Public Real estate economy (managed by parish council) as a factor of local development for the Małopolska Province (in Poland)

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1. Introduction

1.1. Background to the study

Decentralisation of the public authority in Poland, directly linked with political changes initiated after 1989, resulted in creating, in its first phase, two levels of public administration, that is the central and the local (parish) levels. Further reforms undertaken a few years later introduced additional self-government levels: districts and provinces. Parishes, constituting the smallest areas, were acknowledged to be the basic units of the local government in Poland. They were entrusted vast competences and tasks in order to meet the local societies' needs.

In the light of contemporary theoretical views on the role of public authorities in social-economic life as well as views on the local development concepts which have dynamically been developing since the 60's, parish authorities started to be perceived as the bodies responsible for undertaking active measures in order to develop local areas. Polish literature (making use of foreign literature achievements) widely discusses the real impact of the parish bodies upon development processes, the parish bodies' activity forms as well as the efficiency of available local interventionism tools.

One of the areas used by public authorities in order to, among others, stimulate the process of socialeconomic development, is the real estate economy. The notion of the "real estate economy" is, from a theoretical point of view, reduced to managing parish real estates. A wide approach to "real estate economy" of the local governments can be defined as conscious and purposeful actions of the authorised self-governing subjects, in accordance with the law. It encompasses making decisions and undertaking factual and legal acts related to the real estates located within the parish and aiming at specific targets which are subject to social-economic development policy run by the local authorities. (J. Cymerman, 2009). It is, in other words, a total amount of actions undertaken by the local governments and related to real estates situated within a given parish. Public real estate economy run by local governments is increasingly frequently described in the context of instruments which those governments, their choice, implementation or effects. Another deficient topic in the Polish literature is an attempt at synthetic assessment of the relations between the real estate economy in the parishes and the local development.

1.2. Literature review

Literature used in the study is of a cross-disciplinary character. As the undertaken problem is very specific and deeply rooted in the realities which are typical for legislative solutions of a given country, the literature study has predominantly been based on domestic (Polish) publications. Nevertheless, I

was trying to include some significant foreign literature in the paper as well. Quoting the authors of some chosen literature, I generally divided them according to the topics they were related to. Thus, we may distinguish the following:

- Local and regional development: Brol; Jewtuchowicz; Pietrzyk; Secomski; Trojanek;
- Public authorities and their influence upon the social-economic development: Barrett; Fisher; Regulski; Stiglitz; Samuelson, Northaus; Varian;
- Parish government in stimulating local development: Blume; Budner; Klasik;
- The role of a real estate in economy: Blaug; Landreth, Colander;
- Real estate economy in the parishes: DiPasquale, Wheaton;
- Managing parish real estates: Kaganova, Nayyar-Stone; Styrcea;
- Parish investments: Kessides;
- Instruments of policy: Bressers, Klok; Dahl, Lindblom; Hood, Margetts; Lascoumes, Gales; Eliadis, Hill, Howlett; Ponzini; Salamon; Woodside;
- Instruments of real estate economy: Evans, Gniewek, Kudłacz, McDonald, Rudnicki,

1.3. Objectives & hypotheses

The main aim of my dissertation is investigating the relations between widely understood real estate economy and social-economic development of the Małopolska Province parishes.

The detailed aims of my research were as follows:

- Characterising and assessing the level of diversity in the Małopolska Province parishes in respect of their social-economic development level and real estate economy;
- Identifying the relation between social-economic development and real estate economy in the parishes;
- Defining the importance of the parish self-governments' activity in terms of the widely understood real estate economy for stimulating and managing the processes of social-economic development.
- Measuring and assessing the activity of the parish self-governments in the Małopolska Province within the scope of using real estate economy instruments;
- Identifying similarities and differences in the area of managing real estates between the parishes with high and low level of social-economic development as well as an attempt at interpreting those reasons.
- Pointing out some general suggestions of changes in using real estate economy instruments which would more effectively allow for local areas development.

The following **research hypotheses** have been subjected to the research aims:

H1: Widely understood real estate economy carried out by self-governments in the parishes remains in a substantial relation to the processes of social-economic development of the parishes. The relations are characterised by mutual relationship between the quality of real estate economy run by the parishes' self-governing body and the level of parishes' social-economic development.

H1A: Małopolska Province is characterised by spatial diversity of the social-economic development level of its parishes and the real estate economy structure.

H1B: Empirical study allows us to confirm the existence of a significant positive correlation between the social-economic development level of the parishes and the real estate economy.

H1C: There is a diversity in the range of using real estate economy instruments depending on the level of parish development. Well-developed parishes use pro-investment instruments (favouring investment decisions of the private subjects) more efficiently than underdeveloped ones. Underdeveloped parishes, on the other hand, use financial support instruments for economic subjects more efficiently than well-developed parishes.

H2: The factors influencing social-economic development of the parishes are, to a larger degree, the decisions of the private subjects being in charge of the real estates, and not so much the decisions of the parish bodies who are the owners of the parish real estate resources. Therefore, the aim of the parish bodies' actions in the area of the real estate economy should be the following:

- the right attitude to "procedure-oriented handling" the decisions of the private subjects who own the real estates,
- the right orientation and systematic use of the real estate economy improving investment attractiveness in the parishes,
- aiming at optimising the financial benefits for parish budgets from taxes and real estate fees.

1.4. Paper structure

The paper structure is based on three fundamental theoretical pillars and two methodologically separate research parts.

- The first part of the paper concentrates on the local development issues according to historic and contemporary theoretical concepts,
- The second part refers to the issues of public administration, such as: the nature of the parishes' self-government functioning as a basic level of self-governing administration, local development policy and parish development management,
- The third part undertakes such topics as the relation between real estates and the local economy, the role of the parish self-government in managing real estates over the local territory, managing public real estates, undertaking actions (local planning, infrastructural investments, fiscal policy) which create conditions for enterprise development and investments in the parish,
- The fourth part describes the problems of instrumentalisation of the real estate economy, including identification of the real estate economy instruments as well as functions which they are assumed to execute, identifying the conditions for choosing instruments for the purpose of the local development policy, and identifying the effects of using the real estate economy instruments,
- The fifth part constitutes the first stage of the research at the same time. It contains a taxonomic analysis of the social-economic development of the parishes and the real estate economy in the investigated Małopolska Province,

- The sixth part of the paper is based on the author's surveys which constitute the ground for analysing the use of the real estate economy instruments in Małopolska Province parishes,
- The last part of the paper contains conclusions, references in terms of practical use of the research outcomes and it points to some further potential research areas.

