The Assessment of the Local Security Policy Efficiency

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Abstract:

Purpose: The purpose of this article is to assess the local security efficiency across the districts of the Kuyavian-Pomeranian province in northern Poland. The authors are looking for an answer to the following questions: does the local security policy live up to its expectations, i.e., do citizens feel safe at their place of their residence, and how do they assess the individual components of the local security system? How do residents perceive local security depending on their place of residence across the Kuyavian-Pomeranian province?

Design/Methodology/Approach: In order to achieve the goal of the research, the authors conducted a survey employing a sample of 4500 residents of the Kuyavian-Pomeranian province. Based on the survey findings and using linear ordering methods, a ranking of districts of the Kuyavian-Pomeranian province was compiled.

Findings: There are significant discrepancies between the subjective assessment of local security efficiency by the residents and its objective evaluation conducted with indicators. Generally, the residents of the districts of the Kuyavian-Pomeranian province are much more content with the local security system than implied by traditional indicators.

Practical Implications: The findings of the research are of great significance to local authorities as they allow them to design the systems of local development management more effectively by taking account of the residents' opinions on the individual components of the security system.

Originality/Value: The research was conducted on a relatively extensive group of respondents. The presented findings proved the usefulness of the multidimensional analysis and linear ordering methods in the assessment of local security policy efficiency.

Keywords: Security policy, local policy, taxonomic analysis, synthetic measure.

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1. Introduction

To a large extent, the security of local communities depends on the security policies conducted by local governments. For the purposes of this article, it is assumed that local security policy is only effective when it leads to higher levels in the sense of security among the residents of a given area.

In Poland, local governments perform a great number of tasks with respect to security. The Polish self-government system is organized into three levels: communes and municipalities, districts, and provinces (made up of a dozen or several dozen districts). Although all the levels of self-government are independent they do cooperate with each other. The security tasks and responsibilities of communes/municipalities and districts include:

- taking fire precautions;
- countering the effects of natural disasters;
- crisis management;
- keeping public order and safeguarding security in the public sphere (road safety, public facilities safety, etc.);
- protection of cultural heritage;
- devising strategies/programmes and performing activities towards preventing crime and safeguarding public order and security;
- environmental protection.

Additionally, self-governments pursue policies that are regarded as particularly vital by local residents in terms of their sense of security. These are activities involving the local economy, labour market, transport, leisure and sports facilities, fight against crime, etc. As regards the development of local communities, the authors find it particularly important for local governments to pursue the policy of cooperation between the local authorities and residents/non-governmental institutions, and build strong local bonds and a sense of responsibility for one's place of residence. There is no doubt that local policies should be impacted and adjusted by the assessment of these policies made by the residents. This assessment is often of subjective nature, biased by the experience of particular individuals, their needs and worldviews. Nevertheless, the assessment of local policies by district residents, i.e., deciding whether the policies fulfil their objectives and needs, is vital in building the strategies of local governments in the area of security.

The research was conducted in all of the districts of the Kuyavian-Pomeranian province. The area of the province is 17,971.34 km2. The province consists of 19 land districts and four cities with district rights, i.e. Bydgoszcz, Grudziądz, Toruń and Włocławek. The seat of the province head is in Bydgoszcz, and the seat of the province government is in Toruń. In the Kuyavian-Pomeranian province, there are 3580 villages and 52 towns. In order to achieve the purpose of the research, a survey

was conducted employing about 4,500 residents of all the 23 districts of the Kuyavian-Pomeranian province.

For the purposes of this article the following research questions were asked:

Q1: How do the districts of the Kuyavian-Pomeranian province differ from each other in terms of local security policy efficiency?
Q2: Are there any differences between the subjective assessment of local security level and its objective assessment conducted with indicators?

The research process required formulating the following hypotheses:

H1: The efficiency of local security policies differs significantly across the districts of the Kuyavian-Pomeranian province.
H2: There are significant discrepancies between the subjective assessment of local security efficiency by the residents and the objective assessment conducted with indicators.

