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Series Editors: Mehmet Huseyin Bilgin · Hakan Danis

Mehmet Huseyin Bilgin
Hakan Danis
Gökhan Karabulut
Giray Gözgor *Editors*

Eurasian Economic Perspectives

Proceedings of the 25th Eurasia Business and Economics Society Conference

Springer

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Mehmet Huseyin Bilgin • Hakan Danis •
Gökhan Karabulut • Giray Gözgor
Editors

Eurasian Economic Perspectives

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Editors
Mehmet Huseyin Bilgin
Faculty of Political Sciences
Istanbul Medeniyet University
Istanbul, Turkey

Hakan Danis
MUFG Union Bank
San Francisco, CA, USA

Gökhan Karabulut
Faculty of Economics
Istanbul University
Fatih, Istanbul, Turkey

Giray Gözgor
Faculty of Political Sciences
Istanbul Medeniyet University
Istanbul, Turkey

The authors of individual papers are responsible for technical, content, and linguistic correctness.

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Preface

This is the Volume 1—**Eurasian Economic Perspectives**—of the 12th issue of the Springer's series *Eurasian Studies in Business and Economics*, which is the official book series of the **Eurasia Business and Economics Society** (EBES, www.ebesweb.org). This issue includes selected papers presented at the 25th EBES Conference—Berlin that was held on **May 23–25, 2018**, with *the GLO (the Global Labor Organization)* at the *FOM University of Applied Sciences* in Berlin, Germany, with the support of the *Istanbul Economic Research Association*.

Distinguished colleagues **Klaus F. Zimmermann** from *UNU-MERIT*, the Netherlands, **Marco Vivarelli** from *Universita Cattolica del Sacro Cuore in Milano*, Italy, **Sascha Frohwerk** from *the FOM University of Applied Sciences in Berlin*, Germany, and **Ahmet Faruk Aysan** from *Istanbul Sehir University*, Turkey, joined the conference as keynote speakers.

During the conference, participants had many productive discussions and exchanges that contributed to the success of the conference where 316 papers by 525 colleagues from 60 countries were presented. In addition to publication opportunities in EBES journals (*Eurasian Business Review* and *Eurasian Economic Review*, which are also published by Springer), conference participants were given the opportunity to submit their full papers for this issue.

Theoretical and empirical papers in the series cover diverse areas of business, economics, and finance from many different countries, providing a valuable opportunity to researchers, professionals, and students to catch up with the most recent studies in a diverse set of fields across many countries and regions.

The aim of the EBES conferences is to bring together scientists from business, finance, and economics fields, attract original research papers, and provide them with publication opportunities. Each issue of *the Eurasian Studies in Business and Economics* covers a wide variety of topics from business and economics and provides empirical results from many different countries and regions that are less investigated in the existing literature. All accepted papers for the issue went through peer-review process and benefited from the comments made during the conference

as well. The current issue covers fields such as regional studies, macro-economics, investment and risk management, economics of innovation, and law and regulation.

Although the papers in this issue may provide empirical results for a specific county or regions, we believe that the readers would have an opportunity to catch up with the most recent studies in a diverse set of fields across many countries and regions and empirical support for the existing literature. In addition, the findings from these papers could be valid for similar economies or regions.

On behalf of the series editors, volume editors, and EBES officers, I would like to thank all presenters, participants, board members, and the keynote speakers, and we are looking forward to seeing you at the upcoming EBES conferences.

Best regards

Istanbul, Turkey Gökhan Karabulut

Eurasia Business and Economics Society (EBES)

EBES is a scholarly association for scholars involved in the practice and study of economics, finance, and business worldwide. EBES was founded in 2008 with the purpose of not only promoting academic research in the field of business and economics but also encouraging the intellectual development of scholars. In spite of the term "Eurasia," the scope should be understood in its broadest terms as having a global emphasis.

EBES aims to bring worldwide researchers and professionals together through organizing conferences and publishing academic journals and increase economics, finance, and business knowledge through academic discussions. Any scholar or professional interested in economics, finance, and business is welcome to attend EBES conferences. Since our first conference in 2009, around *11,157* colleagues from *98* countries have joined our conferences and *6379* academic papers have been presented. *EBES has reached 2050 members from 84 countries.*

Since 2011, EBES has been publishing two journals. One of those journals, *Eurasian Business Review—EABR*, is in the fields of industrial organization, innovation, and management science, and the other one, *Eurasian Economic Review—EAER*, is in the fields of applied macroeconomics and finance. Both journals are published quarterly by *Springer* and indexed in *Scopus*. In addition, EAER is indexed in the *Emerging Sources Citation Index* (*Clarivate Analytics*), and EABR is indexed in the *Social Science Citation Index (SSCI)*.

