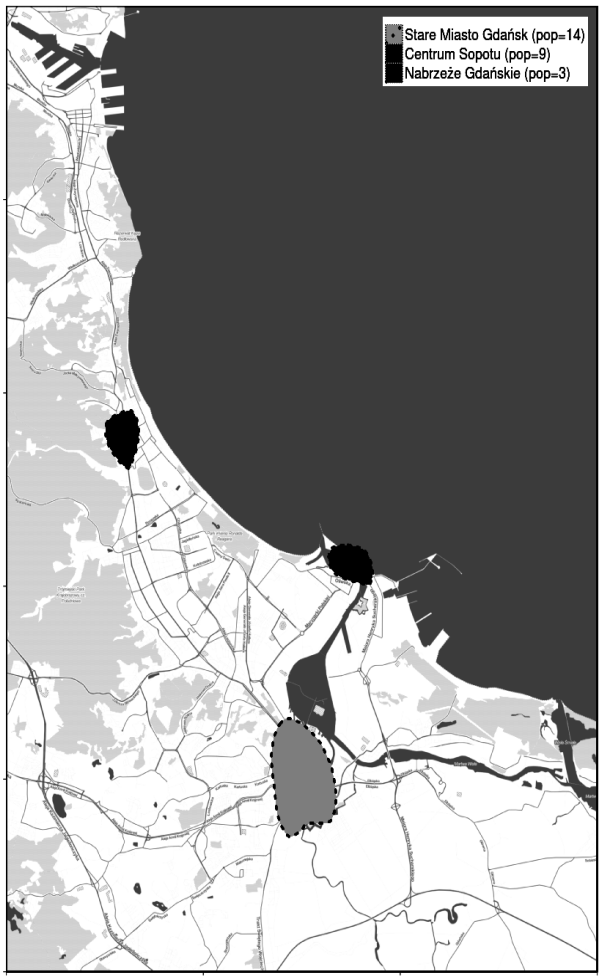


Fig. 4. The most popular places in Trójmiasto. The 'pop' parameter was established on the basis of the number of days when the experiment participants spent a considerable amount of time at a given place – the maximum value equals the sum of days spent in Trójmiasto by all groups (22)
Source: authors

Together the presented methods make it possible to obtain valuable information about tourist behaviours. However, only in their combination do the relationships which could remain unnoticed if interpreted separately show up. The group of students split during the experiment into two subgroups, which is visible in the movement record. The FGI makes it possible to interpret this behaviour – they were divided by sex, and men were less willing to do

the sightseeing, explaining that they were tired. The 'group of three with a child' consisted of grandparents with a granddaughter, for whom Sopot was not attractive in any way, but they decided to visit Gdynia so that their granddaughter could see the ships. For them, less crowded places, such as the Oliwski Park, were more attractive. As regards the 'Couple', the visualization of movement revealed a picture which was difficult to interpret, where on the one hand the exploration area was very small (as for the 'Group'), on the other – they did not spend time at one place. During the group interview it became obvious that they were the only ones who had prepared a very detailed and demanding sightseeing plan, but realized only a small part of it, moving according to the sequence established earlier.

Similarly, the record of paths allows us to add to the conclusions drawn from the sociological method. The most and the least attractive places in the city, pointed out by the experiment participants were not necessarily actually visited during the experiment – we should always consider the possibility of a mistake or a distortion of the idea of space as time passes. The movement paths also made it possible to ascribe ranks to individual sites more objectively e.g. on the basis of the amount of the time spent (cf. Fig. 4). In addition, the information obtained during the group interview makes it possible to name the identified areas and ascribe appropriate functions to them. It is particularly important when satellite location methods are used, in which the error in measuring the position in an urban environment is considerable (MODSCHING, KRAMER & TEN HAGEN 2006). Without additional information, location data alone does not let us determine whether the place analysed is a tourism attraction, an urban greenery area offering recreation while sightseeing, or simply a transport node for the tourists.

5. SUMMARY

The primary aim of the article was discussion concerning the application of 'mixed methods' in research on tourist behaviours. We hope that this purpose has been achieved. From the study undertaken, the use of 'mixed methods' is in our opinion necessary to describe reality relatively fully and fulfill one of the basic postulates of academic work – reaching truth. As a result of 'mixed method' research, the interpretation of results becomes more multidimensional or, to put it metaphorically, 'spacious'. It particularly concerns such a methodologically difficult research subject as tourism. The strengths of 'mixed method' research include its multidimensional character. Recording movement paths allows us to see clearly the 'mechanics' of a tourist's activity, but does not reveal their motivations and psychological effects. Social research increases the interpretational possibilities of measurements made with recording devices, or even make it possible to make such interpretations in a credible way. On the other hand, real movement paths decrease subjectivity in interpretation of behaviours inevitably introduced by the researcher at the analysis stage, and make it possible to confront participants' ideas about space with their actual movements.

The disadvantages or dangers of 'mixed method' research include the risk of an unconscious study of something else by means of the various methods, missing the aim of the study or simply an unintentional use of the 'multiple method' (JIANG 2003). The use of GPS devices, group or individual interviews, projection methods (e.g. mind maps) should be coordinated in such a way that the techniques used offer real methodological triangulation and are oriented towards different views of the same phenomenon, with the same group of subjects participating. Using various techniques is *a priori* connected with activities done at a different time and place, by different researchers. Therefore, these factors may be very misleading. As a result, research should be conducted simultaneously, and not separately. Such research is usually undertaken by more than one person, as it requires a team of experts from different disciplines. This increases the risk of only partial research carried out simultaneously, and not complementarily.

During 'mixed method' research, we must remember that qualitative studies, though often called 'soft techniques', have their own procedures and application requirements. They cannot be used without these procedures because then they would lose strength as a reliable tool. Qualitative sociological studies (e.g. group interviews) are seemingly easy. As a matter of fact, they force the researcher to gain precise social knowledge and skill in making use of it. Without this they cannot be used.

It seems that currently tourism studies have new, promising prospects in which the application of 'mixed method' research will become an obligatory practice. Using methodological triangulation, as presented above, gives researchers a number of challenges. It is felt that the effort put into tackling them may bring effects which are unobtainable when a more traditional approach is taken. It can be hoped that this will create opportunities to build new, better models to describe tourist behaviours in space.

FOOTNOTE

[1] The article was financed from the Narodowe Centrum Nauki (National Science Centre) funds: grant UMO-2011/03/8/HS4/01171.

BIBLIOGRAPHY

AMEDEO D., GOLLEDGE R.G., STIMSON R.J., 2009, *Person – Environment – Behaviour Research: Investigating Activities and Experiences in Spaces and Environments*, Guilford Press, New York, London.

ANDERSON J., 1971, Space-time budgets and activity studies in urban geography and planning, *Environment and Planning* 3, 4, pp. 353-368.

BOTTERILL D., PLATENKAMP V., 2012, *Key Concepts in Tourism Research*, Sage, Los Angeles.

BUTOWSKI L., 2011, Turystyka jako dyscyplina nauki, *Turyzm/Tourism* 21, 1-2, pp. 17-24.

CRESWELL J.W., 2003, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage, Thousand Oaks.

DZIAK J.J., NAHUM-SHANI I., COLLINS L.M., 2012, Multilevel Factorial Experiments for Developing Behavioural Interventions: Power, Sample Size, and Resource Considerations, *Psychological Methods*, 17, 2, pp. 153-175.

EVANS J., JONES P., 2011, The walking interview: Methodology, mobility and place, *Applied Geography*, 31, 2, pp. 849-858.

GARLING T., GOLLEDGE R.G. (eds.), 1993, *Behaviour and Environment: Psychological and Geographical Approaches*, Elsevier Science Publishers, Amsterdam.

GOLLEDGE R.G., KLATZKY R.L., LOOMIS J.M., SPEIGLE J., TIETZ J., 1998, A geographical information system for a GPS based personal guidance system, *International Journal of Geographical Information Science*, 12, 7, pp. 727-749.

GREENBERG RAANAN M., SHOVAL N., 2014, Mental Maps Compared to Actual Spatial Behaviour Using GPS Data: A New Method for Investigating Segregation in Cities, *Cities*, 36, pp. 28-40.

JIANG H., 2003, Stories Remote Sensing Images Can Tell: Integrating Remote Sensing Analysis With Ethnographic Research in the Study of Cultural Landscapes, *Human Ecology*, 31, 2, pp. 215-232.

KITZINGER J., 1995, Introducing focus groups, *British Medical Journal*, 311, pp. 299-302.

KRUEGER R.A., CASEY M.A., 2008, *Focus Groups: A Practical Guide for Applied Research*, Sage, London.

LEE H.J., JOH C.H., 2010, Tourism Behaviour in Seoul: An Analysis of Tourism Activity Sequence using Multidimensional Sequence Alignments, *Tourism Geographies*, 12, 4, pp. 487-504.

LISZEWSKI S., 2008, Miasto jako przedmiot badań geografii turyzmu w Polsce, *Turyzm*, 18, 1, pp. 27-38.

LISZEWSKI S., 2010, Nauka czy nauki o turystyce, *Turyzm/Tourism*, 20, 2, pp. 37-45.

LONGHURST R., 2003, Semi structured interviews and focus groups, [in:] N.J. Clifford, G. Valentine (eds.), *Key Methods in Geography*, Sage, London, pp. 117-132.

MAIK W., MARCINIAK K., PALICH P. (red.), 2005, Teoria i praktyka w turystyce, *Zeszyty Naukowe Wyższej Szkoły Gospodarki w Bydgoszczy*, 2.

