Selected Mesoeconomic Indicators of Regional Development in Poland Based on Intermunicipal Cooperation

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Abstract:

Purpose: The aim of the study was to identify the mesoeconomic determinants of regional development in Poland based on intermunicipal cooperation.
Design/Methodology/Approach: The research used analytical methods, including the local development index, determined for Polish local government units (municipalities) in 2008-2014, subsequently evaluated in 2015-2019. Moreover, in programming the inter-municipal cooperation model, the method of diagnostic survey, comparative and descriptive analysis was applied.
Findings: There is need for a way of regional development modeling based not only on competitiveness indicators (such as the aggregate Local Development Index), but also on a paradigm of partnership and differentiated cooperation conditions in functional areas.
Practical Implications: The Local Development Index can provide a starting point for programming alternative developments in the functional areas. At least two local development roadmaps can be used in practice. First, the idea of homogeneous areas development, programming the growth of socio-economic cohesion at territorial meso-level. Second, the idea for areas with natural spatial and settlement diversity, conscious maintenance of diversity.
Originality/Value: In this study, on the case of Polish municipalities, selected quantitative and qualitative factors of local development were assessed. It was confirmed that the

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influence of "traditional" competitiveness factors is decreasing. However, the development potential of municipalities and functional areas increases when the important role of intermunicipal cooperation factors and the partnership paradigm is recognized. The partnership model has a specific format, unique for each functional area or municipality, therefore it needs to be programmed, applied and evaluated.

1. Introduction

Changes in local and regional development programming leads to the evaluation of relations between different actors who are also the market participants. This problem concerns institutional relationships, including intermunicipal connections, as well as intersectoral linkages. Above all, those market relations that occur at the periphery of economic sectors and functional areas are evolving. These boundaries, usually defined by territorial considerations, are not subject to typical barriers, regardless of scale.

Various factors influence the intensity of development processes, cultural changes (in terms of the needs and expectations of the population), changes in competitive potential (within local governments, businesses, households), changes in the competitive situation (social, economic, political, legal, etc.), and finally technological changes (innovation and development of new technologies). However, such a set of indicators seems to be insufficient. Of course, the competitiveness of the local economy, the availability and attractiveness of services, and above all people (human capital), are invariably counted among the most important indicators of change. At the same time, development barriers are identified that determine the development of municipalities, counties or subregions to a different degree.

An opportunity to overcome these barriers is the creation of increasingly strong links with effective entrepreneurship and the activity of citizens. Knowledge of the resources' limitation leads to the search for new, diversified development factors, usually of a qualitative profile. It seems that creating a development policy based only on competition is no longer sufficient, as it provides the contrary of the intended results (Chudobiecki *et al.,* 2016). In this paper an attempt was made to verify the hypothesis assuming an increase in the importance of development factors, constructed on the basis of cooperation models - in opposition to traditional

factors, as a consequence of the classical competitiveness policies. Based on the state of the art and own studies, an attempt was made to formulate recommendations for the Polish development policy. The conclusions were formulated in the perspective of the new institutional economics paradigms (cognitive aspect) and also to business practice (utilitarian aspect).

2. State of the Art

The timely dilemma is the question of discounting the competition impact or the choice to "invest" in collaborative networks, intermunicipal, intersectoral - at the meso level. It is obvious that the resources, which are the source of local and regional development in Poland after 1989, are gradually being depleted. These resources include the income of traditional business sectors, the availability of vacant investment land and infrastructure, and finally untapped human capital.

Also, the financing of local development based on incomes from the sale of municipal assets, European Union funds, and bank loans is changing significantly (Potkański *et al.,* 2016). The task volume of local government units is constantly growing. The meso-economy is also changing as a result of globalization processes and new challenges of glocalization (Swyngedouw, 2004). Demographic changes are occurring. There is no guarantee of simple replacement of generations (Popek and Wanat, 2016). Migration trends are increasing, leading to cultural, systemic, social and structural transformations in the local economy.

However, the pressure of economic growth does not decrease. In such a perspective, the key "factor" of development still remains people, individuals (Potkański *et al.,* 2011, Potkański and Wanat, 2017). It is people, recognizing the strengths but also the weaknesses of the market, who do not want to be dependent only on the dominance of competition (Słodowa-Hełpa, 2013). So how to avoid the "tragedy of the commons" (Hardin, 1998; Ostrom, 2006). Is it necessary to modify the territorial development management system in municipalities? Before the science and practice is the task of determining the "new" starting point, as a result of monitoring changes in the analyzed functional areas. These changes are determined by:

- the competitive potential of the municipality in its functional area (Churski, 2014; Nowak, 2015),
- redefinition of the municipality tasks in the functional area (Felber, 2014; Heffner, 2015; Kaczmarek, 2015; Swianiewicz, 2016),
- flexibility of the municipal resources usage in the functional area (i.e., infrastructure, services, activity of local companies in relation to the changing needs of the citizens).