Furthermore, since 2014 Springer has started to publish a new conference proceedings series (*Eurasian Studies in Business and Economics*) which includes selected papers from the EBES conferences. The 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, and 20th (Vol. 2) EBES Conference Proceedings have already been accepted for inclusion in the *Conference Proceedings Citation Index—Social Science & Humanities (CPCI-SSH).* The 20th (Vol. 1), 21st, and subsequent conference proceedings are in progress.

We look forward to seeing you at our forthcoming conferences. We very much welcome your comments and suggestions in order to improve our future events. Our success is only possible with your valuable feedback and support!

I hope you enjoy the conference and Berlin.

With my very best wishes,

Klaus F. Zimmermann
President

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List of Contributors

Hakan Acaroğlu Department of Economics, Faculty of Economics and Administrative Sciences, Eskisehir Osmangazi University, Eskisehir, Turkey

Sri Wahyu Agustiningsih Economics Faculty, Universitas Veteran Bangun Nusantara, Surakarta, Indonesia

Emrah Ayhan Political Science and Public Administration, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Barbara Batóg Institute of Economics and Finance, University of Szczecin, Szczecin, Poland

M. Celalettin Baykul Department of Metallurgical and Materials Engineering, Faculty of Engineering and Architecture, Eskisehir Osmangazi University, Eskisehir, Turkey

Anna Bebel Faculty of Economics and Finance, Wroclaw University of Economics and Business, Wrocław, Poland

Sebastian Bobowski Department of International Economic Relations, Wroclaw University of Economics, Wroclaw, Poland

Joanna Brzezińska Criminal Law, University of Wroclaw, Wroclaw, Poland

Mihai Carp Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania

Oscar Fernando Castellanos Dominguez Universidad Nacional de Colombia, Bogotá, Colombia

Oscar Mauricio Cruz-Sanchez Universidad Nacional de Colombia, Bogotá, Colombia

Anna Czapkiewicz Faculty of Management, AGH University of Science and Technology, Kraków, Poland

Ugne Daubaraite School of Economics and Business, Kaunas University of Technology, Kaunas, Lithuania

Magdaléna Drastichová Department of Regional and Environmental Economics, VŠB-Technical University of Ostrava, Ostrava, Czech Republic

Ewa Dziawgo Faculty of Administration and Social Sciences, Kazimierz Wielki University, Bydgoszcz, Poland

Grigori Fainstein Faculty of Business Management, Euro Academy, Tallinn, Estonia

Iwona Foryś Institute of Economics and Finance, University of Szczecin, Szczecin, Poland

Richard Gardiner Faculty of Economics and Administration, University of Pardubice, Pardubice, Czech Republic

Jan Gola Institute of Administrative Sciences, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

Musa GÜN Department of Business - Accounting and Finance, Recep Tayyip Erdogan University, Rize, Turkey

Petr Hajek Faculty of Economics and Administration, University of Pardubice, Pardubice, Czech Republic

Esra Hamamcioğlu Commercial & Company Law Department, Kadir Has University, Istanbul, Turkey

Gola Jan Institute of Administrative Sciences, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

George D. Kambouris Dubai Business School, University of Dubai, Academic City, Dubai, UAE

Argun Karamanlıoğlu Faculty of Law, Commercial and Company Law Department, Kadir Has University, Istanbul, Turkey

Özge Uzun Kazmaci Civil Law Department, Kadir Has University, Istanbul, Turkey

Marek Kośny Faculty of Economics and Finance, Wroclaw University of Economics and Business, Wrocław, Poland

Alina Kulczyk-Dynowska Department of Spatial Economy, University of Environmental and Life Sciences, Wrocław, Poland

Przybylska Monika Institute of Administrative Sciences, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

Sri Murni Accounting Department, Economics and Business Faculty, Universitas Sebelas Maret Surakarta, Surakarta, Indonesia

Murat Önder Political Science and Public Administration, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Maria Piotrowska Faculty of Economics and Finance, Wroclaw University of Economics and Business, Wrocław, Poland

Katarzyna Przybyła Department of Spatial Economy, University of Environmental and Life Sciences, Wrocław, Poland

Rahmawati Accounting Department, Economics and Business Faculty, Universitas Sebelas Maret Surakarta, Surakarta, Indonesia

Michael Hernando Sarmiento-Muñoz Universidad Nacional de Colombia, Bogotá, Colombia

Bobowski Sebastian Institute of Administrative Sciences, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

Semanur Soyyiğit Erzincan Binali Yildirim University, Erzincan, Turkey

Grazina Startiene School of Economics and Business, Kaunas University of Technology, Kaunas, Lithuania

Wojciech Szydło Institute of Civil Law, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

Constantin Toma Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania

Doruk Utku School of Law, Istanbul Medipol University, Istanbul, Turkey

Szydło Wojciech Institute of Civil Law, Faculty of Law, Administration and Economics, University of Wrocław, Wrocław, Poland