MAIK W., PRZYBECKA-MAIK M., 2005, Główne czynniki i płaszczyzny integracyjne w naukach o turystyce, *Zeszyty Naukowe Wyższej Szkoły Gospodarki w Bydgoszczy, Turystyka i Rekreacja*, 3, pp. 25-32.

MARAK J., WYRZYKOWSKI J., 2009, Turystyka jako przedmiot interdyscyplinarnych badań naukowych, *Zeszyty Naukowe Uniwersytetu Szczecińskiego* 567, *Ekonomiczne Problemy Turystyki*, 12, pp. 165-180.

MCKENDRICK J.H., 2009, Mixed and Multiple Methods, [in:] R. Kitchin, N. Thrift (eds.), *International Encyclopedia of Human Geography*, Elsevier, Nowy York, Londyn, pp. 128-133.

MODSCHING, M., KRAMER, R., TEN HAGEN, K., 2006, *Field trial on GPS Accuracy in a medium size city: The influence of built-up, 3rd Workshop on Positioning, Navigation and Communication*, pp. 209-218.

MOLES M., 2008, A Walk in Thirdspace: Place, Methods and Walking, *Sociological Research Online*, 13, 4; http://www.socresonline.org.uk/13/4/2.html; 13.03.2014 r.

MONTELLO D.R., SUTTON P.C., 2006, *Introduction to Scientific Research Methods in Geography*, Sage, Thousand Oaks.

PETTERSSON R., ZILLINGER M., 2011, Time and Space in Event Behaviour: Tracking Visitors by GPS, *Tourism Geographies*, 13, 1, pp. 1-20.

PHILIP L.J., 1998, Combining quantitative and qualitative approaches to social research in human geography An impossible mixture?, *Environment and Planning A*, 30, pp. 261-276.

PODEMSKI K., ISAŃSKI J., 2008, Niektóre problem metodologiczne badań turystów i instytucji turystycznych, [in:] Z. Młynarczyk, A. Zajadacz A. (eds.), *Turystyka i Rekreacja – Studia i Prace*, 2, pp. 151-173.

PRINCE M., BROWN S., HEATHCOTE A., 2012, The Design and Analysis of State-Trace Experiments, *Psychological Methods*, 17, 1, pp. 78-99.

QUIROGA C.A., BULLOCK D., 1998, Travel time studies with global positioning and geographic information systems: an integrated methodology, *Transportation Research Part C: Emerging Technologies*, 6, 1, pp. 101-127.

ROCHELEAU D., 1995, Maps, numbers, text and context: Mixing methods in feminist political ecology, *The Professional Geographer*, 47, 4, pp. 458-466.

RZESZEWSKI M., KOTUS J., 2014, *Supporting movement patterns research with qualitative sociological methods – gps tracks and focus group interviews*, GISRUK 2014, Presented at the GISRUK 2014, Glasgow.

SHOVAL N., ISAACSON M., 2007, Tracking tourists in the digital age, *Annals of Tourism Research*, 34, 1, pp. 141-159.

SHOVAL N., ISAACSON M., 2010, *Tourist mobility and advanced tracking technologies*, Routledge, London.

THORNTON P.R., WILLIAMS A.M., SHAW G., 1997, Revisiting time-space diaries: an exploratory case study of tourist behaviour in Cornwall, England, *Environment and Planning A*, 29, 10, pp. 1847-1867.

THYER B.A., 2012, *Quasi-Experimental Research Designs*, Oxford University Press, Oxford, New York.

TRIBE J., 2006, The truth about tourism, *Annals of Tourism Research*, 33, pp. 360-381.

WYLIE J., 2005, A single day's walking: narrating self and landscape on the South West Coast Path, *Transactions of the Institute of British Geographers*, 30, pp. 234-247.

XIA J., ARROWSMITH C., JACKSON M., CARTWRIGHT W., 2008, The Wayfinding Process Relationships between Decision-Making and Landmark Utility, *Tourism Management*, 29, 3, pp. 445-457.

XIA J., ZEEPHONGSEKUL P., PACKER D., 2011, Spatial and temporal modelling of tourist movements using Semi-Markov processes, *Tourism Management*, 32, 4, pp. 844-851.

ZITO R., D'ESTE G., TAYLOR M.A.P., 1995, Global positioning systems in the time domain: how useful a tool for intelligent vehicle-highway systems?, *Transportation Research Part C: Emerging Technologies*, 3, 4, pp. 193-209.

Sławomir Sobotka
University of Warmia and Mazury in Olsztyn
Department of Landscape Architecture and Agritourism,
slaw116@wp.pl

Anna Długozima
Warsaw University of Life Sciences
Department of Landscape Art
ania.dlugozima@gmail.com

EVALUATION AND DEVELOPMENT OPPORTUNITIES OF THE DISUSED LUTHERAN CEMETERIES WITHIN THE MASKULIŃSKIE AND PISZ FOREST DIVISIONS FOR THANATOURISM

Abstract: This paper presents the results of a study of 67 disused Lutheran cemeteries situated in the Pisz and Maskulińskie Forest Divisions (the southern part of Warmińsko-Mazurskie Province). An inventory of gravestones and vegetation was compiled, and the types, sizes and geographical coordinates of the cemeteries were determined using a GPS receiver. The paper also presents an evaluation of the cemeteries, illustrated through examples in the Maskulińskie Forest Division. The best preserved and/or most interesting cemeteries are going to be included on a tourism trail.

Key words: disused Lutheran cemeteries, thanatourism, memorial sites, cemetery vegetation, evaluation of cemeteries.

1. INTRODUCTION

One element of cultural tourism is thanatourism which focuses on visiting places associated with death (Seaton, 1996). It appears that the protection of disused Lutheran (evangelical) cemeteries and the dissemination of knowledge should be a significant element of this. In the former Olsztyńskie Province, as many as 855 (i.e. 75.2%) out of the 1136 cemeteries established before 1945 were Lutheran (evangelical). In four Masurian districts (Ostródzki, Nidzicki, Szczycieński and Mrągowski), 477 out of 567 cemeteries were Lutheran (evangelical). Therefore, the proportion was higher, and amounted to 84.1%. Most of the cemeteries concerned have been disused for many decades (LEWANDOWSKA 2012).

The disused Lutheran cemeteries in Masuria, when adapted to tourism use, may become perceived today as offering an insight into the complex history of the region, and the resulting ethnic situation before the Second World War. This is because 95.3% of the population within ten Masurian districts, namely Gołdapski, Ełcki, Piski, Mrągowski, Giżycki, Węgorzewski, Olecki, Szczycieński, Nidzicki and Ostródzki, were Protestants. They were both Masurians (Polish-speaking Evangelicals) and, to a lesser degree, of German origin (OLDENBERG 2000).

This paper covers the historical, landscape, and socio-cultural determinants associated with cemeteries in Masuria as well as an evaluation of disused Lutheran cemeteries within the Maskulińskie Forest Division. The research is aimed at establishing a cemetery trail within the Pro-ecological (*Promocyjny*) Forest Complex 'Masurian Forests' (*'Lasy Mazurskie'*).

2. LITERATURE OVERVIEW

Dubos states that "the most lasting monument of a particular community is the type of landscape they have created" (1986, p. 26). Based on the physiognomy of the landscape, the state of preservation, and changes to particular components, the kind of people who used to live there can be recovered. One landscape element is the cemetery (KNERCER 2004).

According to K. REMBOWSKA (2002), a cemetery is a product of culture, and gives the cultural landscape a specific character. This is because a cemetery is a significant component of the landscape, with its diverse symbolism depending on the cultural specificity of a particular community.

A local community is established through becoming rooted, and by respecting history and ancestry, (...) since "*it is the graves of our fathers that connect us most closely with the land on which we have grown up*" (KOWALIK 2006, p. 29). For each community, a cemetery is a special place. There is a view fixed in the consciousness of a society that in a cemetery, the past meets the present (ŁAGUNA 2006), and the community of the living meets the community of the dead (KOLBUSZEWSKI 1996). Furthermore, a cemetery is a source of information on a local community. The same author states that a cemetery is a specific cultural text as it 'speaks volumes' on the fate of its people. It is a reflection of the entire society, its hierarchic character and mentality (THOMAS 1991). In many areas of Poland, particularly following the Second World War, population changes took place, and studies on cemeteries allow the systemising of knowledge on the spiritual and material culture of its then community.

In Polish cultural tradition, a cemetery plays an important role. It is:

- a zone of sacrum (a sacred space whose nature arises from the fact that the mortal remains of many generations have been committed to graves and retained there);
- archives (a collection of information on the history of local communities);
- a museum (a collection of sepulchral works of art reflecting its epoch);
- a park (with considerable natural value, a landscape composition brimming over with sadness, melancholy, and reflections on passing away) (MICHAŁOWSKI 2001);
- source material in the fields of heraldry, genealogy, and biography;
- a source of information on the composition of the community in a particular time;
- an element of landscape, full of symbols;
- a place identifying non-existing settlements;
- a testimony to culture in a particular time (this refers to its state of preservation);
- a testimony to a particular event in the history of a community (e.g. epidemics, war);
- a space of 'tamed death' (in which the living meet the generations that have passed away) (it.mragowo.pl/szlak-sentymentalny-po-starych-cmentarzach,8,1954, pl.html);
- a garden for the living (DŁUGOZIMA 2011);
- a therapeutic space (RHOADS 1995, FRANCIS & KELLAHER 2005);
- a recreational spot (SZUMAŃSKI 2005);
- a meeting place (TANAŚ 2013).