1.5. Research methodology & data used

The research part of the paper, as mentioned above, is based on two separate methods and data sets.

The first part of the research is based on statistical public data gathered by the Central Statistical Office in Poland (GUS) and consists in the statistic evaluation (by means of taxonomic analysis method) of the social-economic development level and the real estate economy in the Małopolska Province parishes. Basing on the information accessible in this database, a system of measurers was created by means of which the evaluation of the social-economic development level in Małopolska Province as well as the effects of the real estate economy run by the parishes can be carried out. Within those two areas, two sets of measurers have been created (see table no 1 and table no 2). The first set refers to Małopolska Province parishes in terms of their social-economic development and was divided into three thematic groups: economic potential, people's standard of living and economic development.

Variable group	Variable symbol	Variable name	Measurement unit	Data source
al hic	X ₁₁₀₁	Non-working age people per 100 working age people	person	BDR ¹ 2007
Demograp	X ₁₁₀₂	People per 1 km ²	person	BDR 2007
	Х ₁₁₀₃	The sum of migration balance in 2003-2007 upon conversion into 1000 inhabitants in 2003	person	BDR 2003-2007
	X ₁₂₀₁	Places in nurseries per 1000 people	places	BDR 2007
	X ₁₂₀₂	Places in kindergartens per 1000 people	places	BDR 2007
	X ₁₂₀₃	Places in community care units per 1000 people	places	BDR 2007
Ś	X ₁₂₀₄	People per library unit	places	
tion	X ₁₂₀₅	Water system users' share	%	BDR 2007
ndi	X ₁₂₀₆	Sewerage system users' share	%	BDR 2007
പ്പറ്റ്	X ₁₂₀₇	Share of flats with central heating	%	BDR 2007
livin	X ₁₂₀₈	Share of flats with gas installations	%	BDR 2007
	X ₁₂₀₉	Health protection expenditures per inhabitant	PLN	BDR 2007
	X ₁₂₁₀	Flats per 1000 people	flats	BDR 2007
	X ₁₂₁₁	Average floorspace per person	m²	BDR 2007
5 <u>5</u>	X ₁₃₀₁	Real estate tax per inhabitant	PLN	BDR 2007
Econd mic devel pmen	X ₁₃₀₂	Parishes' share in tax on legal bodies per inhabitant	PLN	BDR 2007

Table 1. The initial set of diagnostic features related to social-economic development

¹ Regional Data Bank of the Central Statistical Office

Х ₁₃₀₃	Parishes' share in personal income tax per	PLN	BDR 2007
	inhabitant		
X ₁₃₀₄	Property investment expenditures from the	PLN	BDR 2003-2007
	parish budget per inhabitant in 2003-2007		
X ₁₃₀₅	Economic subjects registered in the REGON	units	BDR 2007
	National Business Registry per 100 parish		
	inhabitants		
X ₁₃₀₆	Commercial partnerships with foreign capital		BDR 2007
	share per 100 units registered in REGON National		
	Business Registry		
Х ₁₃₀₇	Section J (information and communication) and	units	BDR 2007
	section K (financial and insurance business)		
	subjects' share in the subjects registered in		
	REGON National Business Registry		
X ₁₃₀₈	Unemployed working age people share	%	BDR 2007

Source: own study

The second set of variables describes the real estate economy structure and concentrates on three areas: parish lands economy, housing and local planning.

Table 2. The	initial set of	diagnostic	features o	of the real	l estate ecor	nomy in	the parish
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Variable group	Variable symbol	Variable name	Measurement unit	Data source
gement	X ₂₁₀₁	Parish real estate area share in the total parish area	%	BDR 2007
Land mana	X ₂₁₀₂	Perpetual usufruct lands' share in communalised lands area	%	BDR 2007
×	X ₂₂₀₁	Property investment expenditures for housing per inhabitant	PLN	BDR 2007
tioc	X ₂₂₀₂	Council flats per 1000 inhabitants	flat	BDR 2007
Housing s managen	X ₂₂₀₃	Flats with service and utility charges in arrears for over 3 months – share in the total parish housing	%	BDR 2007
	X ₂₃₀₁	Share of the parish area under effective local planning based on the Act of 7 July 1994 and 27 March 2003	%	BDR 2007
	X ₂₃₀₂	Share of the area under planning based on the Act of 27 March 2003 to the area under local planning based on the Act of 7 July 1994 and 27 March 2003	%	BDR 2007
un Ba	X ₂₃₀₃	Share of the area under local planning based on the Act of 27 March 2003 in the total parish area	%	BDR 2007
Local pla	X ₂₃₀₄	Share of the area intended for future building in accordance with the plans based on the Act of 27 March 2003 in the total parish area.	%	BDR 2007

Source: own study

The presented sets of variables served to create synthetic measures on the basis of which 178 Małopolska Province parishes were evaluated in accordance with the level of their socialeconomic development and the real estate economy effects in 2007. I carried out the assessment of the space diversity in Małopolska Province parishes on the basis of taxonomic analysis method and I statistically defined the relation between the social-economic development and the real estate economy in the parish. The advantage of using GUS data as well as taxonomic measurements was the possibility to create collective measurements mirroring numerous and differentiated features of the parishes as well as gaining the possibility to compare the units. The weak aspect of this research was thematically restricted range of information gathered in the public resources of the Central Statistical Office in Poland (GUS) as well as ambiguity in assessing the influence of several initial variables upon aggregation phenomenon, which raised interpretation doubts.

- The second stage of the research was conducted in accordance with instrumental approach to the real estate economy. The aim of this stage was identifying and assessing the use of the real estate economy instruments for the purposes of the local development in the Małopolska Province parishes. In order to reach the above-mentioned aim, I created a survey and sent it to 182 parishes of the Province. The response level slightly exceeded 50%. In total, 92 parish offices sent their completed surveys back. I divided all the parishes participating in the research into two following groups with regards to the value of the synthetic variable of the social-economic development calculated on the basis of taxonomic analysis:
 - a group of well-developed parishes and
 - a group of underdeveloped parishes.