Kiymet Yavuzaslan Adnan Menderes University, Aydın, Turkey

Adam Zaremba Dubai Business School, University of Dubai, Academic City, Dubai, UAE
Department of Investment and Capital Markets, Poznan University of Economics and Business, Poznań, Poland

Part I
Regional Studies

Residential Real Estate in the Municipalities Located in the Naturally Valuable Areas in Poland

Alina Kulczyk-Dynowska and Katarzyna Przybyła

Abstract This chapter presents the selected aspects of residential real estate resources in 117 municipalities linked with Polish national parks. The necessity of meeting the living needs makes this type of real estate particularly important. As a result of interactions occurring between the residential real estate and its socio-economic environment, the selected features characterizing demography and the tourist function of the explored municipalities were discussed. The selection of territorial units was based on the criterion of establishing a national park in the area of a municipality. The research period covers the years 2005–2015. The purpose of this chapter is to attract attention to the situation of local communities residing in the areas covered by the highest rank of area forms of nature protection.

Keywords Real estate · National parks · Local development

1 Introduction

Covering the area with legal protection changes the rules of spatial management—this factor restricts economic activity. As a result, nature protection in national parks exerts not only spatial, but also economic impacts (Kulczyk-Dynowska 2014, 2015; Przybyła and Kulczyk-Dynowska 2017). Based on these restrictions certain allegations are put forward regarding spatial forms of nature conservation having a negative impact on local development, and thus on life quality of the local community (Wells and Brandon 1992; Mayer 2014; Bennett and Dearden 2014; Potocki et al. 2014). The counterarguments, however, emphasize that these areas do not actually restrict economic activity, but rather channel it—by supporting the development of tourism or organic farming (Marković et al. 2015; Mose 2016; Schott et al. 2016; Stokke and Haukeland 2017). In this context, it is highlighted that

A. Kulczyk-Dynowska (✉) · K. Przybyła
Department of Spatial Economy, University of Environmental and Life Sciences, Wrocław, Poland
e-mail: alina.kulczyk-dynowska@upwr.edu.pl; katarzyna.przybyla@upwr.edu.pl

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protected areas guarantee the beauty of landscape, ensure responsible spatial management, high quality of the environment and facilitate maintaining regional cultural identity (Krajewski 2017; Płuciennik et al. 2016; Szewrański et al. 2017).

National parks represent the widely known forms of nature conservation. They are covered by the highest rank of protection, and the limitations in force, addressed to their areas, are the most restrictive ones among all spatial forms of area conservation. The functioning of 23 Polish national parks is determined by the Nature Conservation Act 2004. (c. 92, item 880). In a global perspective, national parks perform an important role in maintaining biodiversity (Gray et al. 2016). At the same time, from the local perspective, they still remain a component of the municipal functional system (Brooks et al. 2006). It means that the local community and protected areas persist in continuous interaction on many levels—predominantly in terms of spatial management, having impact on, e.g. the development of construction sector (including residential housing) and tourist infrastructure constituting the necessary component of tourist function development in the discussed area.

The purpose of this chapter is to attract attention to the selected aspects of the life of local communities residing in areas covered by the highest rank of spatial nature conservation. The authors are seeking answers to two research questions. Firstly, do the resources of residential housing in the municipalities linked with national parks continue to develop? Secondly, is there any correlation between the tourist function of the analyzed municipalities and the housing function? A complementary problem is a tendency in the population number of local communities in the analyzed municipalities. A research hypothesis was adopted that the proximity of a national park stimulates the housing function. The spatial scope of the conducted research covers 117 municipalities territorially linked with 23 Polish national parks. The research period refers to the years 2005 and 2015. The beginning of the research is also the first full calendar year of Poland's functioning in the European Union structures. The end of the research period is determined by the availability of statistical data.

2 Methodology

The initial research stage consisted in identifying municipalities that are territorially linked with national parks. Adopting this criterion allowed separating 117 territorial units. The first research stage focused on a short analysis of population numbers. In the second stage, the tourist function and the development of residential housing resources (housing function) of the studied municipalities were analyzed. In each case 2005 was adopted as the base year, whereas 2015 as the analyzed year.

The statistical analysis carried out in the second part of the research, using linear ordering methods—synthetic development measures (SDM), requires a detailed description. It allowed constructing rankings of the municipalities in terms of the development level of both analyzed functions, to be followed by a comparative

analysis of municipalities in the studied areas and also correlation assessment between the development level of both the housing function and tourist function.