In addition, a cemetery is increasingly perceived as a significant element of spatial development which forms the culture of the space or an image of a settlement unit (TANAŚ 2008).

Studies on cemeteries mainly focus on their vegetation (STYPIŃSKI 1978, DORDA 1985, LISOWSKA *et al*., 1994, HOŁDYŃSKI & ŻURKOWSKA 2001, WIKA *et al*. 2005, CZARNA & PISKORZ 2005, CZARNA & ANTKOWIAK 2008, JĘDRZEJKO & WALUSIAK 2008, MAJGIER & RAHMONOv 2013). To a lesser extent, these are ethnological (ŻURKOWSKA 2008), archaeological (ANDRZEJEWSKI *et al*. 1998), and environmental studies (RAHMONOV *et al*. 2010). Interesting and extensive research was also conducted by A. DŁUGOZIMA (2011) who analysed the historical, social and compositional aspects of cemeteries in the Bieszczady Mountains, and of selected cemeteries in Warmia and Masuria undertaking research on a total of 162 cemeteries.

It is also useful to mention research in relation to the European Landscape Convention. The Convention contains provisions on the need to undertake work on the identification and assessment of landscapes (...), including cultural landscapes. These recommendations were taken into account during research on 13 disused Lutheran cemeteries in the communes of Barwice and Połczyn Zdrój in Zachodniopomorskie Province (BORYSIAK & PILARSKA 2014).

3. CHARACTERISTICS AND CRITERIA FOR THE SELECTION OF THE AREA OF STUDY

According to the data obtained from Forest Inspectorates (2014), in Warmińsko-Mazurskie Province, Lutheran cemeteries are found in 32 (out of 36) Forest Divisions. In total, there are 370, including two in a forest near Popielno administered by the Research Station of the Polish Academy of Sciences. The median for a Forest Division is seven. Most of the disused Lutheran cemeteries i.e. 192 (51.9% of the total) are situated in six Forest Divisions. Five, i.e. Pisz (46)[1], Ełk (43), Borki (31), Drygały (22), and Maskulińskie (21), are situated within Masuria and administered by the Regional State Forest Directorate *(RDLP)* in Białystok. In turn, Srokowo Forest Division (29) is located outside Masuria, and administered by the Regional State Forest Directorate in Olsztyn.

The proportion of well and averagely preserved disused Lutheran cemeteries in the Forest Divisions within Warmińsko-Mazurskie Province amounts to 30% (state of preservation in 2013). The best preserved

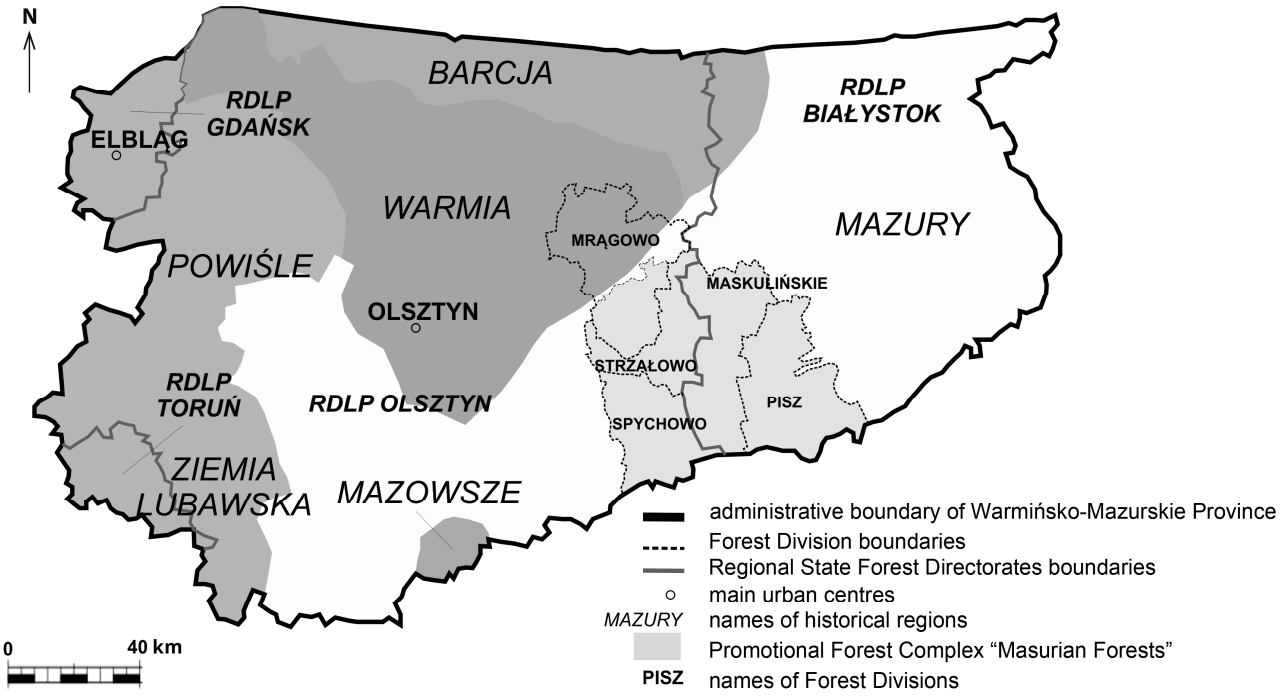


Fig. 1. Historical regions within Warmińsko-Mazurskie province, with marked boundaries of Forest Divisions forming part of the Pro-ecological (*Promocyjny*) Forest Complex 'Masurian Forests'
Source: research by A. Długozima

are found in the Forest Divisions situated in Masuria (ethnically speaking), where Lutheran communities (although not numerous) have survived until the present day in Szczytno, Strzałowo, Maskulińskie, Pisz, Drygały, Borki, and Ełk.

Based on the large number of disused Lutheran cemeteries, and the attractiveness of the natural environment, Forest Divisions immediately adjacent to each other, namely Pisz and Maskulińskie (Fig. 1), were selected.

In 2002, the Pro-ecological (*Promocyjny*) Forest Complex 'Masurian Forests' was established. Its area is 118.233 ha and covers, partially or entirely, 12 communes, primarily Pisz, Ruciane-Nida, Świętajno, and Piecki. The lake density of the area concerned amounts to 20.1% (own calculations based on the Economic and Protective Programme for the Pro-ecological (*Promocyjny*) Forest Complex 'Masurian Forests', 2013, and an environmental map of the 'Masurian Forests' at a scale of 1:100,000). The area is very attractive in terms of its geomorphological structure and natural value, and has a well-developed tourism infrastructure as well as functional tourism trails, hiking, equestrian and cycling routes. The area under study owes its natural wealth to the Puszcza Piska Forest situated at the borders of two different geomorphological formations developed as a result of the activity of the Scandinavian ice-sheet. In the northern part there are areas of end moraines, while in the southern part outwash plains and dunes are predominant. According to Physical Regionalisation of Poland by Kondracki (1998), the complex is situated in the Masurian Lake District macroregion.

The Pro-ecological (*Promocyjny*) Forest Complex 'Masurian Forests' forms part of the natural tourism potential of Masuria. It is situated in the southern part of the Great Masurian Lake District. Within the 'Masurian Forests', 94 disused Lutheran cemeteries are found. The central and north-eastern part of the complex is occupied by the Masurian Landscape Park established in 1977 covering 53,655 ha.

4. LOCATION, COMPOSITION, AND TYPES OF DISUSED LUTHERAN CEMETERIES IN THE MASKULIŃSKIE AND PISZ FOREST DIVISIONS

The provisions of religious law did not require Lutheran communities to locate burial grounds in the vicinity of the place of worship. This resulted in greater freedom in the location and composition of cemeteries.

German regulations provided that a cemetery should be characterised by a simple spatial arrange-

ment, and that both native and ornamental plant varieties should be used. They were required to be located on heights and accentuated in the local landscape by tall plantings, moreover, fencing and a gate were to be provided and the centre of a cemetery emphasized (DŁUGOZIMA 2011).

Within the Maskulińskie Forest Division, 21 disused Lutheran cemeteries are found, located within the areas of four communes, namely Mikołajki (9), Ruciane-Nida (8), Pisz (3), and Orzysz (1). In turn, within the Pisz Forest Division, there are 46 disused Lutheran cemeteries. They are located within the administrative boundaries of three communes: Pisz (38), Ruciane-Nida (4), and Biała Piska (4). In as many as a third of the cemeteries in the Pisz Forest Division, either separated or a number of German wartime sections are found commemorating the soldiers killed in action during the First World War. A total of 67 disused Lutheran cemeteries are situated in the area under study established in the 19th and the first half of the 20th c. Most of them i.e. 69% of the cemeteries exhibit a poor or very poor state of preservation (Table 1).

Table 1. Disused Lutheran cemeteries in the Maskulińskie and Pisz Forest Divisions

Wyszczególnienie	Name of Forest Division		Σ
	Maskulińskie	Pisz	
Number of cemeteries *	21	46	67
Cemetery types:			
L	12	27	39
Ll	0	2	2
Lr	6	0	6
Lr + kw	0	1	1
L + Lr	1	0	1
L + kw	2	16	18
State of preservation:			
– good	4	3	7
– average	3	11	14
– poor	6	14	20
– very poor	8	18	26

*L – Lutheran rural cemetery, Ll – Lutheran foresters' cemetery, Lr – Lutheran ancestral cemetery, L+Lr – Lutheran rural and Lutheran ancestral cemeteries, L+kw – Lutheran rural cemetery with a wartime section, Lr+kw – Lutheran ancestral cemetery with a wartime section.