The aim of this paper is to provide the assessment of local security policies by the residents of the districts of the Kuyavian-Pomeranian province. We attempted to find answers to the following questions: is the local security policy relevant, i.e., do residents have a sense of security at their place of residence, and how do they assess the individual components of the local security system? The article offers a summary of extensive empirical research and presents its ultimate and core findings. Allowing for security policy to be conducted differently across different districts, the assessment of the efficiency of local government units (at district level) was conducted with the application of linear ordering methods.

2. Theoretical Background

From the viewpoint of the assessment of local security policy efficiency, the research into victimisation is of particular interest (Foster *et al.,* 2010; Guzik, 2000). According to the authors, research into the sense of security is essential in introducing necessary changes to improve the policies of local governments in that respect. However, it should be stressed that it is mostly of a subjective character and serves only as implementation to coordinate the activities of relevant authorities and institutions, and successful cooperation between local communities and local authorities (Delbosc and Currie, 2012). Less extensive research, mainly into specific threats to the public order, has been conducted at various places, e.g., Wellington City, (Coggan and Gabites, 2007), Auburn (Shepherdson, 2014). Another subject of research is also the relationship between the social capital and the suburbia architecture of the city of Perth (Wood *et al.,* 2008). Research has also been conducted into the fear of crime in the rural and urban areas of Turkey (Karakus *et al.,* 2010), and the impact of the quality of life on the sense of security (Baker and Palmer, 2006).

Authorities apply versatile solutions to provide local security, ranging from the construction of safe space, mobilisation of the society, to performing activities in the interest of youth. All of this experience is described in a synthetic way by the Bureau Justice of Assistance (BJA, 2001). Furthermore, a lot of research is conducted into the successful involvement of the society in fighting crime through pursuing relevant neighbourhood policies.

The popular disorder theory discovers a lot of facts about the sense of security (Kelling and Wilson, 1982). The theory, also known as the theory of broken windows, provides that the sense of security depends on, among other things, the condition of infrastructure, buildings or dwelling facilities. If the dwellers witness the so called disorders (social disorders, e.g., alcohol abuse, or physical disorders, e.g. property damage, uncared-for property, etc.), they develop the sense of inner anxiety (Markowitz *et al.,* 2001; Ross *et al.,* 2001; Sampson and Raudenbush, 1999). In the context of this research, it is important to note that a small disorder in the everyday life of the community (e.g., the sight of drunks in public places) can evoke anxiety, even if not accompanied by physical assaults or attacks (Ross and Jang, 2000). Local security is a function of the social system built by community members. It is a variable which must be measured by means of surveys. The level of disorders can serve as an easily accessible indicator of local security. It occurs in the form of, for example, poor property maintenance – scattered litter, uncared-for plants, damaged windows and doors, etc., (O'Brien and Wilson, 2011).

Similar research was conducted in Poland with respect to the cities of Poznań (Bogacka and Siniecka, 2016), Kraków (MRW, 2017), or smaller Jarosław (Długosz, 2014; Solecki and Sowiński, 2013). Extensive research into the sense of security in the Kuyavian-Pomeranian province was also conducted by the authors of this article (Siemiątkowski and Tomaszewski, 2018). As regards publications on the security issues of local communities it is worth mentioning the particularly valuable ones, including those by Serafin and Parszowski (2014), Urban (2012), Fehler (2009), Leszczyński *et al.* (2013), Filaber (2016), and also Stawicka (2015), who researched the relations and cooperation of the police authorities with local governments and non-governmental organization in the region of Silesia, southern Poland.

3. Material and Methods

With a view to building a ranking of the districts of the Kuyavian-Pomeranian province with respect to local security levels (and, consequently, efficient local security policies), this research applies the methods of linear ordering (Grabiński *et al.,* 1989; Kolenda, 2006; Nowak, 1990; Zielaś, 1991). This type of taxonomic analysis is a set of methods for evaluating the levels of objects differentiation by means of a closed set of statistical features.