SDM construction and application are described by, e.g. Hellwig (1968); Strahl (1978); Walesiak (2006); Marti and Reinelt (2011); Kukuła (2012, 2014); Bal-Domańska (2016a); Kukuła and Luty (2017); Manly and Navarro Alberto (2017). Synthetic development measures are primarily recommended as a tool used in comparing local and regional systems, e.g. in terms of economic, social and environmental development—as indicated, among others, by Bal-Domańska (2016b), Malina (2008). Therefore, they can be applied in analyzing both the tourist function and the housing function. The study adopts that the municipalities linked with national parks form one set made up of 117 objects. SDMs for both analyzed aspects were constructed, i.e. for the housing function ($SDM_{housing}$) and the tourist function (SDM_{tur}). Due to the fact that 14 municipalities did not present tourist facilities subject to official reporting, the set of objects for SDM_{tur} was narrowed down to 103 units.

Based on SDM value the position of each municipality was determined in terms of the development level of the tourist function against the background of the housing function. The following research procedure was adopted:

1. Defining variables (indicators) for each SDM
2. Carrying out unitarization with zero minimum procedure for the entire period simultaneously (2005 and 2015)
3. SDM construction with a weight system in accordance with the method of (standardized) sums with a common development pattern for the years 2005 and 2015
4. Defining the ranking position of municipalities in each of the analyzed years for the particular SDM ($SDM_{housing,}$ SDM_{tur})
5. Comparing the ranking positions of municipalities defined by each SDM ($SDM_{housing}$ and SDM_{tur})
6. Comparing changes in the situation in a municipality over time based on $SDM_{housing}$ and SDM_{tur}
7. Calculating the sequence correlation coefficient between $SDM_{housing}$ and the supplemented SDM_{tur} measure
8. Classification of municipalities according to SDM value ($SDM_{housing}$ and SDM_{tur}) using arithmetic mean and standard deviation

The research procedure was initiated with defining indicators characterizing each of the thematic areas. For the purposes of determining $SDM_{housing}$; the number of apartments available for occupation per 1000 residents, area of apartments available for occupation per 1000 residents, average living area per apartment, average living area per resident, and the number of apartments per 1000 residents are the defined as indicators.

All indicators were considered stimulants without a veto threshold, which means that the municipalities achieving high values of the above presented indicators were assessed as the highest ranked units, representing the most favourable situation. The

aforementioned indicators were calculated based on the data collected from the Central Statistical Office.

For SDM_{tur} the following variables were adopted:

1. Baretje and Defert index—assessment of tourism development level (Baretje and Defert 1972)
2. Tourist accommodation density indicator—assessment of tourist accommodation saturation (Menges 1955)
3. Charvat index—assessment of the intensity of tourist traffic (Charvat and Cerny 1960)

These indexes were calculated according to formulas [1] (Kowalczyk 2002), [2] (Warszyńska and Jackowski 1978), and [3] (Lijewski et al. 2008).

$$\mathrm{Tf}\ (t) = \frac{\text{number of beds in the area x 100}}{\text{number of population in the area}} \tag{1}$$

$$W_{\mathrm{GBN}} = \frac{\text{number of beds}}{\text{km}^2 \text{ of the area}} \tag{2}$$

$$T_{\mathrm{Ch}} = \frac{\text{number of night accommodations sold x 100}}{\text{number of local population}} \tag{3}$$

Due to the fact that the Local Data Bank ceased the publication of data on the number of overnight stays at the end of 2014, the values for 2015 were adopted as the arithmetic mean from the period 2012–2014. All indicators were considered equivalent stimulants without a veto threshold, which means that the municipalities achieving high values of the above presented indicators were assessed as the highest ranked units, representing the most favourable situation.

The unitarization of values of the characteristics adopted for the research was carried out according to the following formula:

$$Z_{jit} = \frac{X_{jit} - \min X_{jit}}{\max X_{jit} - \min X_{jit}} \tag{4}$$

where

x—value of the characteristic
j—variable j, where $j = (1, \ldots, p)$
i—object (municipality), where $i = (1, \ldots, N)$

N for $SDM_{housing} = 117$
N for $SDM_{tur} = 103$

t—time (year), where $t = (2005, 2015)$

It allowed obtaining values within the range [0, 1]. For each SDM all variables adopted for the study were stimulants and thus the need for unifying them (preference function) did not occur. SDM was calculated using the standardized sum

method (Kowalewski 2002). SDM value for the analyzed municipalities was calculated using formula (5):

$$\mathrm{SMR}_{it} = \frac{1}{p}\sum_{j=1}^{p} z_{ijt}\ (i = 1, \ldots, N)\ (t = 2005, 2015) \tag{5}$$

where

SDM—value of non-model synthetic measure in an object (municipality) and
p—number of characteristics

In the final phase, the analyzed municipalities were ranked in terms of the position determined by the analyzed SDM. The strength of correlation between the level of tourist function and housing function performed by the municipalities was analyzed. In order to calculate the discussed correlation, the ranking positions obtained based on $\mathrm{SDM}_{\mathrm{tur}}$ were supplemented by assigning 14 municipalities, not included in $\mathrm{SDM}_{\mathrm{tur}}$, the same 111 ranking position (arithmetic mean of the subsequent positions from the set of the last positions [from 104 to 117)]. Thus, equipotent sets of municipalities in terms of both studied measures were obtained. Correlation was calculated using the Spearman's rank correlation coefficient—the following formula was used (Sobczyk 2010):

$$r_s = 1 - \frac{6\sum_{i=1}^{N} d_i^2}{N\left(N^2 - 1\right)} \tag{6}$$

where

d_{it}—determines differences between ranks (positions) of the corresponding individual SDM_{it} values.