Another division of participating parishes which I used was the criterion of type allowing for distinguishing the following groups from the researched collection:

- o a group of urban parishes
- o a group of rural parishes
- a group of urban-rural (mixed) parishes.

I analysed data obtained from the survey according to the above-mentioned separate five groups. The aim of such analytical approach was obtaining information about the relations between the use of real estate economy instruments in the parishes and the level of their social-economic development.

2. Results of empirical research

2.1. Taxonomy-model analysis

Taxonomic analysis was carried out in the following stages presented below:

A. Statistic verification of diagnostic variables

Verification of initially accepted set of variables aims at assessing the statistical usability of variables and was carried out based on two main criteria:

• Discrimination ability of variables that is tested by the feature variability level;

• Capacity (information potential) of variables that is tested by the degree of their correlation with other variables²

I used the following equations to assess the feature variability level:

$$V_j = \frac{s_j}{\overline{x}_j} \qquad (j = 1, ..., m),$$
equation 1.1

where:

$$\overline{x}_j = \frac{\sum_{i=1}^n x_{ij}}{n} \qquad (j = 1, \dots, m),$$
equation 1.2

equation 1.3

$$s_j = \sqrt{s_j^2} = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_{ij} - \overline{x}_j)^2}$$
 $(j = 1, ..., m),$

In order to assess the information potential I analyzed of correlation matrix of individual variable pairs.

$$R = \begin{bmatrix} 1 & r_{12} & \dots & r_{1k} \\ r_{21} & 1 & \dots & r_{2k} \\ \dots & \dots & \dots & \dots \\ r_{k1} & r_{k2} & \dots & 1 \end{bmatrix}$$

where r_{ij} is a Pearson correlation coefficient of X_i variable with X_j variable.

$$r_{jk} = \frac{cov(X_i X_j)}{s_i s_j}$$
, equation 1.4.

B. Standardization of variables nature

Standardization of variables nature consisted in changing destimulants into stimulants, which I carried out using difference formula:

$$x'_{ij} = c - x_{ij};$$
 $i = 1, 2, ..., n$ equation 1.5.
 $j = 1, 2, ..., m$

where $X_j = (x_{1j}, x_{2j}, ..., x_{nj})$ feature is a changed stimulant and $X'_j = (x'_{1j}, x'_{2j}, ..., x'_{nj})$ feature is a X_j feature after conversion into a stimulant.

It was accepted that $c = \max x_{ij}$

C. Correction of negative values

² Compare to T. Panek, Statystyczne metody wielowymiarowej analizy porównawczej, Szkoła Główna Handlowa, Warsaw, Warsaw 2009, p.18

The next necessary transformation was the action which aimed at obtaining positive values of features (postulate of non-negative normalized values). Because in the selected group of variables there is a feature which had both negative and positive values, this feature underwent additive correction according to the following formula³:

equation 1.6

where is a feature after correction with positive values.

I adopted the assumption that $\boldsymbol{\varepsilon} = \boldsymbol{0}$.

D. Normalization of variables

In the next step, after the nature of variables had been standardized, I carried out their normalization. The aim of this process was to obtain comparable features. I applied a quotient formula against the mean⁴

$$z_{ij} = \frac{x_{ij}}{\overline{x_j}}, \qquad \overline{x_j} \neq 0, \qquad (i = 1, 2, ..., n; j = 1, 2, ..., m)$$
 equation 1.7

E. Construction of a synthetic variable

For the purpose of this paper, when constructing a synthetic variable I used a non-model method based on an arithmetic mean with the application of the equation:

$$z_i = \frac{1}{m} \sum_{j=1}^{m} z_{ij}$$
 (*i* = 1,...,*n*) equation 1.8

F. Results – synthetic variables of social and economic development Z_1 and the condition of real estate economy Z_2

Below there is a list of synthetic values for 178 parishes of the Małopolska Province, where:

- Z_1 a synthetic variable which describes the level of social and economic development
- Z₂ a synthetic variable which describes the condition of local (parish) development of real estate

Table 3. Arrangement of Małopolska Province parishes according to synthetic values of variables Z_{1} and Z_{2}

L.P.	Parish Name/Type	² 1 Value	⁴ 2 Value Ranking	Parish Name/Type	Z ₂ Value	² 1 Value Ranking

³ A. Młodak, Analiza taksonomiczna w statystyce regionalnej, Difin, Warsaw 2006, pp. 42-43

⁴ A. Malina, Wielowymiarowa analiza przestrzennego zróżnicowania struktury gospodarki Polski według województw, Wydawnictwo Akademii Ekonomicznej w Krakowie, Krakow 2004, p. 32