The adopted method has been well described by other authors therefore, there is no need to provide a detailed description (Gierszewski *et al.,* 2020; Siemiątkowski, 2015; 2017; Siemiątkowski and Jankowska, 2020). However, it is worth noting that the standardisation of features based on reference methods was performed, assuming the existence of a model object, against which taxonomic gaps of the objects under research were set. The synthetic measure, according to the Hellwig method, is calculated from the following equation:

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

where:
d_{i0} – the Euclidean distance of object x_i from reference object x_0,
d_0 – the critical gap of a given unit from the reference value (Ostasiewicz, 1998, p. 120).

In order to perform taxonomic research into the efficiency of local security policies in the districts of the Kuyavian-Pomeranian province, 34 object (district) features were distinguished, including:

X_{1t} – the sense of security at the place of residence,
X_{2t} – the assessment of the performance of the fire service,
X_{3t} – the assessment of the performance of the police forces,
X_{4t} – the assessment of the performance of the heads of communes, townships, cities and provinces, respectively,
X_{5t} – the assessment of the sense of security at schools,
X_{6t} – the assessment of the performance of the healthcare system,
X_{7t} – the assessment of the level of one's connection to the local community,
X_{8t} – the assessment of the quality of cultural initiatives in the local community,
X_{9t} – the assessment of the level of social participation,
X_{10t} – the assessment of the performance of local authorities,
X_{11t} – the assessment of the sense of attachment to the place of residence,
X_{12t} – the assessment of local media,
X_{13t} – the assessment of the performance of non-governmental institutions,
X_{14t} – the assessment of the impact of Church on the local community,
X_{15t} – the participation of respondents in cultural events,
X_{16t} – the participation of respondents in public consultation,
X_{17t} – the assessment of the impact of proposed changes on the sense of security,
X_{18t} – the number of criminals per 1000 residents,
X_{19t} – the number of road accident casualties per 1000 residents,
X_{20t} – the proportion of expenditures on social assistance in the commune's overall expenditures,
X_{21t} – the rate of unemployment,
X_{22t} – the change in population numbers between 2008 and 2018 (%),

X_{23t} – the proportion of the expenditures on fire precautions in the commune's overall expenditures,

X_{24t} – crime detection rate,

X_{25t} – average monthly wages against national average,

X_{26t} – average disposable income per capita,

X_{27t} – road accidents per 100,000 inhabitants,

X_{28t} – the number of criminal offences per 1,000 residents,

X_{29t} – the number of hospital beds,

X_{30t} – the number of the homeless,

X_{31t} – vandalism rates,

X_{32t} – the number of blue cards issued,

X_{33t} – the number of unguarded railway crossings,

X_{34t} – the number of 112 emergency calls made.

The process of selecting features for the construction of the synthetic indicator of the levels of security across communes had to be conducted very carefully. Due to the methodological requirement of the features to encompass all of the statistical data and the homogenous methodology of collecting statistical data, some of the above listed indicators could not be qualified to subsequent stages of the synthetic measure construction. Consequently, the methodology requirements were not met by the following features: X15t, X16t, X26t, X28t, X29t, X30t, X31t, X32t, X33t, and X34t. The major problem was the incompleteness of statistical data, the lack of homogeneity for the different communes, at times a complete lack of data, and also the lack of information on the ways of gathering statistical data by authorised institutions. For instance, there is a certain discretion regarding the issuance of blue cards, and the statistical data depend on the guidelines of police commissioners. Essentially, the statistical data in terms of the factors determining the levels of local security is largely insubstantial.

The features qualified to the subsequent procedure were not greatly correlated with each other; therefore, all of them were included in the synthetic indicator. Features from X1t, to X17t, X20t, and from X22t, to X25t were regarded as stimulants, while all the other as destimulants.