State of the art, including publications as Banaszewska *et al.* (2021), Bel and Sebő (2021), Casula (2020), Dollery *et al.* (2020), Florida *et al.* (2020), Osman *et al.* (2020),

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Petkovšek *et al.* (2021), are sources for identifying some of the barriers to local development. The collection of key barriers constitutes:

- gradual departure from the traditional economy and promotion of creative \ economy,
- internal migration of active citizens (within functional areas and to other cities and regions),
- urban sprawl, exurbanization ("escape" from city and metropolitan centers into suburban areas),
- leadership crisis,
- educational divide (the need for lifelong learning),
- social exclusion and inequality,
- insufficient offer of local services (based more on infrastructure than on social resources), decreasing influence on quality of life of local community,
- low level of cooperation between local government units, NGOs, business and social partners.

A scientific battle with the "death of the city" idea was undertaken by Richard Florida. In "Who is your city?" this author speculates that the success of local development will be determined by the ability to invite young people into the "new city." Is this hypothesis likely to be confirmed? Florida (2010) writes: "cities and regions that attract young people win the competition with other cities for a better future" (...). Thus, "the places that win are those that become attractive to young people" (...). Therefore, when programming local development, it is correct to look the "creative" factors, including:

- promotion of business initiatives (start-ups, micro, small and medium enterprises),
- knowledge-based entrepreneurship,
- research, innovation, but also revitalization of "dying professions",
- "zero waste" idea, energy efficiency and use of renewable energy sources.

What is the vision? It is the collision of coherence with diversity. The situation is similar to the prisoner's dilemma (Ostrom and Ostrom, 2019; Słodowa-Hełpa, 2015). Have municipalities no alternative, and must they cooperate "like prisoners"? Or maybe creative partnerships can improve effectiveness and quality of public services? From process innovations (management and cooperation) you can move to investments in new technologies and product innovations. Municipalities must overcome the barriers identified earlier, demographic disaster, financial deficit, spatial chaos and high social expectations. These are threats.

What are the real opportunities? It is networking and, on their basis, creation of dedicated functional areas. It seems possible to both increase and integrate the potential of municipalities and use it effectively. As a result, the pressure on economic growth will be "cooled". So, what decisions are expected from municipal actors? Firstly, the accuracy of defining goals, and sometimes the need to define

them "anew". Why? To create effective partnerships. That is, to be a competitive partner "outside" and to cooperate "inside" functional areas (Słodowa-Hełpa 2015).

3. Materials and Methods

The competitive potential of municipalities is the main source of development processes at the territorial level. This parameter is determined by various measures of development potential (ex post). Of course, it is necessary to take into account additional factors as well, especially non-resource factors. All the identified criteria consequently create a regional model of cooperation (ex ante), usually described as a synthetic index of development. In Poland they were used, among others, by Brańka (2015), Kołsut (2015) and Heffner (2015). In practice, it is expected that such an index should be as simple as possible, and its elements, clear, easy and acceptable. Therefore, conducting research in the regional science area, it is necessary to use an adequate measure, representing the real factors of local development. The research scenario was formulated on this basis.

The first step was to diagnose the competitiveness of local government units selected for the study. Competitive ability was determined as a measure of Local Development Index (LD-Index). This measure was designed on the basis of previous research and the authors' experience. The next step was to verify the spatial variability of LD-Index for Polish LGUs. For this purpose, secondary data, obtained in 2008-2014, were used. These results were then verified using the diagnostic survey method (self-assessment of the inter-municipal cooperation status) and compared with data from public statistics for the period 2015-2019. The obtained results were interpreted taking into account the functional typology of the analyzed municipalities.

The aim of the research was to determine the development potential of municipalities that are or may be functional areas. Thus, a development tool was designed (ex ante) and the expected final product is a model of intermunicipal cooperation. In conclusion, based on the principles of descriptive economics, recommendations for local development policy were formulated.