Source: own study based on research and data obtained at the Maskulińskie and Pisz Forest Inspectorates.

Vanished villages are a characteristic aspect of the Pisz Forest Division. There are 30 of them, and cemeteries are the only thing that has remained. The villages, primarily located in the southern part of Pisz Forest Division, adjoining the boundary, were completely looted in 1945-9.

In both the Maskulińskie and Pisz Forest Divisions, six types of disused Lutheran cemetery were identified:

1) rural cemeteries, e.g. Głodowo Duże, commune of Ruciane-Nida, Cudnochy, commune of Mikołajki. These account for the highest proportion i.e. 58.2% of the total under study;
2) rural cemeteries with the burial sites of soldiers from the First World War, e.g. Ruciane-Nida, Wolisko Duże commune of Pisz, Paski Wielkie, commune of Pisz;
3) ancestral cemeteries established in the vicinity of landed estates, e.g. Łuknajno, commune of Mikołajki;
4) ancestral cemeteries with a wartime section, Wejsuny, commune of Ruciane-Nida;
5) foresters' cemeteries, e.g. Wiartel Mały (until 1945, Wiartel foresters' lodge), commune of Pisz, and Pogobie Średnie (until 1945, Białobrzegi foresters' lodge), commune of Pisz;
6) rural cemeteries connected to an ancestral cemetery (a sectioned-off area), e.g. Kulinowo, commune of Mikołajki.

The size of individual disused cemeteries located on the area of Forest Divisions varies greatly and ranges from 14 m^2 (Kamień, commune of Ruciane-Nida) to 10,000 m^2 (Zełwągi, commune of Mikołajki). A positive correlation exists between the size of a cemetery and its type. Burial grounds established in the vicinity of large villages were the biggest, while ancestral cemeteries were the smallest, e.g. a cemetery in Łuknajno, commune of Mikołajki, with an area of 62 m^2. The median size in the Maskulińskie Forest Division amounts to 462 m^2.

Most often the location of a now disused Lutheran cemetery was selected in highlighted spots in an open landscape i.e. natural heights, artificially raised soil banks, forest margins, and the vicinity of a lake. Moreover, some located on a flat area in the southern part of the Puszcza Piska Forest were accentuated with a small ditch which marked its boundary e.g. Hejdyk, commune of Ruciane Nida, Wądołek, commune of Pisz, and Lipa Przednia, commune of Pisz.

A consequence of an increase in the afforestation of communes following the Second World War is that the current location of cemeteries does not reflect the situation now existing.

5. COMPOSITION AND VEGETATION OF DISUSED LUTHERAN CEMETERIES WITHIN THE MASKULIŃSKIE AND PISZ FOREST DIVISIONS

A plan of a cemetery in the area under research was most often based on a quadrilateral. The cemetery interior often had a main axis with a cross at the end,

usually accentuated by means of an avenue of trees, e.g. small-leaved limes.

Masurians selected for their dead the plants which, according to folk beliefs and symbolism, were supposed to protect the burial ground against the powers of evil, or give reminders of the resurrection (GODET 1997, RICHTER 1995, MACIOTI 2006, MAJDECKA-STRZEŻEK 2008). Certain species of herbaceous plants were also of ornamental importance.

In cemeteries in the Maskulińskie Forest Division, 198 species of vascular plants and ferns were identified, including 21 tree species, 28 shrub species, and 149 herbaceous plant and dwarf shrub species. Plants most often found are common snowberry (14 i.e. 66.7%), lily of the valley (14 i.e. 66.7%), lesser periwinkle (14 i.e. 66.7%), and common lilac (10 i.e. 47.6%). As regards trees, the following should be mentioned: small-leaved lime (15 i.e. 71.4%), and Norway spruce (12 i.e. 57.1%) (DŁUGOZIMA, DYMITRYSZYN & WINIARSKA 2012). Based on research undertaken in the Forest Divisions, it may be concluded that very rare species are found only in a few cemeteries.

6. METHODOLOGY AND RESULTS OF RESEARCH ON DISUSED LUTHERAN CEMETERIES

Studies on the disused Lutheran cemeteries within Pisz and Maskulińskie Forest Divisions were included overview (research of literature, archival materials, and cemetery record sheets), and empirical (analytical) sections. As part of the analytical research, inventories of disused cemeteries within the Maskulińskie (2011) and Pisz Forest Divisions (2014) were compiled.

The data was set out in accordance with a pre-prepared original cemetery assessment data sheet. It allowed the authors to describe the location, composition, and architectural details (gate, fencing, forms of gravestones, sculpture and crosses). In addition, general sketches and photographic documentation was prepared. The following were recorded according to form: a cemetery viewed from the outside, gates and fencing, elements of its composition (axes, connections, interiors, circulation, and others), vegetation,

Table 2. Criteria for the evaluation of disused Lutheran cemeteries (along with scores)

Criterion no.	Criterion name	Scoring
I	Cemetery within the landscape	**Σ = 5**
IA	– clearly seen in the landscape (easily identifiable)	1
IB	– attractively located (vicinity of lake, elevation, scenic connections with the surroundings) (1 point for each feature)	1-3
IC	– connected to a palace-and-park complex, to a village by a preserved avenue	1
II	Arrangement of the cemetery	**Σ = 7**
IIA	Clear sections – whole – individual	 2 1
IIB	Clear representative main avenue	1
IIC	Clear circulation routes	1
IID	Presence of fencing – original – built by foresters (wooden)	 2 1
IIE	Vegetation cover of the cemetery – presence of older forest allowing the reconstruction of the cemetery arrangement	 1
III	Gravestones in the cemetery	**Σ = 4**
IIIA	Gravestones with preserved inscriptions – up to 50% – over 50%	 1 2
IIIB	Original (non-typical) ornaments on (a) gravestone(s), or an original monument/sculpture or a stone cross	1
IIIC	Preserved different forms of commemoration of the dead: gravestones, crosses	1
IV	Other	**Σ = 4**
IVA	Original design aspects e.g. interesting emphasis on he social stratification in the cemetery, a 'peculiar nature' to the cemetery	1
IVB	Interesting associated stories	1
IVC	Persons known from history, buried in the cemetery	1
IVD	*Genius loci*	1
Total score		**20**

Source: research by S. Sobotka & A. Długozima. Modification of the assessment criteria included in: A. DŁUGOZIMA, I. DYMITRYSZYN & E. WINIARSKA (2012).

and characteristic elements of a particular cemetery. The second part of the data sheet allowed a detailed description of preserved and valuable gravestones, and the copying of preserved inscriptions. Furthermore, studies on the location of cemeteries within the settlement landscape were conducted in order to identify the scenic value of a cemetery, and the landscape-and-cultural value of its surroundings. Their size was measured, and its geographical coordinates recorded using a GPS receiver (DŁUGOZIMA, DYMITRYSZYN & WINIARSKA 2012).

Based on King's manual (2004), original and pioneering criteria for the evaluation of disused Lutheran cemeteries were developed (Table 2), carried out from the point of view of their attractiveness for tourism. The following were assessed:

- location within the landscape (clarity, ease of identification, and attractive location);
- spatial arrangement (preserved, easily identifiable elements of composition i.e. sections, the main avenue, circulation routes, original fencing, and individual composition as compared to other cemeteries in the Forest Division);
- gravestones (a large proportion of preserved artefacts, interesting ornamentation, and diverse methods of commemorating the dead);
- other aspects of value associated with the burial ground (interesting stories, events associated with the cemetery, interesting personages buried in the cemetery, and the *genius loci*).

This study presents the evaluation of disused Lutheran cemeteries in the Maskulińskie Forest Division representative in its relation to the average state of preservation of cemeteries in Forest Divisions within Warmińsko-Mazurskie Province. In Warmińsko-Mazurskie Province, 30% exhibita good or average state of preservation, while in the Maskulińskie Forest Division, it is 33%.

The overall median was six, 30% of the maximum of 20. The following were rated the highest (in relation to 100%):

- preserved different forms of commemoration of the dead: gravestones, and cast iron crosses (57%);
- presence of old-growth forest allowing the reconstruction of the cemetery arrangement (57%);
- clarity of sections (52%);
- presence of fencing, most often wooden built by foresters (45%);

In turn, the lowest percentage in relation to a 100% score was obtained by:

Table 3. Results of the evaluation of disused Lutheran cemeteries in the Maskulińskie Forest Division

Item	Village name	Criterion I			Criterion II					Criterion III			Criterion IV				Total score
		Ia	Ib	Ic	IIa	IIb	IIc	IId	IIe	IIIa	IIIb	IIIc	IVa	IVb	IVc	IVd	
1.	Jora Wielka	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**3**
2.	Cudnochy (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**
3.	Cudnochy (2)	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	**13**
4.	Łuknajno	0	0	0	1	0	0	2	1	1	1	0	1	0	0	1	**8**
5.	Łuknajno (Babsty)	0	1	0	2	0	0	1	0	1	0	0	0	1	0	0	**6**
6.	Grabówka	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	**5**
7.	Dziubiele	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	**4**
8.	Zełwągi	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
9.	Lisunie	0	0	0	2	1	1	0	1	1	0	1	0	0	0	1	**8**
10.	Kulinowo	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	**3**
11.	Kamień	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	**3**
12.	Nowa Ukta	0	1	0	2	0	0	1	0	1	0	1	0	0	0	0	**6**
13.	Ukta	1	0	0	2	1	1	1	1	1	1	1	0	0	0	1	**11**
14.	Śwignajno	0	2	0	2	1	1	1	1	2	1	1	0	1	0	0	**13**
15.	Wólka	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	**5**
16.	Ruciane-Nida	1	1	0	2	1	1	1	1	2	1	1	1	1	0	1	**15**
17.	Karwica Mazurska	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	**3**
18.	Karwica	0	0	0	1	1	1	1	1	1	0	1	1	0	0	1	**9**
19.	Karpa	0	0	0	2	0	0	1	0	1	1	1	1	0	0	1	**8**
20.	Hejdyk	0	1	0	1	0	0	1	1	1	0	1	0	0	0	0	**6**
21.	Turośl (osada Dziadki)	1	1	0	1	0	1	1	1	1	0	0	0	0	0	0	**7**
Total score		**4**	**15**	**1**	**22**	**6**	**6**	**19**	**12**	**17**	**8**	**12**	**5**	**3**	**0**	**7**	**137**
Percentage (max. 100%)		**19**	**24**	**5**	**52**	**29**	**29**	**45**	**57**	**40**	**38**	**57**	**24**	**14**	**0**	**33**	**33**

Source: own work based on research.