Table. 1. *The construction of individual variants of the synthetic measure**

Feature	Stimulant (S) Destimulant (D)	TMR	TMR1	TMR2	TMR3	TMR4
-1-	-2-	-3-	-4-	-5-	-6-	-7-
X_{1t}	S			X		X
X_{2t}	S					X
X_{3t}	S					X
X_{4t}	S					X
X_{5t}	S					X
X_{6t}	S					X
X_{7t}	S					X

X_{8t}	S					X
X_{9t}	S					X
X_{10t}	S					X
X_{11t}	S					X
X_{12t}	S					X
X_{13t}	S					X
X_{14t}	S					X
X_{17t}	S		X	X		X
X_{18t}	D	X	X	X		
X_{19t}	D	X	X	X		
X_{20t}	S	X	X	X		
X_{21t}	D	X	X	X		
X_{22t}	S	X	X	X		
X_{23t}	S	X	X	X		
X_{24t}	S	X	X	X		
X_{25t}	S	X	X	X		
X_{26t}	D	X	X	X		
X_{27t}	D	X	X	X		

*Note: * mark X denotes the exclusion of the given feature from the construction of the given version of synthetic measure; the grey colour mark denotes features included in the given version of synthetic measure.*
Source: Authors' own study.

Table 1 presents the features used in the construction process of individual versions of the synthetic measure (Column 1). Column 2 covers either stimulants or destimulants. Columns 3-7 use the colour grey to mark the features included in the individual synthetic measures. Mark X denotes features excluded from the given version of the integrated indicator. TMR denotes the synthetic indicator of local security made up of the features obtained in the subjective survey on the sense of security of the inhabitants of the Kuyavian-Pomeranian province. TMR1 is the TMR indicator minus the assessment of the predicted change in the sense of security. TMR2 is the TMR indicator minus the assessment of the sense of security and the predicted changes in it. TMR3 includes all of the selected features, i.e. subjective features, obtained in the empirical research, and objective indicators determining the levels of local security. Finally, TMR4 was constructed only on the basis of the indicators of local security determinants.

4. Research Results

4.1 The Analysis of Synthetic Indicators and Local Security Rankings on the Basis of Subjective Assessment of Local Security Levels

This point offers an analysis of the synthetic indicators of local security levels constructed on the basis of the subjective features of districts, as obtained in the empirical research. The first indicator to be analysed is TMR (Table 2).

Table 2. *The ranking of the districts of the Kuyavian-Pomeranian province according to the integrated security levels indicator*

District	TMR	Position	Security level
mogileński	0.626093	1	high (four districts)
radziejowski	0.524788	2	
brodnicki	0.519124	3	
lipnowski	0.504359	4	
włocławski	0.499832	5	low (eight districts)
grudziądzki	0.456158	6	
chełmiński	0.44113	7	
świecki	0.425978	8	
golubsko-dobrzyński	0.390894	9	
żniński	0.373115	10	
tucholski	0.326014	11	
toruński	0.298848	12	
Toruń	0.247859	13	very low (11 districts)
wąbrzeski	0.232525	14	
bydgoski	0.223098	15	
aleksandrowski	0.222311	16	
inowrocławski	0.208349	17	
Włocławek	0.208032	18	
nakielski	0.172063	19	
rypiński	0.131168	20	
Grudziądz	0.111729	21	
Bydgoszcz	0.110726	22	
sępoleński	0.034131	23	

Source: Authors' own study.

Taking account of all the qualified features of the objects under analysis, the authors compiled a ranking of districts with regard to the local security level at the place of residence. When constructing the synthetic measure, the authors considered all of the ratings of the individual components of the local security system given by residents, as well as the rating of the level of the sense of security and its forecast.

The highest level of local security, according to residents, is in the Mogileński district. The level of the integrated indicator reached 0.63 which means the district is among those with the highest level of security. This group also includes the radziejowski, brodnicki and lipnowski districts. In total, this group includes four self-government units. At the other end of the ranking is the sępoleński district, with a very low indicator value of 0.034. This group also includes ten other districts (Table 2). The group with a low rating of security levels (the integrated indicator value of 0.25 – 0.5) comprises eight districts.

The taxonomic gaps between the levels of integrated indicators are relatively long, which denotes significant differences in the ratings of security levels given by the

residents of the Kuyavian-Pomeranian province. It should be stressed that not a single district was included in the "very high level of security" group (TMR 0.75).