1	Kraków (1)	3,24	5	Oświęcim (1)	3,58	5
2	Tarnów (1)	2,36	4	Bochnia (1)	3,05	3
3	Bochnia (1)	2,25	2	Limanowa (1)	2,99	15
4	Nowy Sącz (1)	2,20	7	Tarnów (1)	2,68	2
5	Oświęcim (1)	2,03	1	Kraków (1)	2,66	1
6	Zielonki (2)	2,00	61	Myślenice (3)	2,52	28
7	Gorlice (1)	1,95	8	Nowy Sącz (1)	2,37	4
8	Zabierzów (2)	1,95	97	Gorlice (1)	2,33	7
9	Bolesław (2a)	1,74	90	Olkusz (3)	2,27	25
10	Bukowno (1)	1,71	51	Nowy Targ (1)	2,04	21
11	Trzebinia (3)	1,70	50	Andrychów (3)	1,98	32
12	Mogilany (2)	1,67	36	Spytkowice (2b)	1,91	80
13	Chełmek (3)	1,65	13	Chełmek (3)	1,88	13
14	Niepołomice (3)	1,65	58	Kęty (3)	1,84	23
15	Limanowa (1)	1,57	3	Brzeszcze (3)	1,82	26
16	Wieliczka (3)	1,57	18	Skawina (3)	1,81	117
17	Skawina (3)	1,56	16	Bolesław (2b)	1,81	17
18	Zakopane (1)	1,53	34	Wieliczka (3)	1,80	16
19	Chrzanów (3)	1,52	26	Dobczyce (3)	1,77	30
20	Wielka Wieś (2)	1,47	73	Wiśniowa (2)	1,73	121
21	Nowy Targ (1)	1,46	10	Wadowice (3)	1,70	24
22	Jordanów (1)	1,43	25	Michałowice (2)	1,69	38
23	Kęty (3)	1,40	14	Grybów (1)	1,66	88
24	Wadowice (3)	1,40	21	Krynica-Zdrój (3)	1,66	42
25	Olkusz (3)	1,37	9	Jordanów (1)	1,65	22
26	Brzeszcze (3)	1,35	15	Chrzanów (3)	1,64	19
27	Libiąż (3)	1,34	112	Tymbark (2)	1,62	104
28	Myślenice (3)	1,34	6	Łososina Dolna (2)	1,59	159
29	Tarnów (2)	1,33	134	Wolbrom (3)	1,59	61
30	Dobczyce (3)	1,31	19	Charsznica (2)	1,58	109
31	Oświęcim (2)	1,29	143	Czorsztyn (2)	1,55	96
32	Andrychów (3)	1,28	11	Biskupice (2)	1,52	67
33	Kłaj (2)	1,28	54	Rabka-Zdrój (3)	1,51	53
34	Sucha Beskidzka (1)	1,28	35	Zakopane (1)	1,51	18

35	Brzesko (3)	1,27	38	Sucha Beskidzka (1)	1,47	34
36	Muszyna (3)	1,27	93	Mogilany (2)	1,46	12
37	Klucze (2)	1,25	68	Szczurowa (2)	1,44	35
38	Michałowice (2)	1,23	22	Brzesko (3)	1,44	138
39	Mszana Dolna (1)	1,23	69	Zator (3)	1,42	134
40	Krzeszowice (3)	1,22	92	Biecz (3)	1,42	46
41	Świątniki Górne (3)	1,21	86	Żabno (3)	1,41	143
42	Krynica-Zdrój (3)	1,19	24	Zawoja (2)	1,41	51
43	Miechów (3)	1,18	123	Pcim (2)	1,38	166
44	Liszki (2)	1,17	52	Kamienica (2)	1,38	83
45	Skała (3)	1,16	127	Szczawnica (1)	1,30	75
46	Zator (3)	1,15	39	Moszczenica (2)	1,26	168
47	Sułkowice (3)	1,13	162	Tuchów (3)	1,24	54
48	Alwernia (3)	1,12	62	Siepraw (2)	1,24	101
49	Kocmyrzów-Luborzyca (2)	1,12	173	Mucharz (2)	1,22	73
50	Lanckorona (2)	1,12	78	Trzebinia (3)	1,22	11
51	Żabno (3)	1,12	41	Bukowno (1)	1,21	10
52	Koniusza (2)	1,09	113	Liszki (2)	1,19	44
53	Rabka-Zdrój (3)	1,09	33	Stary Sącz (3)	1,18	100
54	Siepraw (2)	1,09	48	Kłaj (2)	1,17	95
55	Wierzchosławice (2)	1,07	76	Brzeźnica (2)	1,17	33
56	Wietrzychowice (2)	1,06	66	Szerzyny (2)	1,16	174
57	Dąbrowa Tarnowska (3)	1,05	67	Podegrodzie (2)	1,15	137
58	Kalwaria Zebrzydowska (3)	1,05	70	Niepołomice (3)	1,13	14
59	Babice (2)	1,03	144	Wieprz (2)	1,12	102
60	Bochnia (2)	1,02	71	Gródek nad Dunajcem (2)	1,07	77
61	Wolbrom (3)	1,02	29	Zielonki (2)	1,07	6
62	Gdów (2)	0,99	103	Alwernia (3)	1,06	48
63	Przeciszów (2)	0,99	104	Nowy Wiśnicz (3)	1,05	129
64	Skrzyszów (2)	0,99	109	Kamionka Wielka (2)	1,05	106
65	Chełmiec (2)	0,98	126	Lipinki (2)	1,04	114
66	Dębno (2)	0,98	102	Wietrzychowice (2)	1,01	57
67	Biskupice (2)	0,97	32	Dąbrowa Tarnowska (3)	1,01	56
68	Czernichów (2)	0,97	105	Klucze (2)	1,00	37

69	Maków Podhalański (3)	0,97	129	Mszana Dolna (1)	0,99	39
70	Mędrzechów (2)	0,97	131	Kalwaria Zebrzydowska (3)	0,96	60
71	Tomice (2)	0,97	114	Bochnia (2)	0,96	58
72	Iwanowice (2)	0,95	161	Lipnica Wielka (2)	0,96	162
73	Mucharz (2)	0,94	49	Wielka Wieś (2)	0,95	20
74	Osiek (2)	0,94	146	Dobra (2)	0,94	165
75	Szczawnica (1)	0,94	45	Bobowa (2)	0,94	158
76	Zembrzyce (2)	0,94	83	Wierzchosławice (2)	0,94	55
77	Gródek nad Dunajcem (2)	0,92	60	Ryglice (3)	0,93	156
78	Łapanów (2)	0,92	139	Lanckorona (2)	0,92	50
79	Rzezawa (2)	0,92	147	Sękowa (2)	0,90	136
80	Spytkowice (2b) ⁵	0,92	12	Gnojnik (2)	0,90	167
81	Bukowina Tatrzańska (2)	0,91	157	Łukowica (2)	0,90	178
82	Krościenko nad Dunajcem (2)	0,91	96	Łabowa (2)	0,90	99
83	Pcim (2)	0,91	43	Zembrzyce (2)	0,89	128
84	Proszowice (3)	0,91	110	Nowy Targ (2)	0,89	108
85	Łapsze Niżne (2)	0,90	87	Ropa (2)	0,89	76
86	Polanka Wielka (2)	0,90	145	Świątniki Górne (3)	0,88	41
87	Słomniki (3)	0,90	94	Łapsze Niżne (2)	0,87	139
88	Grybów (1)	0,89	23	Czarny Dunajec (2)	0,87	85
89	Jerzmanowice-Przeginia (2)	0,89	100	Sułoszowa (2)	0,86	9
90	Lisia Góra (2)	0,89	160	Bolesław (2a)	0,86	133
91	Lubień (2)	0,89	159	Jodłownik (2)	0,85	171
92	Stryszów (2)	0,89	106	Krzeszowice (3)	0,84	40
93	Szaflary (2)	0,89	170	Muszyna (3)	0,84	36
94	Żegocina (2)	0,89	98	Słomniki (3)	0,83	150
95	Brzeźnica (2)	0,88	55	Koszyce (2)	0,83	87
96	Czorsztyn (2)	0,88	31	Krościenko nad Dunajcem	0,82	82
97	Drwinia (2)	0,88	117	Zabierzów (2)	0,82	8
98	Książ Wielki (2)	0,88	158	Żegocina (2)	0,81	132
99	Sękowa (2)	0,88	79	Niedźwiedź (2)	0,81	94
100	Stary Sącz (3)	0,88	53	Jerzmanowice-Przeginia	0,79	89
101	Tuchów (3)	0,88	47	Racławice (2)	0,78	173
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⁵ Spytkowice in a Wadowice district (the same name but different place)

