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Local Security in the Idea of Sustainable Development

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Abstract:

Purpose: The aim of the research is to analyse the relationship between the level and sense of security of residents and local sustainable development.

Design/Methodology/Approach: The analysis of local security in the context of sustainable development is based on critical analysis of literature and statistical data. In addition, the results of research on the evaluation of the basic elements of the local security system, carried out on a statistically significant sample (4,400 people) of residents of local communities in the Kujawsko-Pomorskie Voivodeship. Additionally, taxonomic analyses were carried out, in which the assessments of the level of security by the communities of the powiats of the above voivodeship were compared. In the further part of the study, a review was made of the correlation of taxonomic measures of local security level with the most important indicators of sustainable development. In the final phase of the study, the ranking of powiats of Kujawsko-Pomorskie voivodeship was constructed according to the integrated measure of development.

Findings: Local communities, in conditions of sustainable development, aim at the security (social order) of individuals associated in the local community. The special role of local government in ensuring the principle of sustainable development is proved by the systemic solutions adopted in Poland and legal regulations specifying the competences and tasks of local government units of various levels.

Practical Implications: The results are of significant importance to local authorities. They allow for a better design of local development management systems, taking into account the assessment of individual elements of the security system.

Originality/Value: The research carried out has primarily proven the usefulness of multidimensional analysis and linear ordering methods for the assessment of the examined issues. Sustainability issues, which by nature are multidimensional problems, should not be assessed through the prism of single indicators or stratetical documents.

Keywords: Local security, sustainability, social governance, taxonomic analysis.

JEL Code: Q01, O18, Z13.

Paper type: Research article.

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1. Introduction

The analysis of local security in the context of sustainable development is based on critical analysis of literature and statistical data. For the purposes of the conducted research, it has been assumed that sustainable local communities are a kind of link between the postulates of the human security concept (Gierszewski and Pieczywok, 2019) and the classically understood category of local community (Gierszewski, Drabik and Pieczywok, 2020). Local communities, in conditions of sustainable development, aim at the security (social order) of individuals associated in the local community. The article presents the relationship between the level and sense of security and sustainable development in a local context. Implementation of this concept in Poland is carried out by the local government. The special role of local self-government in ensuring the principle of sustainable development is proved by the systemic solutions adopted in Poland and legal regulations specifying the competences and tasks of local self-government units of various levels. The concept of security is closely related to development (social, economic and environmental). The following research questions have been asked in this study:

Q1: Do the powiats of Kujawsko-Pomorskie voivodship equally strive to implement the assumptions of the sustainable development strategy?

Q2: Do the level and sense of security of the inhabitants of the examined territorial units depend on the degree of implementation of sustainable development objectives?

The research process required the following hypotheses:

H1: The surveyed powiats show significant differences in taxonomic distances between synthetic sustainability indicators.

H2: The level and sense of security of the inhabitants of the powiats of Kujawsko-Pomorskie voivodship are strongly correlated with their level of sustainable development.

The purpose of the work is to present the results of research on the evaluation of powiats in Kujawsko-Pomorskie voivodship (territorial unit in Poland) in terms of the degree of implementation of sustainable development. In addition, a detailed objective was realized, consisting in creating a ranking of powiats of Kujawsko-Pomorskie voivodship in terms of the degree of realization of sustainable development objectives. This ranking was created using linear ordering methods.

2. Theoretical Background

Local security is an ambiguous and differently defined concept. It is a concept that refers not only to a certain type of social order, but also to the way of thinking. It is often presented as an opposition to globalisation. The question about security is a

question about its definition (which?). “Local security” means assignment to a specific layer:

- the natural environment, consisting of the earth's surface, flora and fauna, access to the sea or lack thereof, climate;
- cultural, which are the products of material and spiritual culture;
- social meaning, the arrangement of interpersonal relations shaped in the course of creation of cultural goods by man.

The term (place) used for the concept of security will indicate the local nature of human life in the aforementioned layer. One of the orientations in defining the local environment is the factor that constitutes a relatively homogenous whole, which is the territory together with local resources, i.e. nature and social capital. We therefore assume that "local environment" means all social institutions located in a specific territory, where individuals are connected by a bond of common relationship to the place where they live, satisfy their basic living needs.