The scope of research was defined as follows:

- research subject: municipality, as the basic unit of local government in Poland;
- spatial scope: all Polish municipalities (total 2479); the used delimitation: big cities ("poviat"), other urban municipalities (cities), urban-rural municipalities and rural municipalities;
- research objective: identification of local development potential based on the designed synthetic measure (LD-Index);
- time scope: data from 2008-2014 and evaluation from 2015-2019.

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The following data sources were used:

- secondary data of public statistics (Central Statistical Office, Local Data Bank, Local Government Analysis System);
- primary data (obtained by the method of diagnostic survey [survey questionnaire and individual in-depth interview]) - to build the intermunicipal cooperation model).

As already indicated, measures of the cooperation level of institutional partners are most often values of aggregate indexes (Brańka, 2015; Potkański *et al.,* 2016). They are not a simple sum of values of individual index components, but their function.

The research used a measure based on the concept of the so-called Synthetic Development Index (Potkański *et al.,* 2016). The value of the index forms a set of base components, showing the components of the municipality's (functional area's) potential. The catalog of components is an open file, depending on the individual characteristics of the functional area. Statistically significant, differentiated criteria were selected that: represent key elements of development, are measurable (synthetic measure) and relatively easy to identify at the local level (purposive selection).

The Local Development Index (LD Index) was presented by the formula:

$$\text{LD-Index} = f\,(P_i), \text{ where } P_i \in \{P_1; P_2; P_3; P_4; P_5; P_6; P_7; \dots P_n\} \qquad (1)$$

Individual symbols mean:

LD-Index – Local Development Index;
P_i – Parameter (measure) of local development (i=1; …; n);
P_1 – Inhabitants wealth parameter;
P_2 – Business level parameter (economic activity);
P_3 – Infrastructure-based parameter (spatial productivity);
P_4 – Local real estate parameter (property market potential);
P_5 – Demographic potential parameter;
P_6 – Social dimension of the local economy (as a destimulant);
P_7 – Demographic burden parameter (as a destimulant);
P_n – Additional parameter (others local specific determinants).

The aggregated LD-Index value consists of at least 7 elements (see formula 1). These are the pillars of the municipality's (functional area's) potential. LD-Index include: (1) household wealth (PIT per capita), (2) business activity level (CIT per capita), (3) infrastructure-based spatial productivity, (4) local real estate market potential, (5) demographic potential of young people entering the local market, the so-called "Creativity Index" by Richard Florida (2010). These elements are the stimulants of development index. In addition, LD-Index is formed by two more

components: (6) social dimension of the local economy (unemployment) and (7) demographic burden - as destimulants. Of course, the catalog of components is an open, constantly infinite set, depending on the specifics of the functional area.

The simplified LD-Index model was used in the research scenario. Its value was determined as the sum of the standard deviations of the individual sub-indices that make up the LD-Index. Indicators 6 and 7 have the reciprocal value. All parameters were treated equally (no special weights were assigned to them) in order to identify possible differences in their impact. LD-Index values for individual municipalities were calculated using the *Z-Scores* method (the synthetic index is the result of normalized values of the component parameters).