– absence of names known from history (0%);
– connection of the cemetery with an avenue or a palace-and-park complex (5%);
– interesting stories associated with the cemetery (14%);
– cemetery attractively located (vicinity of lake, elevation, scenic connections with the surroundings), and original design aspects (24% each) (Table 3).

The highest total score was obtained by Lutheran cemeteries in Ruciane-Nida (15 points), Cudnochy (no 2) and Śwignajno (13 points each), Ukta (11), Karwica (9), Łuknajno, Lisunie, and Karp (8 each) (DŁUGO-ZIMA, DYMITRYSZYN & WINIARSKA 2012).

Photo 1. A stone gravestone without inscriptions in the disused Lutheran cemetery in the village of Kocioł Duży (Pisz Forest Division)
(Photograph by S. Sobotka 2014)

Table 4. Attractiveness of disused Lutheran (evangelical) cemeteries in the Maskulińskie Forest Division

Scoring ranges	Attractiveness	Name of village with a cemetery
16–20	very good	–
11–15	good	Ruciane-Nida, Cudnochy (2), Śwignajno, Ukta
8–10	average	Łuknajno, Lisunie, Karwica, Karpa
4–7	poor	Łuknajno (Babsty), Grabówka, Dziubiele, Nowa Ukta, Wólka, Hejdyk, Turośl
0–3	Very poor	Jora Wielka, Cudnochy (1), Zełwągi, Kulinowo, Kamień, Karwica Mazurska

Źródło: research by S. Sobotka.

Table 5. Disused Lutheran cemeteries in Pisz and the Maskulińskie Forest Divisionsplanned to be included on a tourism trail

Village name	Commune name	Cemetery type
Cudnochy	Mikołajki	L
Łuknajno	Mikołajki	Lr
Ukta	Ruciane-Nida	Lr
Śwignajno	Ruciane-Nida	L
Szeroki Bór (Sowiróg)	Ruciane-Nida	L
Ruciane-Nida	Ruciane-Nida	L+kw
Głodowo Duże	Ruciane-Nida	L+kw
Wejsuny	Ruciane-Nida	Lr+kw
Kierzek (adm. Snopki)	Pisz	L+kw
Jeglin	Pisz	L+kw
Wądołek	Pisz	L
Kocioł Duży	Pisz	L+kw

*L – Lutheran rural cemetery, Ll – Lutheran foresters' cemetery, Lr – Lutheran ancestral cemetery, L+kw – Lutheran rural cemetery with a wartime section
Source: research by S. Sobotka.

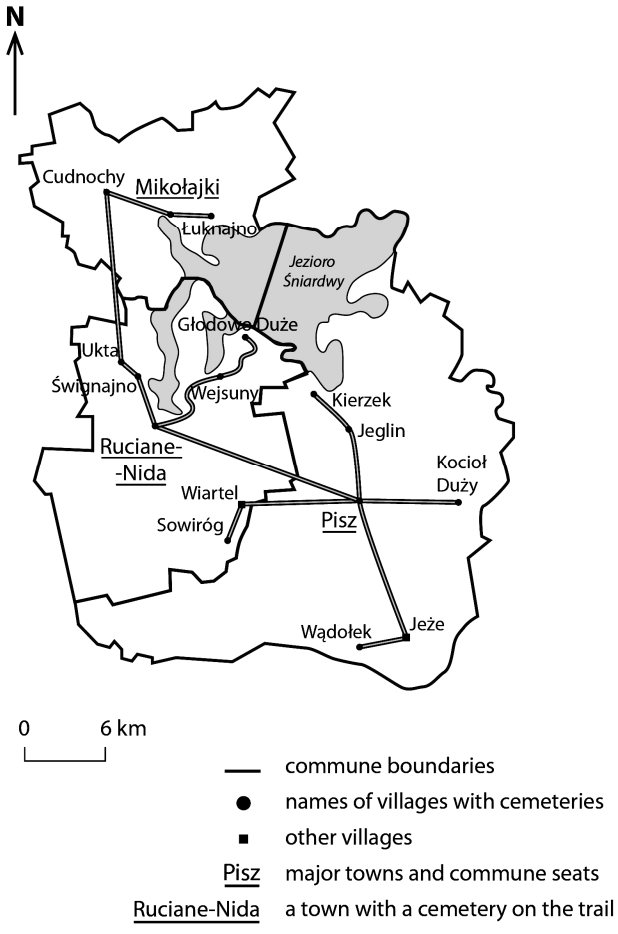


Fig. 2. Villages / towns with disused Lutheran cemeteries in Forest Divisions, for which inclusion has been suggested on a tourism trail (as for Kierzek and Sowiróg, their historical names were retained)
Source: research by S. Sobotka

7. SUMMARY

The perception of the cemeteries being disused and lost as a result of an increase in the afforestation and the 'landscape going wild', as elements which co-develop culture, corresponds to observations of such researchers as G. HOLLY (2007), T. ŻURKOWSKA (2008), and A. DŁUGOZIMA (2011).

The concept of making use of the thanatourism potential of Masurian burial grounds harmonises with the observations made by S. TANAŚ (2008), according to which a cemetery promoted as a tourism attraction may be an element of tourism space with cultural value. In addition to conservation works as included in the Act on the protection and conservation of monuments of 2003 (Journal of Laws No 162, item 1568, as amended), according to researchers of sepulchral spaces, for example J.S. PASIERB (1995), T. RUDKOWSKI (2004), G. HOLLY (2007), and T. ŻURKOWSKA (2008) – the very fact of documenting them for posterity is significant. This also results in the tourism potential of Masurian necropolises, hidden in their history (witnesses of the past), uniqueness (a disappearing element of the Masurian landscape), the aesthetics and artistry of the preserved sepulchral art, and their location within the Masurian landscape.

FOOTNOTES

[1] In brackets, the number of disused Lutheran cemeteries in a Forest Division.

BIBLIOGRAPHY

ANDRZEJEWSKI M., SOCHA T., 1998, Fosfor i jego przydatność w badaniach archeologicznych, [in:] W. Śmigielski (ed.), *Nauki przyrodnicze i fotografia lotnicza w archeologii*, 9, Poznań, pp. 57-63.

BORYSIAK J., PILARSKA E., 2014, *Cechy tożsamości obszaru młodoglacjalnego w architekturze Krajobrazu nieczynnych cmentarzy ewangelickich (Pomorze Zachodnie, Polska)*, Ogólnopolska konferencja naukowa „Przyroda, krajobraz, człowiek", Barcin 26–27 czerwca 2014, Stowarzyszenie Ekologiczne w Barcinie, Urząd Miasta i Gminy Barcin, Barcin.

CZARNA A., ANTKOWIAK W., 2008, Vascular plants in the former old town evangelical cemetery in Wschowa (The Wielkopolska Region), *Botanika-Steciana*, 12, pp. 71-78.

CZARNA A., PISKORZ R., 2005, Vascular flora of cemeteries in Zakopane town in the Tatry Mountains, *Roczniki Akademii Rolniczej w Poznaniu*, 373 (9), pp. 47–58.

DŁUGOZIMA A., 2011, *Cmentarze jako ogrody żywych i umarłych*, Warszawa.

DŁUGOZIMA A., DYMITRYSZYN I., WINIARSKA E., 2012, *Wytyczne do rewaloryzacji i ochrony nieczynnych cmentarzy ewangelickich Nadleśnictwa Maskulińskie. Inwentaryzacja, analiza i ocena cmentarzy na terenie nadleśnictwa Maskulińskie*, Warszawa (typescript).

DORDA A., 1995, Ciekawostki dendrologiczne na cmentarzu żydowskim w Cieszynie, *Wszechświat*, 86, 12, pp. 320-321.

DUBOS R., 1986, *Pochwała różnorodności*, PIW, Warszawa.

FRANCIS D., KELLAHER L., 2005, *The Secret Cemetery*, Berg Publishers, Oxford.

GODET J.D., 1997, *Drzewa i krzewy. Rozpoznawanie gatunków*, Warszawa.

HOLLY G., 2007, Stan zachowania zabytkowych cmentarzy chrześcijańskich na terenie Bieszczadzkiego Parku Narodowego, *Roczniki Bieszczadzkie*, 15, pp. 305-342.

HOŁDYŃSKI C., ŻURKOWSKA T., 2001, Drzewa i krzewy opuszczonych cmentarzy w Mazurskim Parku Krajobrazowym, *Rocznik Dendrologiczny*, 49.