We can often meet the terms of local environment such as "small homeland" or "human life space". These names indicate the ongoing process of social transformations connected with the processes of globalisation and democratisation of social life. They extend the set of elements and features of the local environment. Globalization, as aptly put by Paweł Starosta, means "a historical process ending the industrial era of social organization, characterized by a transnational diffusion of financial capital and cultural patterns, based on the development of the latest technologies" (Starosta, 2001). Of course, the process of globalisation can be approached with scepticism, especially in the context of cultural changes with a strong impact on the local environment. After all, they constitute a kind of human activity, deciding on the specificity of the local environment and represent a considerable challenge for it, which may turn into an opportunity or threat.

The evolution of the democratisation of societies, on the other hand, is heading towards various forms of human civic activity. It is the reason why more and more attention is paid to the social environment in which people function locally.

Most definitions are based on the conviction that a locality best meets basic human biological and social needs. “Polis”, as a kind of a prototype of local communities, had a complex internal structure, which consisted of numerous human socialising environments (i.e. families, associations, etc.). It is thanks to them that a person acquires specific cultural competences related to skills, knowledge and norms and values (Gierszewski, Drabik and Pieczywok, 2020).

After the end of the Cold War it turned out that wars are not the main threat to human security, but poverty and hunger, pandemics, demographic problems and climate change. The question then arises whether the world order should be treated only from the perspective of the security of the state or also of the individual? An

attempt to answer this question has led to the observation that there are common security problems that challenge many countries. The concept of human security is an extension of Barry Buzan's (Buzan, 1991) five core areas of security (military, political, economic, ecological and social) by adding further ones, i.e. food, personal and health security.

Within the concept of human security, two main principles have been developed to anticipate threats to human security. The broader principle is the aforementioned "freedom from lack of necessities" (freedom from want), i.e. freedom and protection from such chronic problems as hunger, disease or poverty that can be associated with sustainable development (Gierszewski, 2017).

The second principle is "freedom from fear", which refers to freedom and protection from sudden and painful accidents in everyday life, which are related to physical safety (security), which also has a psychological aspect.

The third principle can be derived from human rights and freedoms. Human rights are universal moral rights of a fundamental nature, belonging to man. The concept of human rights is based on three theses: firstly, that every power is limited; secondly, that every individual has a sphere of autonomy to which no power has access; thirdly, that every individual can claim the protection of his rights from the State. Freedoms relate to one's own unhindered human action, while rights include claims for certain behaviour by the State and impose obligations on them. Thus, procedural rights oblige the state to establish a system of institutions and procedures and to use them in its relations with citizens. A slightly different kind are social rights (rights to benefits). Such a nature is, for example, the right to: education, health protection, minimum social security and others - so-called social and cultural rights. Social rights guarantee an individual a minimum of economic security, without which he would not be able to assert his rights in a dignified manner (Gierszewski and Pieczywok, 2019).

The idea of sustainable development can be equated with the desired state that not only the social system should achieve. Sustainable development is one that assumes equal treatment of social, economic and environmental reasons. It is a process with variable specific objectives, which requires individuals, organisations and systems to make continuous efforts to achieve this state, i.e. sustainable development. The Brundtland Commission believed that this is a way of meeting the needs of the present generation that does not limit the ability of future generations to meet them (WCED, 1987). A key feature of the report was the introduction in the first part of the report of a new concept of sustainable development, which was defined as: *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*. It therefore means not only short-term justice, but also a much deeper concept of intergenerational justice and the ability to think ahead without generational egoism.

Sustainable development is linked to a state of stability, sustainability and continuity of development or, more broadly, of the socio-economic system.

Research on diversification is mainly focused on an approach related to broadly defined social and economic development linked to the natural environment, which aims at creating a desirable and responsible living environment in the context of social justice, living conditions, living environment and (social) welfare. The exposition of social objectives seems justified, especially if we assume that their full implementation will not take place without taking into account the economic and natural objectives, because they are the ones that determine to the greatest extent the so-called living environment or quality of life.