The following scale was used to assess the strength of the correlation between variables (Sobczyk 2010):

|0.00–0.3|—weak dependence
|0.31–0.6|—moderate dependence
|0.61–1.0|—strong dependence

3 Research Results

The analyzed municipalities are significantly diversified in terms of demographics. It should be highlighted that among the municipalities linked with national parks, 11 have the status of urban municipalities, 31 the status of urban–rural municipalities and 75 the status of rural municipalities. In the group of urban municipalities, there

are two cities with county rights, i.e. Jelenia Góra and Świnoujście, and the largest community resides within their borders—87,000 people in 2005 and 81,000 people in 2015 in Jelenia Góra, whereas 41,000 people in both studied years in Świnoujście. In the first year of the study only six municipalities had the population exceeding 20,000 (except for the above mentioned), in the last year of the study this result was recorded in eight municipalities. In 2005, 22 municipalities recorded their population number within the range [10,000–20,000] and in 2015 26 municipalities, respectively. The municipalities populated with 5000–10,000 residents were the dominating ones—in the first year of the analysis their number was 58, whereas in the last year 52. In both analyzed years, the population number did not exceed 5000 residents in 29 municipalities.

The comparison of population figures in the first and last year of the study indicates that the population number was the same in 18 municipalities (the change did not exceed 1% of the value specific for the baseline year). In 54 units an increase was recorded, and in 45 the number of residents declined. Only in two analyzed municipalities the population number went down by above 10% of the specific value for the baseline year. Therefore, it can be concluded that a significant depopulation occurred only sporadically. Much more frequently a significant increase in population number was observed—the population of 15 municipalities went up by above 10% of the value specific for 2005. The situation of municipalities territorially linked with national parks adjacent to Warsaw and Poznań metropolises should be highlighted—their domination in the group of municipalities characterized by the largest increase in population clearly indicates the pressure exerted by these metropolises on the settlement function. The largest increase in the number of residents was recorded in the municipalities of Komorniki and Dopiewo (municipalities linked with Wielkopolska National Park, located in the vicinity of Poznań), where the number of residents has almost doubled. The aforementioned situation is of particular importance in terms of demand for residential housing.

The tourist function of the studied municipalities is highly diverse—as showed by SMD_{tur} values in the range [0.0–0.945] in 2005 and [0.0–0.731] in 2015 (see Table 1). It should be emphasized that 14 out of 117 analyzed municipalities did not show any tourism-related activities in public statistics—according to the indications presented in methodological comments they had zero measure value and 111 position. Having adopted the interpretation of Baretje and Defert index value according to M. Boyer scale, among 103 municipalities presenting tourism related data, tourist activity was practically non-existent in 59 municipalities in the first year of the study and in 63 municipalities in the last year of the study. In these municipalities, the value of the discussed index did not exceed 4 units—very low SMD_{tur} values are the consequence of the above-mentioned fact. The absolute growth of SMD_{tur} value, calculated as the difference between SMD_{tur} value in 2015 (analyzed) and in 2005 (baseline year) shows that in the set of 103 municipalities, 56 recorded an increase in the analyzed measure value, whereas 31 a decrease. No changes were recorded in 16 municipalities. It should be emphasized that the highest absolute growth in the value of the studied measure was recorded by one of the three leaders—the municipality of Karpacz (Karkonosze NP, mountainous area). It is

Table 1 SDM_{it} of the tourist function and housing function covering municipalities territorially linked with national parks—data for 2005 and 2015