The obtained results were aggregated for the main groups of municipalities (big cities, other urban municipalities, urban-rural municipalities and rural municipalities). A comparative analysis was performed, verifying the changes in LD Index values for different types of municipalities. Based on LD-Index analyses and the results of a diagnostic survey in selected municipalities (and functional areas), the intermunicipal cooperation model was programmed.
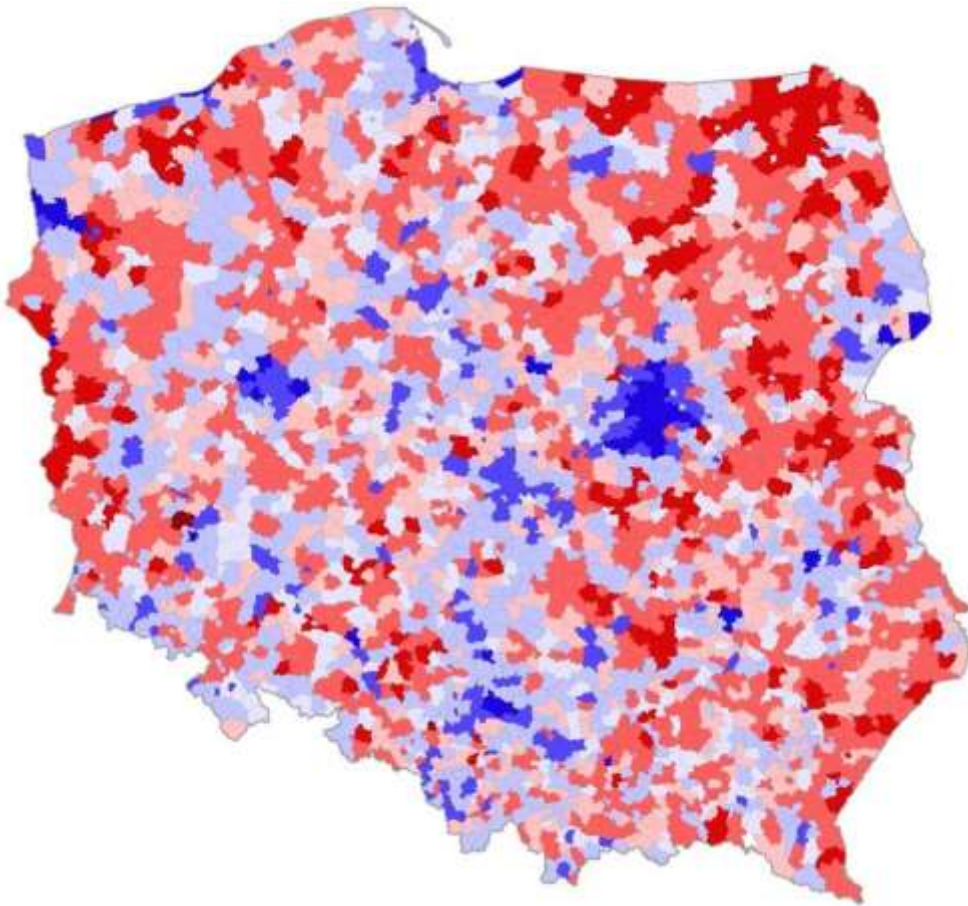
4. Results

Based on the data collected by Potkański *et al.* (2016), the LD-Index component parameters for Polish municipalities were determined. The aggregate index value was then calculated. Changes in the Local Development Index, during the period 2008-2014 and the evaluation 2015-2019, determined for Polish local government units (LGUs), are presented in Table 1 and illustrated in Figure 1.

Table 1. *Identification of LD-Index changes in Polish municipalities (source results from 2008-2016 and evaluation from 2015-2019)*
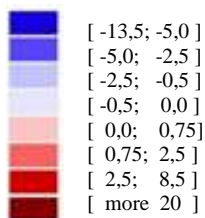
The municipalities' LD-Index changes in Poland in the years 2008-2014, evaluated in 2015-2019				
LD-Index [all municipalities]	LD-Index Drop [total]	LD-Index Drop [%]	LD-Index Growth [total]	LD-Index Growth [%]
Big cities (cities with "poviat status") [66]	**60**	**91%**	6	9%
Other urban municipalities (other cities) [238]	188	79%	50	21%
Urban-rural municipalities (mixed areas) [611]	307	50%	304	50%
Rural municipalities [1564]	597	38%	**967**	**62%**
Total [2479]	1152	---	1327	---

Source: *Own elaboration based on Potkański et al. (2016) and the authors' research.*

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Figure 1. *The variation of the value of the Local Development Index [LD-Index] of LGU's in Poland (difference 2008-2014, evaluated 2015-2019)*

Legend of the **LD-Index** *changes values:*

■ (blue)	[-13,5; -5,0]
■ (blue)	[-5,0; -2,5]
■ (light blue)	[-2,5; -0,5]
■ (pale pink)	[-0,5; 0,0]
■ (pink)	[0,0; 0,75]
■ (red)	[0,75; 2,5]
■ (red)	[2,5; 8,5]
■ (dark red)	[more 20]

Source: *Own elaboration based on Potkański[9] et al., 2016, p. 41, and the authors' research.*

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[9]*Differentiation of LD-Index changes makes it possible to indicate areas with different degrees of development, as well as to identify new functional areas being created as a result of development processes. This is obviously an important topic for additional new research.*

During the analyzed period, a decrease in LD-Index values was noted in 1152 municipalities. In 47 municipalities it was a deep value decrease of this index. In 12 municipalities, the increase was relatively high, and it mainly concerned rural municipalities. In contrast, a significant decrease in LD-Index values was shown for urban municipalities. This decrease concerned mainly 60 big cities (the so-called cities with poviat status). The decline occurred despite the relative balance of the PIT per capita value, but with a significant increase in the demographic burden indicator. During the study period, all changes in the status of the analyzed municipalities were excluded (the reference point was the starting status in 2014).