In Poland, the concept of sustainable development has been recognised as a constitutional principle and is included in Article 5 of the Constitution of the Republic of Poland as one of the political principles. Sustainable development is the basic objective of the development policy conducted at the national, regional and local level on the basis of relevant strategic documents. The identification of the objectives and priorities relating to the sustainable development challenges enshrined in the national strategic documents was the basis for developing the national list of sustainable development indicators. To this end, the indicators monitoring sustainable development in selected European Union Member States, international organisations (European Environment Agency, World Bank, Organisation for Economic Cooperation and Development, United Nations) were reviewed.

Common European Sustainable Development Indicators have been developed under the aegis of the European Commission, the European Environment Agency and the Expert Group (European Commission's Urban Environment). In the years 2001-2003, 11 selected common core indicators and 20 supporting indicators were tested in 148 local government units from 23 countries (including Poland). The aim of the project was to develop, with the participation (and consultation) of local authorities and communities, a common set of sustainable development indicators that would be easy to construct.

For all indicators, a methodology has been developed to calculate its value, taking into account the definition of the indicator, data source, unit of measurement, frequency of measurement, form of presentation and reporting. Each of the main measures has been assigned to one of 11 fields:

1. the satisfaction of citizens,
2. the local impact on global climate change,
3. local transport and movement of citizens,
4. availability of local open areas and services,
5. air quality,
6. the children's travels to and from school,

7. the management of local authorities and local entrepreneurs taking into account sustainable development issues,
8. the noise pollution,
9. sustainable use of land,
10. ecological products,
11. "the ecological footprint".

The authors of the set of indicators did not divide them by order (environmental, social and economic), but identified six basic problems they address:

- universal access to basic services,
- participation of all groups of the local community in local planning and decision-making,
- local satisfaction of all needs that can be satisfied at the local level and satisfaction of the remaining needs in a sustainable manner,
- adapting the possibilities and needs of the labour market and economic development to the possibilities of the local environment,
- adopting an ecosystem approach, minimising the use of natural resources and space, minimising the production of waste and pollution, protecting biodiversity, protection, preservation and revalorisation of historical, cultural and artistic values and goods (Borys and Rogala, 2008).

The idea of sustainable development is conceived as a global change in mankind's development strategy, and even as a radical transformation of the previously prevailing socio-political-economic model into a different, fairer one, giving hope for the survival and further development of mankind, influencing social security. This is an attempt to conceptualize the so-called first global revolution (Gierszewski, Pieczywok and Piwowarski, 2020).

3. Material and Methods

According to the studies cited above, local security in its basic interpretation can be identified with the so-called social order. Incidentally, social governance is at the same time (alongside economic, environmental and institutional-political governance) one of four areas in which indicators are grouped that reflect the achievement of sustainable development strategy goals by administrative units. According to the methodology of the Central Statistical Office (in line with the international methodology), the area of social governance consists of eleven groups of indicators, such as: demographic change, public health, poverty and living conditions, education, access to the labour market, consumption patterns, adequacy of income in old age, health determinants, crime, road accidents. They define a total of forty-one different types of measures that help to track the progress of a territorial unit (state or part of it) towards sustainable development (Table 1).