Table 3. The ranking of the districts of the Kuyavian-Pomeranian province according to the integrated security levels indicator (excluding the prospects of changes in local security levels)

District	TMR1	Position	TMR1-TMR
mogileński	0.614782	1	0
radziejowski	0.512293	2	1
brodnicki	0.510599	3	-1
lipnowski	0.502373	4	0
włocławski	0.483051	5	0
grudziądzki	0.437234	6	0
chełmiński	0.431667	7	0
świecki	0.431007	8	0
golubsko-dobrzyński	0.378375	9	0
żniński	0.35247	10	0
tucholski	0.307507	11	0
toruński	0.293903	12	0
Toruń	0.237365	13	0
wąbrzeski	0.219343	14	2
bydgoski	0.218927	15	-1
aleksandrowski	0.216113	16	0
inowrocławski	0.200396	17	1
Włocławek	0.192397	18	-1
nakielski	0.179886	19	0
rypiński	0.135598	20	0
Grudziądz	0.123196	21	0
Bydgoszcz	0.100617	22	0
sępoleński	0.037022	23	0

Source: *Authors' own study.*

Due to the fact that the research conducted in the districts of the Kuyavian-Pomeranian province revealed significantly lower average ratings of the future changes in the sense of security of local communities of the Kuyavian-Pomeranian province in relation to their average rating of the sense of security alone, the authors decided to research the synthetic indicator with the exclusion of feature X17, i.e., the prospect of future changes in the sense of security. The decision resulted from a strong conviction that respondents' scepticism about the success of future changes can significantly impact the whole indicator and, consequently, the ranking of districts with regard to the assessment of the level of security of local communities made with the application of the taxonomic synthetic measure.

An analysis of the data in Table 3 permits the conclusion that the above-mentioned decision did not impact the whole ranking in a significant way, and that the

hypothesis was confirmed in a few cases only. The decision not to take into account the assessment of future changes in the sense of local security in the construction of the synthetic indicator resulted in standing changes of only six of the twenty-three districts under analysis, but the changes were relatively insignificant. In the revised ranking of security levels, three districts changed their standings, i.e. the aleksandrowski district (two positions), the brodnicki district, and the city of Włocławek (one position). This means that in these districts the pessimistic assessment of the changes in the sense of security levels is taxonomically significant enough to exert a negative impact on their positions in the ranking.

The radziejowski, wąbrzeski and inowrocławski districts reported drops in their ranking positions (by one position in all cases). This means that the positive assessment of the changes in the sense of security has a positive influence on their ranking standings. It is also interesting to take a closer look at the differences in the nominal values of both variants of the integrated measure for individual districts. Essentially, the removal of the prospects of changes in the sense of security from the construction of the integrated measure results in a drop in the indicator's value in most of the districts. This means that the exclusion of the prospects of changes in the sense of security results in an overall lower rating of the security levels in most cases. To sum up, the impact of this parameter on the indicator's level is not as big as the changes in the ranking might imply.

Exceptions to this rule are the nakielski, rypiński, sępoleński and świecki districts and, primarily, the city of Grudziądz, where the value of the integrated measure of local security with the exclusion of the prospects of changes in the sense of security is higher than that of the initial indicator. This means that the residents of these districts are so sceptical about their future security that it exerts a significant impact on the levels of the integrated measure. The city of Grudziądz is particularly interesting in this respect as the indicator level with the exclusion of the prospects of changes in the sense of security is as much as 10% higher than that of the initial indicator.

It is also worth noting that the exclusion of the prospects of changes in the sense of security from the integrated indicator resulted in a shortened taxonomic gap between the weakest and strongest districts. This is turn means that this parameter does impact, if only to a limited extent, the broadening of the taxonomic distances between individual districts.

Another step in the analysis of the integrated measures of the security of local communities of the districts of the Kuyavian-Pomeranian province is researching the relationship between the initial measure and the security level indicator minus two most subjective ratings, i.e. the sense of security and the prospect of changes in the sense of security. A comparison of the integrated measure constructed in such a way provides some interesting results.