JĘDRZEJKO K., WALUSIAK E., 2008, Flora gatunków naczyniowych oraz ich zespoły i mikrozbiorowiska na wybranych cmentarzach w regionie Podbeskidzia Zachodniego (Polska Południowa), *Ekologia*, 3, pp. 77-98.

it.mragowo.pl/szlak-sentymentalny-po-starychcmentarzach, 8, 1954, pl.html; 29.12.2014 r.

KING G.G., 2004, *Michigan Historic Cemeteries Preservation Guide*, Charter Township of Canton, Michigan.

KNERCER W., 2004a, *Cmentarze w krajobrazie*, Olsztyn (typescript).

KNERCER W., 2004b, Ocalić od zapomnienia, *Rocznik Mazurski*, 4.

KOLBUSZEWSKI J., 1996, *Cmentarze*, Wyd. Dolnośląskie, Wrocław.

KONDRACKI J., 1998, *Geografia fizyczna Polski*, PWN, Warszawa.

KOWALIK S., 2006, Społeczność lokalna a kultura lokalna, [in:] A.W. Brzezińska, A. Hulewska, J. Słomska (eds.), *Edukacja regionalna*, Warszawa.

LEWANDOWSKI I., 2012, *Trudne dzieciństwo ziemi. Warmia i Mazury 1945–1989*, Olsztyn.

LISOWSKA M., SUDNIK-WÓJCIKOWSKA B., GALERA H., 1994, Flora cmentarzy lewobrzeżnej Warszawy – wybrane aspekty analizy siedliskowej, *Fragmenty Floristica et Geobotanica Series Polonica*, 1, pp. 19–31.

ŁAGUNA W., 2006, Rola starych cmentarzy w strukturze małych miast na przykładzie miasta Dzierzgonia, [in:] J. Rylke (ed.), *Przyroda i miasto*, t. VIII, Warszawa.

MAJGIER L., RAHMONOV O., 2013, Zróżnicowanie roślinności w obrębie porzuconych cmentarzy ewangelickich na terenie gminy Ryn, [in:] *Cmentarze i ogrody w krajobrazie. O sacrum, symbolice, kompozycji i przemijaniu, Prace Komisji Krajobrazu Kulturowego*, 22, Sosnowiec.

Leśny Kompleks Promocyjny Lasy Mazurskie Puszcza Piska. Mapa przyrodnicza skala 1: 100 000, Studio Avalon, Olsztyn.

MACIOTI M.I., 2006, *Mity i magie ziół*, Kraków.

MAJDECKA-STRZEŻEK A., 2008, Ukryta symbolika ogrodów, *Zieleń Miejska*, 11, p. 18.

MICHAŁOWSKI A., 2001, Architektura krajobrazu w końcu XX wieku. Znaczenie i zadania, [in:] *Krajobraz kulturowy. Warsztaty dla nauczycieli i metodyków. Zeszyt dydaktyczny*, Warszawa.

OLDENBERG F.S., 2000, *Przyczynek do poznania Mazur*, Warszawa.

PASIERB J.S., 1995, *Ochrona zabytków sztuki kościelnej*, Warszawa.

Plan Ochrony Mazurskiego Parku Krajobrazowego, 2012, Krutyń.

Program gospodarczo-ochronny Leśnego Kompleksu Promocyjnego „Lasy Mazurskie", 2013, RDLP w Białymstoku i Olsztynie.

RAHMONOV O., JĘDRZEJKO K., MAJGIER L., 2010, The secondary succession in the area of abandoned cemeteries in northern Poland, [in:] *Landscape ecology-methods, applications and interdisciplinary approach*, M. Barancokova, J. Krajci, J. Kollar, I. Belcakova (eds.), Institute of Landscape Ecology, Slovak Academy of Sciences, Bratislava, pp. 647–657.

REMBOWSKA K., 2002, *Kultura w tradycji i we współczesnych nurtach badań geograficznych*, Łódź.

RHOADS L., 1995, *Death's Garden: Relationships with Cemeteries*, Automatism Press, San Francisco.

RICHTER G., 1995, Kryteria planowania zieleni na cmentarzach, [in:] O. Czerner, J. Juszkiewicz (eds.), *Sztuka cmentarzy*, Wrocław.

RUDKOWSKI T., 2004, O ochronę cmentarzy zabytkowych, *Ochrona Zabytków*, 1-2, pp. 104-114.

SEATON A.V., 1996, Guided by the dark: from thanatopsis to thana-tourism, *International Journal of Heritage Studies*, 2(4).

STYPIŃSKI P., 1978, Drzewa i krzewy cmentarzy Olsztyna, *Rocznik Dendrologiczny*, 35, pp. 153-161.

SZUMAŃSKI M., 2005, *Strukturalizacja terenów zieleni*, Wyd. SGGW, Warszawa.

TANAŚ S., 2008, *Przestrzeń turystyczna cmentarzy. Wstęp do tanatoturystyki*, Łódź.

TANAŚ S., 2013, Cmentarz jako przestrzeń spotkań, [in:] B. Krakowiak, A. Stasiak, B. Włodarczyk (eds.), *Kultura i turystyka – miejsca spotkań*, Łódź, pp. 323–334.

THOMAS L.V., 1991, *Trup: czyli od biologii do antropologii*, Łódź.

WIKA S., BŁOŃSKA A., URBANEK D., 2005, Szata roślinna nekropolii Katowic i Rybnika – studium porównawcze, [in:] *Kształtowanie środowiska geograficznego i ochrona przyrody na obszarach uprzemysłowionych i zurbanizowanych*, Wydział Biologii i Ochrony Środowiska, Wydział Nauk o Ziemi, 36, pp. 61-67.

ŻURKOWSKA T., 2008, *Mazurskie cmentarze. Symbole w krajobrazie*, Borussia, Olsztyn.

Józef Girjatowicz
University of Szczecin
Department of Hydrography and Water Management
girjatjp@univ.szczecin.pl

ICE PHENOMENA AS A TOURISM ASSET ON THE SOUTHERN COAST OF THE BALTIC SEA

Abstract: The aim of the paper is to present selected ice phenomena occurring on the waters of the southern coast of the Baltic Sea which may be of tourism value. On the basis of his own observations and research over the period 2002-11, the author analysed interesting ice phenomena documented in 20 photographs showing in the main ice forms (grease ice ridges, ice hummocks, thrust ice). The photographs present the sea (8), lagoons (7) and lakes (5). The author has included brief descriptions of selected ice phenomena, focusing on interesting forms and their origins, which may encourage potential tourists to observe and explore ice-covered water bodies. Ice tourism could be a part of cognitive, environmental, specialist, hiking, winter, seasonal or even occasional tourism.

Key words: ice tourism, photographs of ice phenomena, ice phenomena, tourism assets, southern coast of the Baltic Sea.

1. INTRODUCTION

Fragmentary information about ice phenomena as a tourism asset can be found mainly in photo albums devoted to the landscapes and wildlife of the southern Baltic Sea (SURDYKOWSKI 1975, TERMANOWSKI & TOMCZAK 1987, CZASNOJĆ 2007), Western Pomerania (CZASNOJĆ & CZASNOJĆ 2000, CZASNOJĆ 2006, REMBAS 2011) or towns on the coast (CZASNOJĆ *et al*. 2002, CZARNECKI 2004). Some photographs of ice phenomena can be found in monographs on the natural environment of the Polish coast (HOFFOWA 1969, BORÓWKA *et al*. 2002, GRZEGORCZYK 2011).

Interesting ice phenomena have also been documented in specialist publications, such as ice albums (JEVGENOV 1955), ice formation catalogues (GIRJATOWICZ 2007), and others on the theme of ice (BLÜTHGEN 1954, WMO… 1970, ZAKRZEWSKI 1983). Ice phenomena have been largely ignored in tourism publications and the author's aim is to present selected ice phenomena on the waters of the Southern Baltic Sea which may be of tourism value. The information about ice as a tourism attraction may interest potential tourists and become a part of nature-related cognitive tourism.

Based on his own observations and research conducted on the southern coast of the Baltic Sea, as well as an analysis of 20 ice photographs, most of which were taken between 2002 and 2014, the author describes various types of ice, especially deformed ice. The phenomena were observed and photographed mainly on the sea shore (8), in lagoons (7), as well as on lakes (5). The author presents brief descriptions of these ice phenomena and draws the reader's attention to interesting forms and their origins. In order to recognize their attractiveness and define development prospects for ice tourism, a SWOT analysis was conducted. The acronym SWOT stands for Strengths, Weaknesses, Opportunities and Threats and are used for the factors classifying the capabilities of a given tourism asset (http://www. iso.org.pl/).

2. SELECTED TYPES OF ICE

The most interesting ice phenomena appear on large water bodies, such as seas and their coastal waters in particular. Equally interesting, often different ice phenomena appear on the edges of coastal lagoons and lakes. Various ice forms on the southern coast of the Baltic Sea can be usually observed from January to March, and only when there are suitable weather

conditions. The most important meteorological factor of ice phenomena occurrence is usually a few days (for lakes and lagoons) and several days long (for seas) period of negative air temperatures. An important role is also played by cloudiness and wind, which causes water movement. Ice forms on the coasts of large water bodies are less affected by snow, hail or rain. Ice phenomena take various courses depending on the size and depth of the water body and take different forms at different distances from the coastline.