Table 1. Sustainable development indicators in the area of social governance

Area	Indicator	Indicator filter	Dimension
Demographic change	Natural growth per 1000 population	Natural growth per 1000 population	Overall
	Balance of migration for permanent residence of persons of working age per 10,000 population of working age	Balance of migration for permanent residence of persons of working age per 10,000 population of working age	Overall
	Ageing dependency ratios	Ageing dependency ratios	Population in post-working age per 100 people in working age
		Ageing dependency ratios	Population at non-working age per 100 people of working age
Ageing dependency ratios		population in post-productive age per 100 people in pre-productive age	
Public health	Infant deaths per 1000 live births	Infant deaths per 1000 live births	Overall
	Share of deaths by selected causes in total number of deaths	Share of deaths by selected causes in total number of deaths	cardiovascular diseases
		Share of deaths by selected causes in total number of deaths	Cancer
		Share of deaths by selected causes in total number of deaths	respiratory diseases
Deaths of people up to 65 years old per 1,000 population at that age	Deaths of people up to 65 years old per 1,000 population at that age	Overall	
Poverty and living conditions	Share of persons in households benefiting from social assistance in the total population	Share of persons in households benefiting from social assistance in the total population	Overall
	Average gross monthly remuneration (business entities over 9 persons)	Average gross monthly remuneration (business entities over 9 persons)	Overall
	Average usable floor area of a flat per 1 person	Average usable floor area of a flat per 1 person	Overall
Education	Share of children in pre-school education in the total number of children aged 3-5 years	Share of children in pre-school education in the total number of children aged 3-5 years	Total
		Share of children in pre-school education in the total number of children aged 3-5 years	In the countryside
	Indicators of quality of education and level of students' knowledge	Indicators of quality of education and level of students' knowledge	Passability of secondary school leaving examinations in vocational secondary schools
		Indicators of quality of education and level of students' knowledge	Passing the baccalaureate exams in general secondary schools
Access to the labour market	Share of the long-term unemployed (more than 1 year) in total registered unemployed	Share of the long-term unemployed (more than 1 year) in total registered unemployed	Overall
	Number of unemployed registered in relation to the number of people in productive age (as at 31 December)	Number of unemployed registered in relation to the number of people in productive age (as at 31 December)	unemployed - women
		Number of unemployed registered in relation to the number of people in productive age (as at 31 December)	unemployed persons with higher education

	Job offers for disabled people per 1000 unemployed disabled people	Job offers for disabled people per 1000 unemployed disabled people	Overall
	Share of graduates (not yet employed) in total unemployed	Share of graduates (not yet employed) in total unemployed	Overall
		Share of graduates (not yet employed) in total unemployed	alumni - women
	Registered unemployment rate	Registered unemployment rate	Overall
Consumption patterns	Number of passenger cars per 1000 population	Number of passenger cars per 1000 population	Overall
Consumption patterns	Household consumption per year per capita	Household consumption per year per capita	electricity
		Household consumption per year per capita	Gas
		Household consumption per year per capita	Water
Adequacy of income in old age	Share of the long-term registered unemployed (more than 1 year) aged 55-64 in total unemployed aged 55-64	Share of the long-term registered unemployed (more than 1 year) aged 55-64 in total unemployed aged 55-64	Overall
	Share of people at post-working age in households benefiting from community social assistance in the total number of people at this age	Share of people at post-working age in households benefiting from community social assistance in the total number of people at this age	Overall
Health determinants	Injured in accidents at work per 1000 employees	Injured in accidents at work per 1000 employees	Overall
	Outpatient clinics per 10,000 inhabitants	Outpatient clinics per 10,000 inhabitants	Overall
Crime	Detection rate of offenders identified by the Police	Detection rate of offenders identified by the Police	Overall
		Offences detected by the Police per 1000 inhabitants in total	Overall
	Offences detected by the Police per 1000 inhabitants in total	Offences detected by the Police per 1000 inhabitants in total	criminal
		Offences detected by the Police per 1000 inhabitants in total	Business
		Offences detected by the Police per 1000 inhabitants in total	road
		Offences detected by the Police per 1000 inhabitants in total	against life and health
Road accidents	Road accident victims per 100,000 registered vehicles	Road accident victims per 100,000 registered vehicles	injured
		Road accident victims per 100,000 registered vehicles	fatal accidents

Source: Central Statistical Office, Sustainable development indicators, indicators, wskaznikizrp.stat.gov.pl.

In this study, in the first phase of the analysis, a taxonomic assessment of the local sustainable development of the powiats of Kujawsko-Pomorskie voivodship in the

area of social order was made. For this purpose, linear ordering methods were used to assess the level of object diversification using a closed set of statistical features (Grabiński, Wydymus and Zielaś, 1989). The adopted method has been described in detail in other studies by the authors, so there is no need to characterise it in detail (Siemiątkowski, 2015; Siemiątkowski, 2017; Siemiątkowski and Jankowska, 2020; Siemiątkowski and Tomaszewski, 2020). It is only worth noting that the characteristics were standardized based on model methods, assuming the existence of a model object, in relation to which taxonomic distances of the studied objects were determined. The synthetic measure was calculated according to Hellwig's method according to the formula:

$$d_i = 1 - \frac{d_{i0}}{d_0}$$

where:

d_{i0} - Euclidean distance of the object x_i from the reference object x_0 ,

d_0 - critical distance of a given unit from the standard (Ostasiewicz, 1998, p. 120).