102	Wieprz (2)	0,87	59	Dębno (2)	0,76	66
103	Kościelisko (2)	0,86	137	Gdów (2)	0,76	62
104	Tymbark (2)	0,86	27	Przeciszów (2)	0,75	63
105	Gorlice (2)	0,85	133	Czernichów (2)	0,74	68
106	Nowy Wiśnicz (3)	0,85	63	Stryszów (2)	0,74	92
107	Poronin (2)	0,85	168	Trzciana (2)	0,74	124
108	Ropa (2)	0,83	85	Trzyciąż (2)	0,73	64
109	Charsznica (2)	0,82	30	Skrzyszów (2)	0,73	163
110	Czchów (3)	0,82	167	Proszowice (3)	0,72	84
111	Igołomia-Wawrzeńczyce (2)	0,82	151	Gołcza (2)	0,71	144
112	Pleśna (2)	0,82	175	Libiąż (3)	0,70	27
113	Stryszawa (2)	0,82	142	Koniusza (2)	0,69	52
114	Lipinki (2)	0,81	65	Tomice (2)	0,68	154
115	Raba Wyżna (2)	0,81	141	Łącko (2)	0,68	71
116	Radłów (2)	0,81	132	Gromnik (2)	0,67	164
117	Bolesław (2b)	0,80	17	Drwinia (2)	0,66	97
118	Nawojowa (2)	0,80	165	Budzów (2)	0,65	148
119	Olesno (2)	0,80	169	Gręboszów (2)	0,65	170
120	Radziemice (2)	0,80	166	Korzenna (2)	0,64	151
121	Wiśniowa (2)	0,80	20	Rytro (2)	0,64	175
122	Biały Dunajec (2)	0,78	176	Grybów (2)	0,64	43
123	Spytkowice (2a) ⁶	0,78	148	Miechów (3)	0,64	157
124	Trzciana (2)	0,78	107	Słopnice (2)	0,63	65
125	Ciężkowice (3)	0,77	140	Tokarnia (2)	0,63	176
126	Jordanów (2)	0,77	152	Chełmiec (2)	0,63	160
127	Nowe Brzesko (2)	0,77	150	Skała (3)	0,62	69
128	Nowy Targ (2)	0,77	84	Mszana Dolna (2)	0,62	145
129	Kamionka Wielka (2)	0,76	64	Maków Podhalański (3)	0,62	45
130	Pałecznica (2)	0,76	171	Słaboszów (2)	0,61	177
131	Szczucin (2)	0,76	164	Mędrzechów (2)	0,60	70
132	Niedźwiedź (2)	0,75	99	Radłów (2)	0,59	116
133	Sułoszowa (2)	0,75	89	Gorlice (2)	0,58	105
134	Biecz (3)	0,74	40	Tarnów (2)	0,56	172

⁶ Spytkowice in Nowy Targ district district (the same name bu different place)

135	Lipnica Murowana (2)	0,73	138	Ochotnica Dolna (2)	0,56	29
136	Gnojnik (2)	0,72	80	Piwniczna-Zdrój (3)	0,55	125
137	Podegrodzie (2)	0,72	57	Kościelisko (2)	0,55	103
138	Szczurowa (2)	0,72	37	Lipnica Murowana (2)	0,55	135
139	Czarny Dunajec (2)	0,71	88	Łapanów (2)	0,55	78
140	Piwniczna-Zdrój (3)	0,71	136	Ciężkowice (3)	0,55	140
141	Uście Gorlickie (2)	0,71	156	Raba Wyżna (2)	0,54	115
142	Borzęcin (2)	0,70	149	Stryszawa (2)	0,49	59
143	Zawoja (2)	0,70	42	Oświęcim (2)	0,49	31
144	Gołcza (2)	0,69	111	Babice (2)	0,49	113
145	Mszana Dolna (2)	0,69	128	Polanka Wielka (2)	0,48	86
146	Laskowa (2)	0,68	153	Osiek (2)	0,47	142
147	Raciechowice (2)	0,67	177	Rzezawa (2)	0,47	127
148	Budzów (2)	0,66	118	Spytkowice (2a)	0,47	74
149	lwkowa (2)	0,66	172	Borzęcin (2)	0,47	79
150	Koszyce (2)	0,66	95	Nowe Brzesko (2)	0,47	123
151	Grybów (2)	0,65	122	Igołomia-Wawrzeńczyce (2)	0,46	111
152	Bystra-Sidzina (2)	0,64	155	Jordanów (2)	0,46	126
153	Limanowa (2)	0,64	174	Laskowa (2)	0,45	152
154	Łącko (2)	0,64	115	Łużna (2)	0,45	146
155	Łużna (2)	0,64	154	Bystra-Sidzina (2)	0,45	155
156	Ryglice (3)	0,64	77	Uście Gorlickie (2)	0,45	141
157	Rytro (2)	0,64	121	Bukowina Tatrzańska (2)	0,44	81
158	Dobra (2)	0,63	74	Książ Wielki (2)	0,43	98
159	Łososina Dolna (2)	0,63	28	Lubień (2)	0,43	91
160	Tokarnia (2)	0,63	125	Lisia Góra (2)	0,42	90
161	Kozłów (2)	0,62	178	Iwanowice (2)	0,41	72
162	Lipnica Wielka (2)	0,62	72	Sułkowice (3)	0,41	47
163	Trzyciąż (2)	0,62	108	Radgoszcz (2)	0,39	169
164	Gromnik (2)	0,61	116	Szczucin (2)	0,39	131
165	Bobowa (2)	0,60	75	Nawojowa (2)	0,38	118
166	Kamienica (2)	0,60	44	Radziemice (2)	0,38	120
167	Łabowa (2)	0,59	82	Czchów (3)	0,32	110
168	Moszczenica (2)	0,59	46	Poronin (2)	0,31	107