The movements of water, mainly waves, deform the ice along the shore (LUTKOVSKIJ 1957, JAWORSKI 1967, GIRJATOWICZ 1999). At the beginning of winter, floating grease ice[1] is usually thrown onto the shore by strong onshore winds and waves, forming a characteristic grease ice ridge with a very steep, often concave windward slope (GIRJATOWICZ 2015b). On the southern coast of the Baltic Sea, such an ice ridge usually extends along the shore over a distance of many kilometres, is several metres wide and 1-3 metres high. Photo 1 presents a grease ice ridge in Dziwnówek, on 23rd February 2012, consisting of several steps while tourists and spa patients refer to such ice forms as 'frozen waves'. The windward slopes of these ridges are usually vertical, with uneven, jagged edges. In some places, especially along groynes, they may stretch further out to sea (Photo 2). Between individual steps on the grease ice ridge there are surfaces slightly tilted towards the land, resembling terraces (Photo 1).We can occasionally see tourists strolling along these terraces, but they prefer to walk on the beach, along the leeward slopes of the grease ice ridge. In contrast to the windward slopes, the leeward slopes are much less cold (Photo 3). Photo 3 shows the leeward slope of a grease ice ridge, together with a small lake and the beach, seen from the land side in Dziwnówek, on 23rd February 2012. In milder periods (>0°C), grease ice ridge deposits (mainly sand, but occasionally also amber) are left by the melting ice. Higher insolation of the leeward slopes makes the ice melt faster, uncovering sand, and it becomes grey (Photo 3). As a result of ice melting, elongated small lakes appear at the foot, a tourism attraction too.

During a storm, when the water level rises, grease ice ridges are formed higher up the beach and niches resembling grottos may be formed on their vertical windward walls. Photo 4 presents such an 'ice grotto', about 2 m in length, 0.5 m in width and up to 1.5 m in height, in Międzyzdroje on 15th January 2011. Along the coast, there may be fractures in the grease ice ridge which appear as a result of their 'wedging through' or wave abrasion[2]. These are openings through which it is easy to reach the sea (Photo 5). Photo 5 shows such an 'ice gate' in grey, weathered ice in Międzyzdroje on 15th January 2011.

Waves undercut the base of the grease ice ridge and a bottom niche is formed, threatening the stability of the ridge (Photo 2). As a consequence, large pieces of the grease ice ridge front break off. Photo 6 shows fragments of a grease ice ridge resembling 'ice boulders', near Międzyzdroje, on 18th February 2012. They are usually observed by tourists during warmer periods after storms. Storm waves sometimes transport them far up the beach. The 'ice boulders' lying far from the sea, out of the waves' reach, are the longest lasting fragments of the grease ice ridge. Looking from the sea, apart from the bottom niches, openings in the ridge may appear (Photo 7). Photo 7 shows a hole through a grease ice ridge, viewed from the leeward side of the ridge. It has an elliptical shape and is about 1 x 3 m in size. It was photographed in the Międzyzdroje area on 18th February 2012. Such 'tunnels in ice' usually appear during milder periods as an effect of waves.

Interesting ice phenomena may also be watched from a pier. During ice movements, it is possible to observe ice phenomena connected with deformations, such as ice rafting, piling, as well as cutting a floe or an ice field by hydraulic structures built in the water itself. Photo 8 shows floes cut into pieces by the pier piles in Międzyzdroje as a result of drifting. Piers are convenient and safe places from which it is possible to observe interesting and, especially, dynamic ice phenomena.

Smaller water bodies, such as coastal lagoons, also offer rare ice phenomena. These sheltered bodies of water with relatively weak waves are mostly covered with ice. Only towards the end of winter does the permanent ice cover disintegrate and an ice run begin. Inland ice thrusts, caused by strong winds may even exceed 100 m (ORVIKU *et al.* 2011, LEPPÄRANTA 2013, GIRJATOWICZ 2015a). Such thrusts on the southern coast of the Baltic Sea are observed in the Szczecin and Vistula Lagoons. Photo 9 shows a thrust of ice 140 m inland near Frombork, on 11th February 2011. Ice thrusting onto the shore is a dangerous and destructive phenomenon and should be observed from a distance or from raised ground. Such flat ice enables tourists to walk safely or go skating, however, during milder periods and due to insolation, the ice quickly rots[3].

Another interesting ice phenomenon is ice hummocking, also caused by strong winds. The height of ice hummocks on the Baltic Sea usually varies from a metre or so (LUNDBECK 1931, CORRENS 1973, ALESTALO AND HÄIKIÖ 1976, GIRJATOWICZ 2014) to several metres (SLAUCITAJS 1929, KRAUS 1930, ORVIKU 1965). Hummocks appear along the

coast, in front of clumps of vegetation, human hydraulic structures and other obstacles which get in the way of thrusting ice. On the shore, ice hummocks most often appear on the windward (eastern and southern) coasts of the Szczecin (Photo 10) and Vistula Lagoons (Photo 11). Photo 10 shows a hummock about 3 m in height, in the north-eastern part of Szczecin Lagoon (on the Rów Peninsula) on 8th February 2011. From the leeward side of this hummock one can see trees bent due to frequent ice thrusts. Photo 11, on the other hand, shows the leeward side of a hummock, about 4 m high, on the south-eastern coast of Vistula Lagoon near Frombork, on 16th March 2011. In the background, one can see the 14th-18th century historical cathedral complex in Frombork.

Grease ice ridges occur not only on the sea coast, but also on the banks of coastal lagoons. The height of lagoon ridges is much lower than on the sea coast and does not exceed 1 m. Their forms are varied and sometimes take on fantastic shapes (Photo 12). Photo 12 presents canals, tunnels, cones and shell forms made from grease ice during wave movements. These ice forms were created in front of the cliff in Miroszów, in Szczecin Lagoon, on 13th December 2010.

Grease ice, shuga[4], ice rind or fine floes may form into pancake ice during wave movements. Pieces of pancake ice are round, with characteristic raised edges, formed as a result of colliding. Photo 13 shows pancake ice, mostly about 1 m in diameter, frozen into fast ice, near Podgrodzie, in a small bay of Szczecin Lagoon, on 11th February 2012. Walking on such ice of suitable thickness is safe but difficult because of its rough surface.

In contrast, on smooth fast ice of appropriate thickness, one can do any kind of winter sport. Smooth, transparent fast ice created from ice rind[5] makes it possible to observe life underwater (e.g. fish). Photo 14 shows smooth, transparent ice cover near the beach in the Czarnocin area, in Szczecin Lagoon, on 25th January 2014. On the left side of the photo, one can see people taking photographs of the 'under-ice' life. The ice features lighter lines which separate sheets of ice rind, which turned into fast ice cover as a result of growth in ice thickness.

Interesting ice forms may also appear on reeds during wave movements and the lowering of the water level. Such iced reeds have an elongated shape, depending mainly on temperature, movements of water and the rate of fall in water levels. In the sun, such 'icicles' glisten with differing intensities. Photo 15 shows iced reeds resembling melted candlewax or firs in the Czarnocin area in the Szczecin Lagoon, on 25th January 2014. Below these 'ice firs' we can see some sheet ice hanging on the reed, formed at a time of even water levels

Interesting ice phenomena may also occur on lakes. Tall hummocks may appear on large coastal lakes, similar to lagoons and photo 16 shows an ice field and hummocks in the north-eastern part of Łebsko Lake (Rąbka). These phenomena were observed from the observation tower in Rąbka, on 3rd March 2013. Such bright white 'icebergs' rising above the reed bed are visible from a distance of many kilometres. In the top left corner of the photograph, on the horizon (Photo 16), we can see Rowokół Hill (115 m above sea level) in the Słowiński National Park (Smołdzino). In the top right corner of the photo, on the horizon, we can see the Łeba Dunes (lighter hue). They are mobile dunes, descending directly to Łebsko Lake near Madwiny.

At the beginning of winter, on coastal lakes, we can observe lower forms of piled ice, built of thrusting ice rind. Depending on the position of the sun, the piles may have a yellowish-orange hue. Photo 17 shows a hummock, about 1.5 m in height, on the northern part of Łebsko Lake on 19th December 2002. The hummock was formed at the edge of a shoal at the dune coast near Madwiny, and was consolidated (frozen) into fast ice cover.

After the ice disappears from the lakes, there may still remain firmly bonded ice piles which are weathered hummocks crumbling at the edges. Photo 18 shows a hummock built of brash ice, with a crumbling steep windward slope in the south-eastern part of Lake Gardno (Gardna Mała), on 18th March 2005. Due to poor visibility (falling snow), it was impossible to see the opposite shore of the lake.

On lakes which are under a strong influence from the sea, considerable fluctuations of water levels are observed. They can be seen in the occurrence of multi-layer ice rind forming in reed beds when the water level has fallen. Photo 19 shows three layers of ice rind on Lake Dąbie near Lubczyna, on 25th January 2014. When the water level was falling, at stagnation periods the next, lower, layers of ice rind were forming. Similar ice phenomena may occur on tree trunks during floods. During frosty weather and when the water level is dropping, ice rings are formed around tree trunks (Photo 20). Photo 20 shows such a phenomenon on Lake Miedwie near Miedwiecko, on 1st March 2011. The rings, resembling mushroom caps, were up to 1 m in diameter. In the background of the photo, we can see smooth, thick ice cover, on which all types of ice sports (e.g. skating or ice boating) can be undertaken.

3. ASSESSMENT OF THE USEFULNESS OF ICE PHENOMENA IN TOURISM

Ice phenomena in the temperate climate zone occur periodically, sometimes just occasionally. Therefore, ice phenomena have rarely been presented in publications as something which could be interesting to tourists. There are many reasons for this, for instance:

- they are ephemeral phenomena which occur in winter when daytime temperatures fall below 0° C;
- tourism in winter is significantly limited, compared to summer (holiday season). At this time of year, the weather is usually cloudy or overcast. Poor visibility (fogs, mists) and frequent precipitation does not encourage tourism;
- ice on lakes and coastal lagoons usually occurs in the form of ice cover, while on the sea - in the form of coastal ice and floes which do not raise much interest.