In order to carry out a taxonomic study of the progress in the implementation of the sustainable development assumptions of the powiats of Kujawsko-Pomorskie voivodship in the area of social order, 41 characteristics of objects (powiats) were distinguished:

X1t - natural growth per 1000 population,

X2t - balance of migration for permanent residence of people of working age per 10 thousand population of working age,

X3t - population in post-working age per 100 people in working age,

X4t - number of people in non-working age per 100 people in working age,

X5t - population in post-working age per 100 people in pre-working age,

X6t - infant deaths per 1000 live births,

X7t - share of cardiovascular death in the total number of deaths,

X8t - share of cancer deaths in the total number of deaths,

X9t - share of deaths due to respiratory diseases in the total number of deaths,

X10t - deaths of people up to 65 years of age per 1000 population at that age,

X11t - share of persons in households benefiting from social assistance in total population,

X12t - average gross monthly remuneration (business entities over 9 persons),

X13t - average usable area of a flat per 1 person,

X14t - share of children in pre-school education in the total number of children aged 3-5 years,

X15t - share of children in pre-school education in the total number of children aged 3-5 years in rural areas,

X16t - passability of secondary school exams in vocational secondary schools,

X17t - passing the baccalaureate exams in general secondary schools,

- X18t - share of the long-term unemployed (more than 1 year) in the total number of registered unemployed,
- X19t - number of unemployed registered in relation to the number of people in productive age (as at 31 December) - unemployed - women,
- X20t - number of unemployed registered in relation to the number of people in productive age (as at 31 December), unemployed with higher education,
- X21t - job offers for disabled people per 1000 unemployed disabled people,
- X22t - share of graduates (so far not working) in total unemployed,
- X23t - share of graduates (not yet employed) in total unemployed, female graduates,
- X24t - registered unemployment rate,
- X25t - number of passenger cars per 1000 population,
- X26t - household utilities consumption per year per capita - electricity,
- X27t - household utilities consumption in a year per capita - gas,
- X28t - household utilities consumption per year per capita - water,
- X29t - share of the long-term registered unemployed (more than 1 year) aged 55-64 in total unemployed aged 55-64,
- X30t - share of persons in post-working age in households benefiting from community social assistance in the total number of persons in this age,
- X31t - injured in accidents at work per 1000 employees,
- X32t - clinics per 10 thousand inhabitants,
- X33t - detection rate of offenders identified by the Police,
- X34t - crimes found by the Police per 1000 inhabitants in total,
- X35t - criminal offences found by the Police per 1000 inhabitants,
- X36t - economic crimes established by the Police per 1000 inhabitants,
- X37t - road traffic offences found by the Police per 1000 inhabitants,
- X38t - crimes against life and health found by the Police per 1000 inhabitants in total,
- X39t - crimes against property found by the Police per 1000 inhabitants,
- X40t - victims of road accidents per 100 thousand registered vehicles - injured,
- X41t - road accident victims per 100 thousand registered vehicles - fatal accidents.

In the process of selection of features for the construction of the synthetic security indicator in powiats, a careful selection had to be made. Due to the methodological necessity for the traits to meet the requirement of statistical data completeness and uniform methodology of collecting empirical material, some of the indicators indicated above could not be qualified for further stages of construction of the synthetic measure. The main problem was the incompleteness of statistical data, their heterogeneity for different powiats, complete lack of data and lack of information on the ways of collecting statistics by authorized entities. The characteristics qualified for the further procedure did not show an excessive degree of correlation with each other, therefore they were all included in the synthetic index. Among the characteristics meeting the above requirements, those with numbers were considered as stimulants: X1t, X12t, X13t, X14t, X16t, X17t, X25t and X32t were considered as stimulants, X3t, X4t, X5t, X7t, X8t, X9t, X10t, X11t, X18t, X19t, X20t, X22t, X23t, X24t, X26t, X28t, X29t, X30t, X31t, X9t. The remaining

features did not meet the rigorous methodological requirements of synthetic taxonomy meters.