169	Radgoszcz (2)	0,59	163	Olesno (2)	0,30	119
170	Gręboszów (2)	0,58	119	Szaflary (2)	0,30	93
171	Jodłownik (2)	0,58	91	Pałecznica (2)	0,29	130
172	Ochotnica Dolna (2)	0,57	135	Iwkowa (2)	0,24	149
173	Racławice (2)	0,56	101	Kocmyrzów-Luborzyca (2)	0,23	49
174	Szerzyny (2)	0,56	56	Limanowa (2)	0,23	153
175	Korzenna (2)	0,51	120	Pleśna (2)	0,23	112
176	Słopnice (2)	0,50	124	Biały Dunajec (2)	0,21	122
177	Słaboszów (2)	0,49	130	Raciechowice (2)	0,20	147
178	Łukowica (2)	0,47	81	Kozłów (2)	0,19	161

Source: own study

Subsequently, the parishes were arranged according to synthetic values of variables Z_1 and Z_2 . In order to do this, a standard deviation method was applied, which made it possible to distinguish four class intervals:

 $G_{1}: z_{i} \geq \overline{z} + S_{z}$ $G_{2}: \overline{z} + S_{z} > z_{i} \geq \overline{z}$ $G_{3}: \overline{z} > z_{i} \geq z_{i} - S_{z}$ $G_{4}: z_{i} < \overline{z} - S_{z}$

First group – parishes with very high level of aggregate variable tested
Second group - parishes with high level of aggregate variable tested
Third group - parishes with low level of aggregate variable tested
Fourth group - parishes with very low level of aggregate variable tested

Figure 1. Spatial differentiation of Małopolska Province parishes according to the value of a synthetic variable $Z_{\rm 1}$



Source: own study

For a variable \mathbb{Z}_2 which depicts the condition of real estate economy

Figure 2. Spatial differentiation of Małopolska Province parishes according to the value of a synthetic variable



Source: own study

Summing up the analysis of the parishes according to the values of synthetic variables \mathbb{Z}_1 and \mathbb{Z}_2 it can be stated that a significant majority of Małopolska Province parishes is made up with units with an average and low level of social and economic development and of the condition of real estate economy. In case of feature \mathbb{Z}_1 , a graphic presentation of the individual variables concentration implies spatial concentration of developmental phenomena, which indicates a large influence of location values (so called geographic rent, agglomeration effect) on development possibilities of territorial units. The value concentration of \mathbb{Z}_2 in a spatial perspective enables distinguishing homogeneous areas to a smaller extent (however, there are such areas) and it indicates more intensive parish differentiation in terms of the condition of real estate economy.

G. Interdependence analysis between the level of social and economic development and real estate economy

The correlation matrix (Table No. 4.1) presents the values of individual Pearson correlation coefficients for the pairs of synthetic and partial variables.

Synthetic variables	2.0	Z ³	ZG	Z ₁	Z ^M o	Z^{N_M}	Z^{N_F}	Zg
ZB	1	0,588	0,742	0,907	0,584	0,391	0,263	0,600
Z^{2}		1	0,624	0,789	0,489	0,361	0,150	0,485
Zª			1	0,921	0,553	0,406	0,228	0,574
Z_1				1	0,621	0,440	0,252	0,636
$Z^{N_{G}}$					1	0,419	0,190	0,804
Z^{N_M}						1	0,097	0,688
Z^{N_F}							1	0,603
\overline{Z}_2								1

 Table 4. Correlation matrix between synthetic, partial and aggregate variables

Source: own study

The analysis of correlation analysis proves the existence of certain significant dependence between the level of social and economic development and the condition of real estate economy. High values of correlation coefficient were obtained for the pair of synthetic variables Z_1 and Z_2 as well as for Z_1 and Z^{N_G} (land economy), Z_2 and Z^{D} (demographic potential) as well as Z_2 and Z^{G} (economic development).

1.6. Analysis of survey data

The second stage of research was conducted according to the instrumental view of real estate economy and led to identification of dependencies between application of the instruments of real estate economy and social and economic development. A wide scope of survey research enabled analyses of the following notions, to name just a few:

- attitude of parish authorities towards real estate economy as a local development factor,
- defining the significance of individual instruments of real estate economy by the parish authorities for economic development (I.e. entrepreneurship development and attracting external investors),
- identification of ways of using the instruments of real estate economy in researched parishes,
- assessment of comprehensiveness of real estate instruments selection by the parishes,
- assessment of land economy in the parishes,
- assessment of the possibility to use real estate as a source of local income.

Below, only selected research results are presented.

Α

The results presented below are based on the analysis of one of more important questions raised for local (parish) self-governments in the organized survey. This question referred to utilization of the enumerated instruments of real estate economy by the local authorities within the last ten years. The potential instruments of real estate economy I asked about in the survey were as follows:

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preparation of location offers for investors,
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В	local authority support for an investor in the process of granting construction
	permit,
C	local authority support for an investor in the process of negotiation with the owners
	of real estate to get land for investments,
D	preparation of land for investments by means of conversion – reclassification,
	combining and dividing,
E	adopting plans of spatial development which are actual and convenient for
	investors,
F	application of lower property tax rates that statutory rates,
G	differentiation of property tax rates due to the character of business, location of the
	real property and type of construction,
н	using property tax reliefs and tax exemptions in relation to the character of business
	or investment activity,
I	development of infrastructure in the investment area for private entities,
J	investing into development and appropriate maintenance of local road connections,
К	purchasing land by the parish from private owners in order to prepare and provide
	the land to investors,
L	temporary provision of buildings and parish premises on a lease/rental basis to
	conduct business activities,
М	application of preferential rental rates for parish real property in order to conduct
	business activities,

I asked about the use of the aforementioned instruments for stimulation of economic development. The activity of local authorities for the economic development leads to supporting local entrepreneurship and attracting new investors to come to the parish.