	Housing function				Tourist function			
	2005		2015		2005		2015	
Name of the municipality	SDM	*P*	SDM	*P*	SDM	*P*	SDM	*P*
Adamów (2)	0.143	76	0.185	80	0	111	0	111
Bargłów Kościelny (2)	0.102	108	0.155	104	0	111	0	111
Białowieża (2)	0.247	24	0.368	22	0.069	11	0.117	11
Bieliny (2)	0.119	95	0.163	95	0.000	91	0.001	89
Bierzwnik (2)	0.112	99	0.167	91	0	111	0	111
Bodzentyn (3)	0.122	90	0.197	73	0.007	50	0.006	53
Brochów (2)	0.209	41	0.178	85	0.000	91	0.000	94
Brusy (3)	0.132	82	0.234	56	0.005	57	0.003	75
Bukowina Tatrzańska (2)	0.228	30	0.267	41	0.034	17	0.118	10
Chojnice (2)	0.169	55	0.268	40	0.031	19	0.023	27
Choroszcz (3)	0.281	17	0.427	14	0.001	79	0.006	55
Cisna (2)	0.230	29	0.497	10	0.135	8	0.125	9
Czarna (2)	0.100	110	0.194	75	0.006	53	0.042	17
Człopa (3)	0.095	112	0.114	116	0.000	91	0.001	86
Czorsztyn (2)	0.224	32	0.276	39	0.022	25	0.030	22
Czosnów (2)	0.348	11	0.436	13	0.002	75	0.002	80
Dąbrowa Białostocka (3)	0.115	97	0.162	96	0.000	89	0.000	92
Dębowiec (2)	0.104	106	0.137	109	0.000	87	0.000	91
Dobiegniew (3)	0.111	100	0.159	98	0.001	84	0.009	42
Dopiewo (2)	0.642	1	0.699	1	0	111	0	111
Drawno (3)	0.096	111	0.128	112	0.004	59	0.005	63
Dukla (3)	0.111	101	0.164	94	0.002	76	0.003	77
Giby (2)	0.259	22	0.328	26	0.019	26	0.033	19
Główczyce (2)	0.046	117	0.080	117	0.000	91	0.001	88
Goniądz (3)	0.175	54	0.249	49	0.009	46	0.010	40
Górno (2)	0.167	58	0.241	53	0.011	43	0.012	38
Górzyca (2)	0.090	114	0.147	107	0.003	64	0.004	69
Grajewo (2)	0.124	88	0.155	102	0.000	91	0.000	99
Hańsk (2)	0.124	89	0.212	66	0	111	0	111
Izabelin (2)	0.465	6	0.544	6	0	111	0	111
Jabłonka (2)	0.236	27	0.288	35	0.002	70	0.004	72
Jaświły (2)	0.187	52	0.224	60	0.000	90	0.000	96
Jedwabne (3)	0.156	67	0.179	84	0.001	83	0.000	101
Jelenia Góra (1)	0.148	69	0.191	76	0.016	30	0.019	31
Jerzmanowice-Przeginia (2)	0.146	72	0.204	68	0.003	67	0.006	54
Józefów (3)	0.119	93	0.181	83	0.003	65	0.005	61
Kamienica (2)	0.105	104	0.188	78	0.008	47	0.003	74
Kampinos (2)	0.207	43	0.263	44	0.000	91	0.002	83
Karpacz (1)	0.391	8	0.549	5	0.441	2	0.682	2
Kobylin-Borzymy (2)	0.244	25	0.321	28	0	111	0	111

(continued)

Table 1 (continued)

	Housing function				Tourist function			
	2005		2015		2005		2015	
Name of the municipality	SDM	*P*	SDM	*P*	SDM	*P*	SDM	*P*
Komorniki (2)	0.474	5	0.601	4	0.002	71	0.006	56
Kostrzyn nad Odrą (1)	0.145	75	0.151	106	0.004	62	0.007	50
Kościelisko (2)	0.279	18	0.410	16	0.043	14	0.072	15
Kowary (1)	0.101	109	0.123	114	0.014	36	0.008	44
Krasnopol (2)	0.236	26	0.304	31	0.005	56	0.003	78
Krempna (2)	0.131	83	0.128	113	0.013	37	0.006	52
Krościenko nad Dunajcem (2)	0.217	36	0.263	45	0.031	20	0.016	32
Krzyż Wielkopolski (3)	0.110	102	0.155	103	0.000	91	0.001	90
Kudowa-Zdrój (1)	0.142	78	0.168	90	0.062	13	0.135	8
Leoncin (2)	0.257	23	0.323	27	0	111	0	111
Leszno (2)	0.407	7	0.402	20	0.000	91	0.000	100
Lewin Kłodzki (2)	0.167	56	0.205	67	0.011	42	0.025	24
Lipinki (2)	0.133	81	0.166	92	0	111	0	111
Lipnica Wielka (2)	0.162	61	0.223	61	0.001	78	0.000	101
Lipsk (3)	0.119	96	0.196	74	0	111	0	111
Ludwin (2)	0.147	70	0.300	33	0.006	55	0.007	51
Lutowiska (2)	0.082	115	0.174	86	0.067	12	0.108	13
Łapsze Niżne (2)	0.192	49	0.253	47	0.026	23	0.035	18
Łapy (3)	0.129	84	0.181	82	0.001	86	0.000	97
Łączna (2)	0.106	103	0.160	97	0.006	52	0.000	101
Łeba (1)	0.334	12	0.505	9	0.945	1	0.731	1
Łomianki (3)	0.530	3	0.622	3	0.003	69	0.003	79
Masłów (2)	0.207	42	0.304	32	0.016	32	0.020	29
Międzyzdroje (3)	0.505	4	0.515	8	0.325	3	0.313	3
Mosina (3)	0.224	33	0.404	19	0.003	66	0.005	65
Mszana Dolna (2)	0.122	91	0.182	81	0.008	48	0.007	49
Narewka (2)	0.306	16	0.407	17	0.002	72	0.005	58
Niedźwiedź (2)	0.138	79	0.215	63	0.013	38	0.004	66
Nowa Słupia (2)	0.092	113	0.158	99	0.006	54	0.009	41
Nowinka (2)	0.272	20	0.290	34	0.011	44	0.025	25
Nowy Dwór (2)	0.103	107	0.166	93	0	111	0	111
Nowy Targ (2)	0.162	62	0.214	64	0.005	58	0.004	70
Nowy Żmigród (2)	0.124	86	0.135	110	0.000	88	0.001	85
Ochotnica Dolna (2)	0.219	35	0.244	52	0.015	34	0.008	46
Osiek Jasielski (2)	0.146	73	0.140	108	0	111	0	111
Piechowice (1)	0.157	65	0.199	72	0.030	21	0.023	26
Podgórzyn (2)	0.227	31	0.265	43	0.086	9	0.051	16
Poronin (2)	0.264	21	0.331	24	0.017	29	0.083	14