Table 4. *The ranking of the districts of the Kuyavian-Pomeranian province according to the integrated indicator of security levels (with the exclusion of the sense of security and the prospects of changes in local security levels)*

District	TMR2	Position	TMR2-TMR
mogileński	0.62795	1	0
radziejowski	0.519708	2	1
brodnicki	0.503643	3	1
lipnowski	0.500275	4	-1
włocławski	0.477595	5	0
grudziądzki	0.424329	6	0
chełmiński	0.420712	7	1
świecki	0.419606	8	-1
golubsko-dobrzyński	0.383981	9	0
żniński	0.337741	10	0
tucholski	0.293716	11	1
toruński	0.291858	12	0
Toruń	0.265354	13	0
wąbrzeski	0.222407	14	3
bydgoski	0.221433	15	0
aleksandrowski	0.218285	16	1
inowrocławski	0.216453	17	-3
Włocławek	0.208391	18	-2
nakielski	0.172953	19	0
rypiński	0.138698	20	1
Grudziądz	0.126952	21	-1
Bydgoszcz	0.084637	22	0
sępoleński	0.02702	23	0

Source: *Authors' own study.*

First, the exclusion of the two features results in changes in the ranking positions of as many as 12 districts (only six in the other case). Furthermore, the discrepancy between the indicators of the best and worst rated districts grows to as much as 0.6, being the biggest value of all the versions of the integrated value. This means that in many cases the assessment of the sense of security and the prospect of future changes in it exerts a measurable influence on the taxonomic positions in the districts ranking and does not correspond fully with the ratings of the individual components of the local security system.

The data in Table 4 shows that seven districts went up the ranking table, which means that five other districts went down the table compared to the initial synthetic indicator. The Włocławek district reported the biggest leap (three positions up the table), which implies that in this case the connection of the sense of security with the forecast of changes in it results in lower ranking standings. This could mean that the residents of Włocławek are so pessimistic about their sense of security that it impacts the taxonomic position of their district. The same is true for the brodnicki,

lipnowski, świecki, toruński, inowrocławski and Grudziądz districts. It should be noted, however, that the drop in the ranking is relatively small (one position down in each case).

It is a different issue with regard to the Wąbrzeski district which lost as many as three positions in the ranking table (the biggest drop of all). This means that the rating of the sense of security, combined with the prospects of its changes, has a positive influence on the taxonomic position in the end-to-end ranking. Thus, the residents of the district give these two features such a good rating that they start to exert a highly positive impact on the taxonomic position in the end-to-end districts ranking. Drops in ranking standings were also reported by the following districts: aleksandrowski (two positions down) and radziejowski, chełmiński and rypiński (one position down).

The comparison of the nominal values of both rankings is also very interesting. Despite the increased gap between the highest and lowest values of the integrated measure, most districts (sixteen) reported a lower value of the indicator. Essentially, this only shows a positive attitude of the respondents of these districts to the sense of security and the future changes in it. Precisely, it is an indication of a positive impact of these features on the taxonomic position of the districts. The highest nominal drop was reported in the following districts: żniński, tucholski and grudziądzki. The district of Bydgoszcz is particularly interesting as its integrated measure decreased by almost 24%.

At the other end of this ranking are the cities of Grudziądz, Toruń and Włocławek. These districts reported an increased integrated indicator, following the exclusion of the sense of security and the rating of the prospects of its changes. This means that the residents of the above-mentioned districts are so pessimistic about these factors that their ratings exert a negative impact on the value of the integrated indicator. This is particularly evident in Grudziądz, where the indicator value increased by more than 24%. An almost equally big drop in the integrated measure was reported in the sępoleński district (nearly 21%).

4.2 The Analysis of the Synthetic Indicators and Rankings of Local Security on the Basis of Objective Indicators

This part offers an analysis into the values of the synthetic indicator of local security conducted with the application of traditional indicators. They describe the various factors determining the levels of local security.