Source: own study

The figure below presents the respondents' answers in relation to application of the instruments of real estate economy. The results were analyzed according to a split into a group of parishes with high and low level of social and economic development.

Based on the presented figure it is possible to show certain types of instruments which are widely used by the parishes with high level of development. These instruments function as support for investment tools, i.e. they create conditions for development of private investment activity. Based on this main conclusion I developed activity indexes for the use of the instruments of real estate economy. I divided these instruments into two groups:

- investment supporting instruments,
- instruments of financial support

I analyzed the use of these two groups of instruments in the parishes with high and low level of development. The results of these analyses are presented in the diagrams below.



Figure 4. Index of the usage of real estate economy instruments in the parishes with high level of social-economic development

Source: own study

The largest percentage share of parishes shows high activity in using investment-supporting instruments. In this group, there are no entities that show low activity in this scope. However, the instruments of financial support are significantly less popular in this group of parishes, which is indicated by the medium and low activity in the application of these tools.

Figure 5. Index of the usage of real estate economy instruments in the parishes with low level of social-economic development



Source: own study

In the parishes with low level of development, there are no significant differences in application of the instruments of financial support and investment supporting instruments. Both mentioned groups of instruments are used in a similar scope, with only slight predominance of investment supporting instruments.





Figure 6. compares investment-supporting activity of the parishes with high and low level of social and economic development. Figure 7. shows the activity of the parishes in terms of using instruments of financial support.

Figure 7. Index of the financial -supporting activity

Source: own study



Source: own study

The diagrams presented here significantly indicate the differences existing between the parishes with high and low level of development. It is possible to draw a conclusion that one of the success factors for the parishes with high level of development is their concentration on investment supporting activity.

The next significant instrument use analysis aimed at selection of coexisting instruments, which may indicate the comprehensiveness of the parishes' policy.

In order to assess the coexistence of the instruments of real property economy, five coefficients were selected⁷:

- Russel and Rao's measurement (RR);
- Jaccard's measurement (Jaccard);
- Dice's measurement (Dice);
- Sokal and Sneath's measurement (SS2);
- 1 Kulczyński's measurement (K1)

Table 5. shows the results of the calculations

Table 5. The coexistence of the instruments of real property economy

Instruments			The coexistence for binary data				
Parishes' policy instruments	Parishes' policy instruments	RR	JACCARD	DICE	SS1	K1	
preparation of location offers for investors	local authority support for an investor in the process of granting construction permit	0,587	0,711	0,831	0,551	2,455	
preparation of location offers for investors	local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	0,533	0,653	0,79	0,485	1,885	
preparation of location offers for investors	preparation of land for investments by means of conversion – reclassification, combining and dividing	0,62	0,731	0,844	0,576	2,714	
preparation of location offers for investors	adopting plans of spatial development which are actual and convenient for investors	0,685	0,733	0,846	0,578	2,739	
preparation of location offers for investors	application of lower property tax rates that statutory rates	0,533	0,613	0,76	0,441	1,581	

⁷ The characteristics of individual similarity coefficients is included in a paper: Metodologia...op.cit, pp.485-487

preparation of location offers for investors	investing into development and appropriate maintenance of local road connections	0,696	0,719	0,837	0,561	2,56
preparation of location offers for investors	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,641	0,686	0,814	0,522	2,185
local authority support for an investor in the process of granting construction permit	local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	0,543	0,714	0,833	0,556	2,5
local authority support for an investor in the process of granting construction permit	preparation of land for investments by means of conversion – reclassification, combining and dividing	0,576	0,679	0,809	0,515	2,12
local authority support for an investor in the process of granting construction permit	adopting plans of spatial development which are actual and convenient for investors	0,652	0,706	0,828	0,545	2,4
local authority support for an investor in the process of granting construction permit	application of lower property tax rates that statutory rates	0,5	0,582	0,736	0,411	1,394
local authority support for an investor in the process of granting construction permit	investing into development and appropriate maintenance of local road connections	0,663	0,693	0,819	0,53	2,259
local authority support for an investor in the process of granting construction permit	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,598	0,64	0,78	0,47	1,774
local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	preparation of land for investments by means of conversion – reclassification, combining and dividing	0,543	0,667	0,8	0,5	2
local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	adopting plans of spatial development which are actual and convenient for investors	0,576	0,616	0,763	0,445	1,606
local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	application of lower property tax rates that statutory rates	0,467	0,566	0,723	0,394	1,303
local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	investing into development and appropriate maintenance of local road connections	0,598	0,625	0,769	0,455	1,667
local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,554	0,607	0,756	0,436	1,545
preparation of land for investments by means of conversion – reclassification, combining and dividing	adopting plans of spatial development which are actual and convenient for investors	0,717	0,786	0,88	0,647	3,667
preparation of land for investments by means of conversion – reclassification, combining and dividing	application of lower property tax rates that statutory rates	0,565	0,667	0,8	0,5	2
preparation of land for investments by means of conversion – reclassification, combining and dividing	development of infrastructure in the investment area for private entities	0,457	0,56	0,718	0,389	1,273
preparation of land for investments by means of conversion – reclassification, combining and dividing	investing into development and appropriate maintenance of local road connections	0,717	0,75	0,857	0,6	3
preparation of land for investments by means of conversion – reclassification, combining and dividing	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,652	0,698	0,822	0,536	2,308
adopting plans of spatial development which are actual and convenient for investors	application of lower property tax rates that statutory rates	0,63	0,674	0,806	0,509	2,071
adopting plans of spatial development which are actual and convenient for investors	development of infrastructure in the investment area for private entities	0,533	0,598	0,748	0,426	1,485
adopting plans of spatial development which are actual and convenient for investors	investing into development and appropriate maintenance of local road connections	0,87	0,909	0,952	0,833	10

adopting plans of spatial development which are actual and convenient for investors	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,783	0,818	0,9	0,692	4,5
application of lower property tax rates that statutory rates	investing into development and appropriate maintenance of local road connections	0,652	0,682	0,811	0,517	2,143
application of lower property tax rates that statutory rates	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,62	0,687	0,814	0,523	2,192
development of infrastructure in the investment area for private entities	investing into development and appropriate maintenance of local road connections	0,533	0,57	0,726	0,398	1,324
investing into development and appropriate maintenance of local road connections	temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities	0,826	0,864	0,927	0,76	6,333