(continued)

Table 1 (continued)

	Housing function				Tourist function			
	2005		2015		2005		2015	
Name of the municipality	SDM	*P*	SDM	*P*	SDM	*P*	SDM	*P*
Puszczykowo (1)	0.357	10	0.387	21	0.011	40	0.013	37
Radków (3)	0.120	92	0.154	105	0.011	41	0.030	20
Radziłów (2)	0.124	87	0.168	89	0	111	0	111
Rajgród (3)	0.156	66	0.216	62	0.029	22	0.027	23
Sękowa (2)	0.187	51	0.214	65	0.001	82	0.005	60
Skała (3)	0.210	40	0.276	38	0.003	68	0.003	73
Słońsk (2)	0.162	60	0.235	55	0.001	80	0.005	59
Smołdzino (2)	0.137	80	0.189	77	0.004	60	0.006	57
Sokoły (2)	0.189	50	0.226	58	0.001	85	0.000	95
Sosnowica (2)	0.151	68	0.199	71	0.015	33	0.016	33
Stare Babice (2)	0.557	2	0.678	2	0.000	91	0.004	67
Stary Brus (2)	0.142	77	0.254	46	0.001	77	0.001	84
Stęszew (3)	0.213	38	0.317	29	0.016	31	0.009	43
Suchowola (3)	0.195	47	0.225	59	0.000	91	0.001	87
Sułoszowa (2)	0.147	71	0.172	87	0.002	73	0.005	64
Suraż (3)	0.159	63	0.252	48	0.007	51	0.005	62
Suwałki (2)	0.312	15	0.438	12	0.032	18	0.015	36
Szczawnica (3)	0.202	45	0.281	37	0.136	7	0.147	7
Szczytna (3)	0.128	85	0.169	88	0.015	35	0.007	48
Szklarska Poręba (1)	0.213	39	0.454	11	0.248	4	0.206	5
Sztabin (2)	0.145	74	0.187	79	0.000	91	0.000	98
Świnoujście (1)	0.186	53	0.265	42	0.083	10	0.114	12
Trzcianne (2)	0.167	57	0.244	51	0.000	91	0.004	68
Tuczno (3)	0.104	105	0.121	115	0.017	28	0.008	45
Turośń Kościelna (2)	0.374	9	0.411	15	0.000	91	0.000	93
Tykocin (3)	0.196	46	0.239	54	0.004	61	0.008	47
Urszulin (2)	0.207	44	0.337	23	0.007	49	0.002	82
Ustka (2)	0.220	34	0.407	18	0.204	5	0.168	6
Ustrzyki Dolne (3)	0.068	116	0.130	111	0.009	45	0.015	35
Wicko (2)	0.157	64	0.203	69	0.040	16	0.030	21
Wielka Wieś (2)	0.324	14	0.516	7	0.018	27	0.019	30
Wierzbica (2)	0.113	98	0.158	100	0	111	0	111
Witnica (3)	0.119	94	0.157	101	0.003	63	0.003	76
Wizna (2)	0.194	48	0.234	57	0.002	74	0.004	71
Wolin (3)	0.231	28	0.249	50	0.023	24	0.010	39
Zakopane (1)	0.217	37	0.331	25	0.159	6	0.209	4
Zamość (2)	0.278	19	0.310	30	0.001	81	0.002	81

(continued)

Table 1 (continued)