4. Research Results

The ranking presented in Figure 1 shows significant taxonomic distances between synthetic measures of sustainable development in the area of social order for individual powiats. The difference between the best and the weakest powiat in the value of the synthetic measure is as much as 0.592. This means serious differences in achieving the objectives of the sustainable development strategy in the area of social order between individual powiats.

The second proposal concerns the level of sustainable development in the area of social governance in the powiats of Kujawsko-Pomorskie voivodeship. The maximum value of the synthetic index was less than 0.7. This means that several of the examined powiats were in the third quartile of the index value distribution. This can be interpreted as a high level of sustainable development in the area of social order. The best results in the presented ranking were achieved by the powiats of Toruń and Bydgoszcz. These are strongly urbanised areas, which allocate significant funds to many areas of social order. The Brodnica powiat, which in principle is not distinguished by high values of particular indicators, also achieved an exceptionally high position. However, taking into account all the features, it took a high, fourth place. This shows significant progress in achieving the objectives of the sustainable development strategy in the area of social governance.

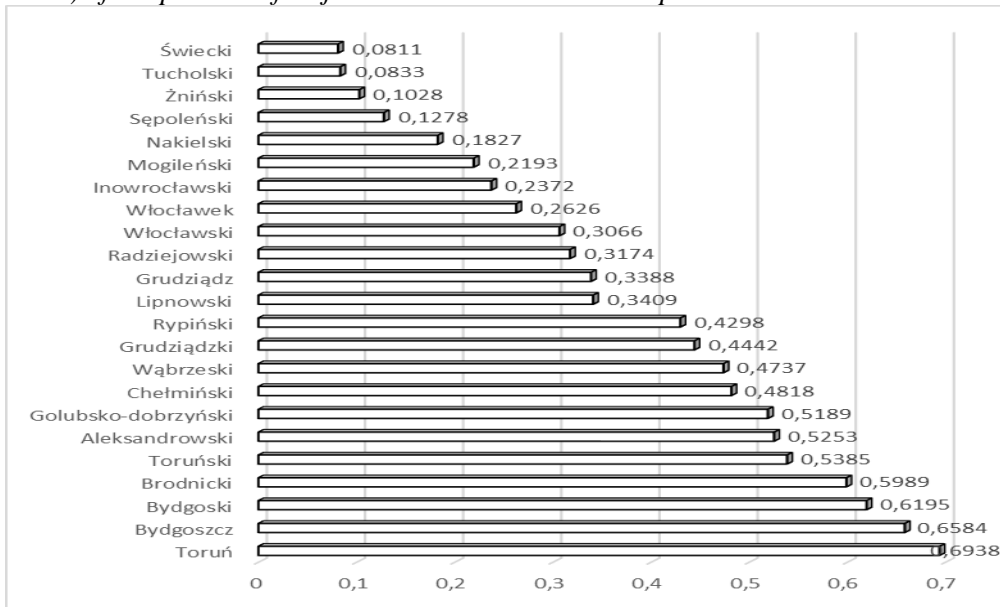
The final part of the ranking includes peripheral powiats: świecki, żniński, tucholski and sepoleński. It is worth noting that the ranking included a significant number of features, so it is generally reliable. Indication of the reason for such a ranking for the weakest powiats requires further, in-depth research. Initially, it can be pointed out that these are poorly urbanised areas with low natural growth, additionally some of them have a relatively high unemployment rate.

In the further part of the research, the analysis of clusters was made. It allows to divide the examined objects into groups, if they are described by more than one feature. The use of the synthetic measure allows not only to organize the powiats, but also to distinguish groups with a similar level of sustainable development. In this case, four groups of powiats were listed based on the Haddon matrix method. The group with a very high level of sustainable development in the area of social order is characterised by the height of the synthetic measure greater/equal to 0.75. As the data in Table 2 show, not a single county was included in this group. Several local government units have entered the group with a high synthetic measure of sustainability (between 0.5 and 0.75). This was exactly 7 counties (Table 2).