Source: own study using a computer program IBM SPSS18 Statistics

The values in red indicate these measurement values which meet the first border criterion – their value is higher than the average value of matrixes. Purple was used to indicate these values which meet the second criterion, which proves their strong similarity (coexistence).

Investment-supporting instruments prevail in the list. Based on high values of similarity coefficients two groups were created with coexisting elements:

- The first group:
 - o preparation of location offers for investors
 - local authority support for an investor in the process of negotiation with the owners of real estate to get land for investments preparation of land for investments by means of conversion – reclassification, combining and dividing
 - o adopting plans of spatial development which are actual and convenient for investors
 - \circ $\;$ application of lower property tax rates that statutory rates
 - o investing into development and appropriate maintenance of local road connections
 - temporary provision of buildings and commune premises on a lease/rental basis to conduct business activities
- The second group:
 - preparation of land for investments by means of conversion reclassification, combining and dividing
 - o adopting plans of spatial development which are actual and convenient for investors
 - development of infrastructure in the investment area for private entities investing into development and appropriate maintenance of local road connections

Based on these groups of instruments the coexistence of investment-supporting instruments is clearly visible. It proves the complementarity of tools which support investments and certain degree of comprehensiveness of investment programs executed by the parishes.

Conclusions

2.3. Verification of objectives and hypotheses

The main conclusions that I obtained based on literature research and my own empirical analyses are as follows:

- Małopolskie Province is characterised by a significant spatial diversity due to partial and synthetic variables which describe social and economic development and real estate economy,
- A significant positive correlation relation significantly binds social and economic development level of the parishes and the condition of real estate economy. Due to the complexity of the analysed phenomena as well as their mutual co-influence it is difficult to talk about simple cause and effect relation between social and economic development and real estate economy on a local level.
- The activity of local authorities definitely contributes to parish development, which in the area of real estate economy should first and foremost consist in the activities supporting:
 - Simplification and facilitation of the investment process which investors have to go through,
 - o Increase of the investment value of lands over the parish,
 - Creation of public land resources which enable undertaking investment projects (e.g. infrastructural ones) alone or with the cooperation with private entities and their provision the purpose of private investments,
 - Implementation of comprehensive and long-term investor supporting programs.
- Efficiency of individual real estate economy instruments depends on specific development conditioning of a given area, nevertheless it is possible to indicate certain general principles of application:
 - among all available real estate economy instruments, in the light of economic development the most important instruments are investment-supporting ones,
 - due to the costs of execution of investment-supporting actions by the parishes, they should be directed to certain area intended for investment activity and correspond to the investors' needs,
 - Financial support instruments in the form of reliefs, exemptions and abandonment of real estate charges should not be widely used as this adversely influences the level of parishes' budget income without being a significant help for the investors at the same time.
 - Possible use of financial support instruments should be directed to defined business entities the selection of which is made based on narrow criteria,
 - Using the instruments of real estate economy should be subordinated to strategic objectives of social and economic development and executed in a form of comprehensive and long-term actions.

In the research project the objectives were reached. All hypotheses were positively verified.

2.4. Practical application of research results

The results obtained may be used primarily by:

• local self-governments when developing a strategy of social and economic development, investment plans and other programs connected with the area of real estate economy,

- the authorities of Małopolska Province as a synthetic set of useful information about the degree of parish development in Małopolska Province, the effects of real estate economy, the scope of real estate economy instruments used,
- scientists and students as a reason for further deeper analyses of the relations of real estate economy and parish activity and the effects in the form of intensified processes of local development.

2.5. Recommendation for further research

Undoubtedly, the research conducted did not provide answers to many other questions that seem reasonable in relation to the subject of this paper. I chose quantitative research that makes it possible to draw only general conclusions due to the form I chose and the availability and quality of the information. I wanted to carry out comprehensive analysis of the area of Małopolska Province and to obtain a considerably wide perspective, which would enable indication of certain problems that are worth handling in further research. I can currently include the following research problems:

- process of selection, implementation and effects of real estate instruments in the parishes;
 - criteria of selecting real estate economy instruments, their comprehensiveness and advisability,
 - implementation of real estate economy instruments, long-term nature of actions, method and quality of monitoring, flexibility of programs so that the can be adjusted to the expected and subsequent changes of the determinants for tools implementation.
 - $\circ\,$ Forecasting and evaluation of effects of real estate economy instruments,
- adjusting the programs of real estate economy and their execution to the needs and the expectations of the investors.

The identified research problems require deeper research which combine quantitative analyses with qualitative methods that make it possible to take into consideration specific nature of parishes, separate developmental conditions, opportunities and objectives of the actions taken.

Appendix.

Short characteristics of the area of Małopolska Province

Malopolska is one of sixteen provinces (regions) in Poland. It is located in the south of Poland and covers the area of 15 190km². There are 57 cities in this territory, including three with district rights, such as Krakow – the capital city of the province (a place where the ERES conference was held two years ago – in 2008), Tarnow and Nowy Sacz. The territory of Małopolska Province was divided into 22 districts, which in turn are divided into parishes. Generally, the province was divided into 182 parishes. The province is inhabited by ca. 3 300 000 people, which gives it the fourth place in Poland in terms of population number and the first place when it comes to density of population. Małopolska Province offset convenient conditions for the development of high technology sector, automotive or tourist industry due to significant scientific and research potential, developed higher

education system and access to qualified work force. Also the number of student makes Malopolska the second region in Poland.

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