	Housing function				Tourist function			
	2005		2015		2005		2015	
Name of the municipality	SDM	*P*	SDM	*P*	SDM	*P*	SDM	*P*
Zawoja (2)	0.329	13	0.286	36	0.040	15	0.022	28
Zwierzyniec (3)	0.165	59	0.203	70	0.012	39	0.015	34

Notes:
- (1) Urban municipality, (2) rural municipality, and (3) urban–rural municipality
- SDM—Synthetic development measure value
- *P*—The ranking position based on SDM
- Positions from 1 to 10 are marked in grey and refer to the highest development level of the analyzed phenomenon among the municipalities covered by the research

Source: Author's compilation based on the Central Statistical Office data

also interesting to observe that the leader, i.e. Łeba Municipality (Słowiński PN, coastal area), recorded the highest absolute decline in SMD_{tur} value, however, despite that it did not lose the position held so far. The above observations indicate that the distance separating Łeba from other municipalities remains significant, but in the future it seems realistic that it will lose its ranking position for the benefit of Karpacz. Therefore, it can be anticipated that the municipality linked with the mountainous national park will be more willingly chosen by tourists than the coastal area. In both analyzed years, the dominant position was held by the municipalities located in both coastal and mountainous areas. Among them there were tourist centres recognized not only in Poland, but also abroad. The stability of leaders is crucial here—in both analyzed years, the first three positions were taken by: Łeba, Karpacz, and Międzyzdroje, respectively.

The housing function of the analyzed municipalities is—similarly to the tourism function—highly diverse. $SMD_{housing}$ values presented the range [0.046–0.642] in 2005 and [0.080–0.699] in 2015 (see Table 1). The absolute growth of $SMD_{housing}$ value, calculated as the difference between $SMD_{housing}$ values in 2015 (analyzed) and 2005 (baseline year) shows that in the set covering 117 municipalities as many as 111 recorded an increase of the analyzed value, whereas only 6 a decline. The above indicates that the vast majority of municipalities linked with national parks were characterized by development in terms of their housing function. The highest absolute growth in the analyzed measure value was recorded by Cisna municipality, ranked among the top ten leaders regarding tourist function. It should be emphasized that in the majority of municipalities covered by the analysis, not only the number of apartments was larger, but also the comfort of living was improved (higher average usable floor area per capita).

In order to measure the correlation intensity between the level of tourist function performed by municipalities and the housing function, Spearman's rank correlation coefficient was calculated between the ranking positions assigned based on the value of $SMD_{housing}$ and $SMD_{tur.}$ The set of SMD_{tur} positions (the measure calculated for 103 municipalities) was supplemented in accordance with the indications presented in the methodology. The results of correlation confirm a strong positive dependence

between the studied functions. In 2005, the value of the analyzed coefficient was 0.7345 and a decade later it declined to the level of 0.6904 units. It can be assumed that the development of housing function in popular tourist municipalities is a derivative of the natural values appreciated by tourists and thus the attractiveness of a municipality. The impact of tourist function on the local labour market is highly significant—the employment opportunity remains one of the important variables determining the choice of the place of residence.

4 Conclusions

An important result of the conducted research is determining that the municipalities territorially linked with national parks are significantly diversified in demographic terms—it directly affects the demand for real estate meeting the housing needs. These municipalities also differ in terms of their status—there are 11 urban municipalities in the analyzed group (i.e. municipalities representing a city), 31 urban–rural municipalities (i.e. municipalities covering a city and villages) and 75 rural municipalities (i.e. municipalities that do not include a city in their territory). The obtained results allow concluding that despite the above-mentioned differences almost all territorial units linked with national parks, in the period 2005–2015, were characterized by the development of residential real estate. It should be clearly emphasized that in 95% of the analyzed municipalities higher synthetic measure value of the housing function development was observed. It allows adopting the initial research hypothesis and concluding that the proximity of a national park stimulates the housing function. The above can also be considered an expression of public appreciation regarding environment quality in the place of residence and the perception of the highest rank protected areas' proximity in terms of an advantage for locating real estate meeting the housing needs.

It is also worth adding that in the majority of the analyzed municipalities the comfort of living measured by an increase in the average living space per capita, was improved, which can be considered the symptom of higher life quality of the local community. The carried out analyses indicate a strong, positive correlation between the tourist function and the housing function in the studied municipalities.

It can, therefore, be summed up that the attractive tourist areas were assessed as attractive places for permanent residence. It is of great importance to observe that the phenomenon of major depopulation occurred sporadically in the analyzed municipalities, and simultaneously in as many as 15 studied units their population increased by above 10% of the baseline year population. In view of the widespread decline in the number of residents in Poland, the aforementioned facts should be assessed as highly positive. The research results show that the proximity of national parks is perceived as good neighbourhood in Poland. Thus, it is difficult to consider the changes in the principles of spatial management referring to area forms of nature

protection as negatively affecting local development or life quality of the local community. The research results seem to confirm that the protected areas do not limit either economic activity or local development.

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