Most of the examined powiats of Kujawsko-Pomorskie voivodship found themselves in groups with low (9) - height of synthetic measure between 0.5 and

0.25 - or very low (7) - height of synthetic measure up to 0.25 - level of sustainable development in the area of social order (see Chart 2). The analysis of changes in the taxonomic measure of development over time will allow for a more accurate observation of the progress of powiats in the implementation of the local sustainable development strategy. It will contain additional information on the possible transition of individual units to a group with a higher or lower level of sustainable development.

Figure 1. Taxonomic measure of sustainable local development (area of social order) of the powiats of Kujawsko-Pomorskie voivodship



Source: Own study.

Table 2. Comparison of the level of sustainable development in the area of social governance in the powiats(counties) of Kujawsko-Pomorskie voivodship according to the synthetic measure

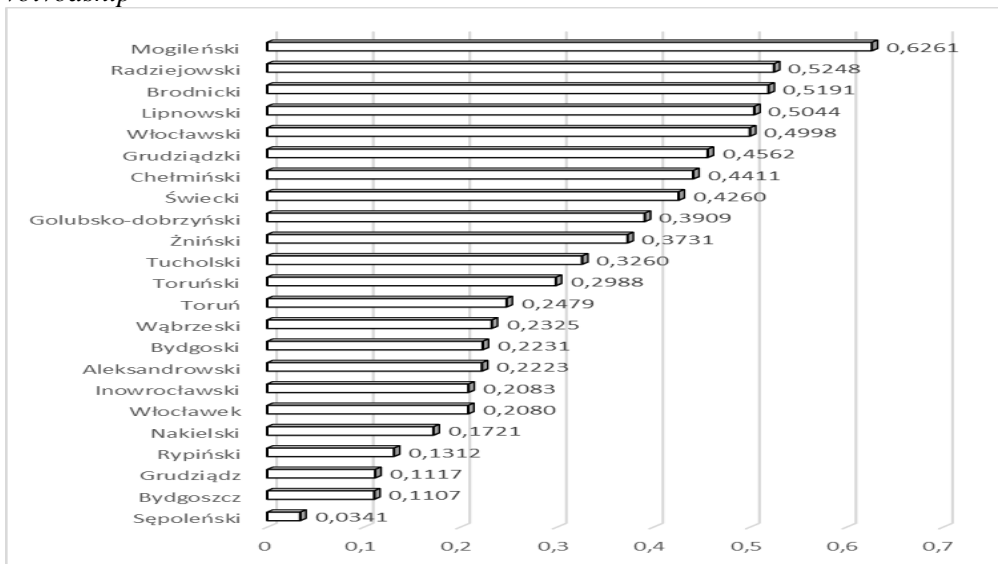
Level of sustainability in the area of social governance by TMR*:			
Very high TMR >=0.75	High 0.5 <= TMR <0.75	Low 0.5 > TMR >= 0.25	Very low TMR < 0,25
	Toruń Bydgoszcz Bydgoski County Brodnicki County Toruński County Aleksandrowski County Golubsko-Dobrzyński County	Chełmiński Country Wąbrzeski County Grudziądzki County Rypiński County Lipnowski Country Grudziądz Radziejowski County Włocławek County Włocławek	Inowrocławski County Mogileński County Nakielski County Sępoleński County Zniński County Tucholski County Świecki Country

Note: * TMR - taxonomic measure of development.

Source: Own study.

The results of empirical research carried out in 2018 on a relatively large (about 4.4 thousand) group of respondents, residents of the Kujawsko-Pomorskie Voivodship (Siemiątkowski and Tomaszewski, 2017; Siemiątkowski, Tomaszewski, Jurgilewicz and Poplavska, 2019) were used in this study. The research concerned the evaluation of the sense of security in the local environment, individual elements of the security system and the prospects for changes in the sense of security in the place of residence. The assessment was treated as a result of the state and local governments' policy on citizen security. The results of the above research have already been published (Siemiątkowski and Tomaszewski, 2018), so there is no need to analyse them in detail. A general view of the final ranking of the counties in terms of the height of the synthetic measure is sufficient (Figure 2).