Noteworthy is the result of the spatial differentiation analysis of changes in the municipalities' development potential. For what did it turn out to be? Creating a local development policy based only on metropolitan growth poles (big cities) is ineffective. Transfer of the so-called tax productivity from cities (including metropolises) to their environment is a strong indication in favour of intermunicipal cooperation. The growth of the development potential of rural and rural-urban municipalities (as shown by the LG-Index trend) also indicates the municipal partnership value.

Obviously, those municipalities should work out their own model of cooperation in naturally diversified areas: urban and rural (Paszkowski et al., 2019). This applies to separate municipalities as well as functional areas. Development policy can be based on the successive identification of the functional areas' potential, as well as the creation of new ones. This process requires effective tools that could support intermunicipal cooperation. The proposed model is presented in Table 2.

Table 2. *The partnership paradigm evolution based on intermunicipal cooperation model (mesoeconomic perspective)*

BASIC CANONS OF COMPETITIVE REGIONAL COLLABORATION			
A. Integration (objectives and strategic dimension)		**B. Relationships** (operational dimension)	
I.	Partnership **Composition** (cooperation objectives)	VIII.	**Relationships** (public, external, open)
II.	Partnership's **Potential** (resources and innovation)		
III.	Functional Connections **Network**		
IV.	Development **Programming** (strategies)	IX.	**Communication Space** (dialogue, information)
V.	**Strategic Integration** (partnership and partners)		
VI.	**Product Integration** (public services)	X.	Mutual **Trust**
VII.	**Monitoring**, Evaluation and Effectiveness (value)		
TRUST partnership paradigm			

Source: Own elaboration based on Potkański et al., 2016, pp. 98-110, and the authors' research.

The best cooperation idea requires finding a compromise between a competitive and an integral model. Indicating a competitive model means agreeing that the effectiveness of cooperation is determined by classical measures of competitiveness.

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If the integral model is preferred, then the competitiveness of the municipality is determined by local performance indicators. The programming of the synthetic model of cooperation is the product of the descriptive analysis of the results of the diagnostic survey. The opinions of those municipalities and inter-municipal associations that performed the research project with Tomasz Potkański's team were taken into account.

The results of the questionnaire survey indicate that current and potential partners prefer the following standards of cooperation: mutual trust (X), clear, correct definition of partnership and partner group goals (I), and finally integration of a common "product" - that is values (VI). It was found that development programming requires an optimal selection of cooperation metrics. This includes ex post measures: development indicators for selected (relevant) functional areas, measurement of changes in these indicators, and evaluation of cooperation at each stage. In ex ante approach, development programming is based on the assessment of financing capacity (ability to implement investment projects in the future). An additional factor in favor of cooperation, based on the partnership paradigm but which does not change the overall trend, is economic uncertainty, also related to the pandemic implications.

5. Conclusions

Based on the conducted research and descriptive analysis, the following conclusions were formulated:

1. The important mesoeconomic factor of success of intermunicipal partnerships is a sustainable ability to financing local development.
2. The financial stability of the municipality is determined by the so-called operating surplus at the municipality's disposal. It is a measure of the "current" development potential in the area of infrastructure and services.
3. Verifying the changes of Local Development Index, this study partially confirmed the starting hypothesis. Component factors of the regional cooperation model increasingly determine local development, especially in areas that have a deficit of "resource" competitiveness factors.
4. The Local Development Index can provide a starting point for programming alternative developments in the functional areas.
5. The idea of homogeneous areas development: programming the growth of socio-economic cohesion at territorial meso-level (intermunicipal);
6. Idea for areas with natural spatial and settlement diversity: conscious maintenance of diversity (additional functionality, sustainable access to services).

The weakness of the traditional "competitive advantages" approach creates a new local development model, based on:

- the ability to create and plan of the functional area development;
- integration and co-operation of public and private services providing;
- capacity for partnership, i.e. stable, multidirectional intermunicipal relations.

This is one way of creating the territorial capital. It can determine competitive capacity to a greater extent than resource efficiency and "classical" competitive potential. The mesoeconomic model of development, which derives from the key role of intermunicipal cooperation, may be based on the following pillars:

- source, space and potential of partnership - in a static system,
- relations and development of partnership - in a dynamic system.

Let's address the question: is this a high-risk approach? Not necessarily. The result, however, is redefinition of the competitiveness concept through partnerships in the territorial dimension.

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