In order to present an evaluation of the attractiveness and potential development of ice tourism, the author conducted a SWOT analysis concerning ice phenomena occurring on the southern coast of the Baltic Sea. The strengths (S) are as follows:

- direct contact with the sea;
- severity and spontaneity of nature;
- an ecologically clean and touristically attractive area;
- easy direct access to ice forms, e.g. from a beach or a pier;
- the uniqueness and specificity of ice forms (e.g. ice piled up);
- aesthetic impressions, e.g. photo-optical;
- a developed tourism infrastructure on the coast;
- mass seaside tourism;
- other forms of recreation are limited in winter;
- good access to the coast by transport;
- proximity of large urban centres.

The weaknesses (W) include:

- seasonality and in some years even lack of ice phenomena;
- irregularity and incidental character of ice phenomena;
- mostly unfavourable weather conditions in winter and a short day (low insolation) making tourism activity, including ice tourism, difficult;
- the small group of tourists interested in ice phenomena;
- demanding proper preparation from the tourist, typical of specialized tourism;
- lack of knowledge about ice phenomena;
- lack of interest in ice phenomena on the part of local authorities;
- lack of promotion.

Opportunities:

- a growing interest in extreme and unique phenomena, including ice phenomena;
- striving for whole-year exploitation of hotel accommodation during periods outside the holiday seasons;
- further development of tourism service infrastructure, tourism, recreation and sports centres on the coast;
- the development of winter tourism in the coastal zone.

Threats:

- climate warming and rarer occurrence of ice phenomena;
- the unpredictability of suitable weather in the winter season and conditions enhancing the formation of interesting ice forms.

The SWOT analysis shows that strengths prevail over weaknesses and opportunities over threats. The uniqueness and specificity of ice forms, good accessibility, the attractiveness of the sea, and limits to other forms of tourism or recreation on the beach in the winter, may be an opportunity to discover interesting ice phenomena, and consequently to increase winter tourism or even develop year-round tourism centres on the coast. However, the seasonality and scarcity of ice phenomena, the usually unfavourable weather conditions in winter and short day length may weaken the will to discover interesting ice phenomena and develop ice tourism. A limitation to the development of ice tourism may be climate warming – rarer ice phenomena, and in consequence, less interest in them. A chance for ice tourism could be in the promotion of ice phenomena as a tourism attraction.

4. SUMMARY

The photographs and their descriptions presented in this paper may inspire potential tourists to observe and explore ice-covered water bodies and their accompanying phenomena. Tourism could start at

the beginning of the ice season when new forms of ice appear, such as grease ice, slush, pancake ice, ice rind, grease ice ridges, ice rafting and piling, until the end, when there is also floe and brash ice, floe rafting, ice hummocks and ice thrusting onto land.

Considering the main motivation for travel, to observe and discover ice phenomena, ice tourism, which is a type of nature-related tourism, functionally could be regarded as a form of cognitive tourism. As regards other forms – it could be environmental tourism. Ice tourism should also be included as specialist tourism – e.g. hiking, it requires the tourist to be suitably prepared (physically and mentally), physically fit, properly dressed (warm clothes, crampons), and to have knowledge about ice phenomena. On the other hand, due to the season, ice tourism is a part of winter tourism and concerns the 'ice season', i.e. the period between the occurrence of the first ice and the day of the disappearance of the last. The length of the ice season on the southern coast of the Baltic Sea varies (GIRJATOWICZ 2011). It is longest on coastal lakes (85-100 days, on average) and on lagoons (70-100 days on average), and shorter on the sea coast (5-10 days on average). The length of the ice season for individual water bodies may vary greatly and depends mainly on the severity of winters, the area and depth of the water.

FOOTNOTES

[1] Grease ice – a thick layer of ice crystals clumped together.

[2] Wave abrasion – destructive effect of sea waves.

[3] Rotten ice – weathered (porous), disintegrating ice.

[4] Shuga – concentrations of porous lumps of white ice, a few to several centimeters in diameter.

[5] Ice rind – crumbly, shiny, icy crust, up to 5 cm thick, forming on still waters.

BIBLIOGRAPHY

ALESTALO J., HÄIKIÖ J., 1976, Ice features and ice-thrust shore forms at Luodonselkä, Gulf of Bothnia in winter 1972/73, *Fennia*, 144, Helsinki.

BLÜTHGEN J., 1954, Die Eisverhältnisse der Küstengewässer von Mecklenburg-Vorpommern, *Forschungen zur Deutschen Landeskunde*, 85.

BORÓWKA R., FRIDRICH S., HEESE T., JASNOWSKA J., KOCHANOWSKA R., OPĘCHOWSKI M., STANECKA E., ZYSKA W., 2002, *Przyroda Pomorza Zachodniego*, Wyd. Oficyna in Plus, Szczecin.

CORRENS M., 1973, Eisverhältnisse des Peenestrom-Haffgebietes – ein Beitrag zur Hydrographie der Gewässer an der Südlichen Ostseeküste, *Petermanns Geographische Mitteilungen*, 117(4), pp. 268-278.

CZARNECKI G., 2004, *Stettin – Szczecin,* Wyd. Publisher's, Szczecin.

CZASNOJĆ M., 2006, *Pomorze Zachodnie*, Wyd. Zapol, Szczecin.

CZASNOJĆ M., 2007, *Bałtyk*, Wyd. Bosz, Olszanica.

CZASNOJĆ M., CZASNOJĆ M., 2000, *Pomorze Zachodnie*, Wyd. Radwano Jan Topolewski, Warszawa.

CZASNOJĆ M., ARSOBA J., NOWAK K., BUCHHEISTER G., 2002, *Świnoujście*, Wyd. Zapol, Szczecin.

GIRJATOWICZ J.P., 1999, Structural variability of near-shore ice and its abrasive effects in sheltered and exposed areas. Late Glacial, Holocene and present-day evolution of the coastal geosystems of the Southern Baltic, [in:] R.K. Borówka (ed.) *Quaternary Studies in Poland*, Special issue, pp. 103-107.

GIRJATOWICZ J.P., 2007, *Katalog zlodzenia i warunków termicznych polskiego wybrzeża*, Wyd. Naukowe Uniwersytetu Szczecińskiego, Szczecin.

GIRJATOWICZ J.P., 2011, Ice Conditions on the Southern Baltic Sea Coast, *Journal of Cold Regions Engineering* 25(1), pp. 1-15.

GIRJATOWICZ J.P., 2014, Ice thrusting and hummocking on the shores of the Southern Baltic sea's coastal lagoons, *Journal of Coastal Research* 30(3), pp. 456-464.

GIRJATOWICZ J.P., 2015a, Forms of onshore ice thrusting in coastal lagoons of the southern Baltic sea, *Journal of Cold Regions Engineering* 29(1), pp. 1-17.

GIRJATOWICZ J.P., 2015b, *Forms of grease ice ridge on the southern Baltic Sea*, unpublished.

GRZEGORCZYK K., 2011, *Przyroda Wolińskiego Parku Narodowego*, Wyd. Woliński Park Narodowy, Międzyzdroje.

HOFFOWA M., 1969, *Na Wybrzeżu Słowińskim*, PZWS, Warszawa.

JAWORSKI W., 1967, *Badania Zatoki Pomorskiej i wód przyległych w latach 1965–1966*, unpublished, Obserwatorium Ujściowe w Świnoujściu.

JEVGENOV N.I., 1955, *Al'bom ledovych obrazovanij na morjach. Gidrometeoizdat*, Leningrad.

KRAUS E., 1930, *Űber Eisschubberge. III Hydrologische Konferenz der Baltischen Staaten*, Warschau.

LEPPÄRANTA M., 2013, Land-ice interaction in the Baltic Sea, *Estonian Journal of Earth Sciences* 62(1), pp. 2-14.

LUNDBECK J., 1931, Eisschiebungen am Kurischen Haff, *Natur und Museum* 61(1), pp. 36-40.

LUTKOVSKIJ S.V., 1957, *Formation of ice on lakes, rivers and sea*, Izdatel'stwo Akademii Nauk SSSR, Moskva.

ORVIKU K.K., JAAGUS J., TÕNISSON H., 2011, Sea ice shaping the shores, *Journal of Coastal Research*, Special Issue 64, pp. 681-685.

ORVIKU K.K., 1965, Accumulations of erratic boulders on the Estonian coast, *Okeanologia* 5(2), pp. 316-321.

REMBAS M., 2011, *Zachodniopomorskie tajemnice*, Walkowska Wyd. Jeż, Szczecin.

SLAUCITAJS L., 1929, Spaltenbildung in der Eisdecke und Eisschiebungen an der Küste des Rigaschen Meerbusens im Winter 1928/29, *Annalen der Hydrographie und Maritime Meteorologie* 57(12), pp. 411-414.

SURDYKOWSKI J., 1975, *Brzegiem Bałtyku*, Wyd. Interpress, Warszawa.

TERMANOWSKI W., TOMCZAK A., 1986, *Barwy ziemi*, KAW, Szczecin.

WMO SEA – ICE Nomenclature, 1970, WMO, No. 259, tp. 145, Geneva-Switzerland.

ZAKRZEWSKI W., 1983, *Lody na morzach*, Wyd. Morskie, Gdańsk.

http://www.iso.org.pl/; 05.05.2015.