Following the supplementation of the integrated local security indicator with traditional indicators of local security the authors obtained very interesting results in terms of changes in the ranking standings of the districts of the Kuyavian-Pomeranian province. It can be concluded that such a measure taken when constructing the integrated measure resulted in significant changes throughout the

ranking Table since as many as 14 districts changed their positions, with nine going up the table and 6 going down. The whole table also became "flattened" which means that the inclusion of traditional indicators of local security levels in the construction of the synthetic measure resulted in districts becoming more similar to one another than in the case of subjective ratings offered by residents. The spread between the best and worst rated district was 0.42, which is a significantly smaller value than in the case of the other variants of the indicator (Table 5).

Table 5. *Ranking of the districts of the Kuyavian-Pomeranian province according to the integrated indicator of security levels taking account of research findings and traditional indicators of local security*

District	TMR3	Position	TMR3-TMR
mogileński	0.45525	1	0
radziejowski	0.398272	2	1
brodnicki	0.396122	3	1
lipnowski	0.358531	4	3
włocławski	0.338266	5	2
grudziądzki	0.31813	6	1
chełmiński	0.313856	7	-2
świecki	0.313361	8	2
golubsko-dobrzyński	0.296115	9	-6
żniński	0.294301	10	-1
tucholski	0.266168	11	0
toruński	0.226594	12	0
Toruń	0.195584	13	0
wąbrzeski	0.18614	14	1
bydgoski	0.17562	15	-2
aleksandrowski	0.17505	16	0
inowrocławski	0.131391	17	0
Włocławek	0.126187	18	1
nakielski	0.115101	19	-1
rypiński	0.092225	20	0
Grudziądz	0.087058	21	1
Bydgoszcz	0.07232	22	0
sępoleński	0.031605	23	0

Source: *Authors' own study.*

The biggest leap up the ranking table was reported by the Chełmiński district (by three positions), while the świecki and żniński districts went up by two positions. In these districts, respondents gave a much worse rating to the levels of local security than indicated by "hard" data. A reverse situation occurred in the radziejowski district (a drop of as many as six positions). The włocławski district and the city of Toruń reported a decline of two positions (Tables 4 and 5). This should be interpreted as a better, than implied by traditional indicators, rating of security levels given by the districts' residents. However, the change in the ranking standings probably only regards the taxonomic position of these districts.

Apart from the changes in the ranking it is also worth pointing to a dramatic drop in the value of the synthetic indicator of local security following the inclusion of "hard" security determinants. The measure under research decreased in all of the cases. The biggest decline was reported in the city of Włocławek (by as much as almost 45%) and the radziejowski district (by almost 44%). In many districts, the decline in the integrated measure exceeded 20% and even as much as 30%. Thus, the overall conclusion is unambiguous: the residents of the Kuyavian-Pomeranian districts assess the local security system much more favourably than implied by traditional factors.

At the end of this part of the paper the authors developed a synthetic indicator made up of solely traditional indicators of local security determinants (see: Table 6). It must be stressed that this type of ranking is completely different from the initial one constructed on the basis of the subjective assessment made by the respondents during the empirical stage of the research. Not a single district managed to keep its standings, and all of the ranking table positions were mixed up.

The biggest leap upwards (by as many as 17 positions) was reported by the sępoleński district which took the last place in all of the previous rankings (Tables 4 and 6). A very high increase was also reported by the wąbrzeski district (12 places up) and the city of Bydgoszcz (11 places up). The most dramatic drop was reported by the radziejowski district (as many as 20 places down) and the włocławski district (18 places down the table). The case of the radziejowski district is particularly interesting as in the initial ranking it took the second place with a very high value of the integrated measure. It should be inferred that it is a result of the highest mortality rates on roads, significantly exceeding the all-districts average, and one of the highest rates of unemployment with a negative migration balance.