Figure 2. Taxonomic measure of local security of powiats in Kujawsko-Pomorskie voivodship



Source: Siemiątkowski P., Tomaszewski P. (2020). *Local dimension of security policy, Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika w Toruniu (in print).*

It is worth noting that the final ranking of powiats in Kujawsko-Pomorskie voivodship according to the synthetic indicator of local security level is definitely different than the ranking presented in figure no. 1. Probably the reason lies in the fact that in the process of construction of the indicator presented in figure no. 2, apart from objective indicators, subjective opinions of respondents acquired in the course of the aforementioned surveys of inhabitants of particular powiats were taken into account.

Table 3. Pearson correlation table between different versions of synthetic indicators

	A	B	C	D	E	F
A	1					
B	-0,08366	1				
C	-0,07261	0,994859	1			
D	-0,05338	0,964575	0,961584	1		
E	-0,25244	0,504772	0,423395	0,466612	1	
F	0,13355	-0,15845	-0,15507	-0,03209	-0,09048	1

Source: Own study.

where:

A - taxonomic measure of local sustainable development in the area of social governance

B - taxonomic local security level meter (version 1)

C - taxonomic local security level meter (version 2)

D - taxonomic local security level meter (version 3)

E - evaluation of the level of feeling of safety by residents of powiats of Kujawsko-Pomorskie voivodship

F - taxonomic local security level meter (version 4).

Table 3 shows Pearson correlation coefficients between different versions of synthetic measures. Most of these coefficients (from B to F) have been described in detail with the earlier publication of the results of research on the residents of Kujawsko-Pomorskie voivodship (Siemiątkowski and Tomaszewski, 2020). It is worth to briefly recall their most important features. Synthetic measure marked in Table 3 as A is the indicator presented in this study in Figure no. 1. The letter B denotes a synthetic measure of local security level built exclusively on the basis of results of local security research among the residents of powiats, this measure contains all the assessments of respondents (Siemiątkowski and Tomaszewski, 2020). Letter C denotes another version of the synthetic measure, based on the results of the quoted research, but without assessments of the sense of security and perspectives of changes in the sense of security. The synthetic measure marked with the letter D is the most comprehensive, as it contains both subjective assessments of the security level and objective indicators. The letter E is marked with a subjective evaluation of the sense of security by the inhabitants of the powiats of Kujawsko-Pomorskie voivodship. Finally, the last version of the indicator, F, is a synthetic measure of the local security level built exclusively with objective statistical indicators.

The analysis of the data contained in Table 3 clearly shows that there is no significant statistical correlation between the level of sustainable development in the area of social order with subjective evaluation of the level of feeling of security in the place of residence of the inhabitants of the powiats of Kujawsko-Pomorskie voivodship. Moreover, the taxonomic measure of synthetic local development in the

area of social governance is not statistically significantly correlated with any other taxonomic measure presented in Table 3.

5. Conclusions

The research carried out proved the usefulness of multidimensional analysis and linear ordering methods for the assessment of the examined issues. Sustainability issues, which by nature are multidimensional problems, should not be assessed through the prism of single indicators or stratetical documents. It is important to make a multidimensional assessment, based on synthetic indicators, constructed on the basis of numerous, carefully selected features of the examined objects.

The results of the research confirmed the hypothesis no. 1 set at the beginning of the study. The surveyed powiats do not show similar commitment to the idea of sustainable local development. The taxonomic distances between the synthetic measures for individual powiats are considerable. The analysis of clusters allowed to assign the examined objects to three different groups.

The analysis of the research carried out in this study and its confrontation with the results of the empirical research previously carried out by the authors allowed to falsify hypothesis no. 2. It was proved that there is no significant statistical correlation between the level of sustainable local development in the powiats of Kujawsko-Pomorskie voivodeship and the subjective sense of security of the inhabitants.

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