Table 6. *Ranking of the districts of the Kuyavian-Pomeranian province according to the integrated indicator of security levels with the sole inclusion of traditional indicators of local security*

District	TMR4	Position	TMR-TMR4
mogileński	0.19312	13	3
radziejowski	0.225613	8	-5
brodnicki	0.228348	7	8
lipnowski	0.202146	11	11
włocławski	0.295456	1	6
grudziądzki	0.239656	5	4
chełmiński	0.155511	17	4
świecki	0.10598	19	-13
golubsko-dobrzyński	0.212273	10	7
żniński	0.124909	18	-14
tucholski	0.23989	4	-3
toruński	0.07367	21	-2
Toruń	0.009797	22	-20
wąbrzeski	0.159101	16	4

bydgoski	0.231297	6	17
aleksandrowski	0.267559	3	5
inowrocławski	0.185861	14	-1
Włocławek	0.180705	15	-3
nakielski	0.200745	12	-1
rypiński	0.277702	2	12
Grudziądz	0.095494	20	-2
Bydgoszcz	-0.08841	23	-18
sępoleński	0.212318	9	1

Source: *Authors' own study.*

It must be stressed that this ranking was even more "flattened" than the previous ones. The spread between the highest and lowest integrated measures was merely 0.38. This confirms the previously mentioned homogeneity of the province in terms of security levels.

The analysis of the nominal values of the synthetic indicator of local security, based on traditional measures of security levels, reveals that most districts (but not all of them as in the previous case) reported a drop. This finding is in line with the previously made observations. Nominally, the value of the integrated measure decreased most significantly in the włocławski and radziejowski districts. In relative terms, it translates into a drop of 111.7% and 98.1%, respectively. At the other end is the sępoleński district which, as mentioned before, always occupied the last position in the previous rankings, with the lowest rating given by respondents. In this case, the value of the integrated local security indicator for this district increased significantly (also in the nominal sense). The synthetic measure, taking account of only traditional "hard" security indicators, increased by almost 600% compared to the initial indicator. This means that the "hard" security assessment for this district is much more favourable than the respondents' subjective rating. The same concerns a few other districts headed by the cities of Bydgoszcz and Grudziądz where the rise in the synthetic measure in relation to the initial one was of 82.6% and almost 40%, respectively.

4.3 The Summary of the Analysis into the Synthetic Indicators and Rankings of Local Security Policy Efficiency in the Districts of the Kuyavian-Pomeranian Province

The summary of this analysis is a comparison of different variants of the synthetic indicators for the districts of the Kuyavian-Pomeranian province and their segregation with the application of a model based on the concept of the Haddon matrix. The districts were compiled in groups created on the basis of the integrated measure with sets of different features. The groups were formed with the application of the same spread, i.e. 0.25. On the assumption that the indicator value is within the (0:1) range, four groups were formed, representing particular local security levels, i.e. very high, high, low, and very low (Table 7).

Table 7. *A comparison of security levels in the districts of the Kuyavian-Pomeranian province according to different concepts of the synthetic measure*

Measure including:	Security level:			
	Very high TMR > =0.75	High 0.5 <= TMR <0.75	Low 0.5 > TMR >= 0.25	Very low TMR < 0.25
All of the "soft" features (the integrated measure reference level) TMR		brodnicki, lipnowski, mogileński, radziejowski	chełmiński, golubsko-dobrzyński, grudziądzki, świecki, toruński, tucholski, włocławski, żniński	aleksandrowski, bydgoski, Bydgoszcz, Grudziądz, inowrocławski, nakielski, rypiński, sępoleński, Toruń, wąbrzeski, Włocławek
"Soft" features without prospects TMR1		brodnicki, lipnowski, mogileński, radziejowski	chełmiński, golubsko-dobrzyński, grudziądzki, świecki, toruński, tucholski, włocławski, żniński	aleksandrowski, bydgoski, Bydgoszcz, Grudziądz, inowrocławski, nakielski, rypiński, sępoleński, Toruń, wąbrzeski, Włocławek
"Soft" features without the sense and prospects TMR2		brodnicki, lipnowski, mogileński, radziejowski	chełmiński, golubsko-dobrzyński, grudziądzki, świecki, Toruń, toruński, tucholski, włocławski, żniński	aleksandrowski, bydgoski, Bydgoszcz, Grudziądz, inowrocławski, nakielski, rypiński, sępoleński, wąbrzeski, Włocławek
"Soft" and "hard" features TMR3			brodnicki, chełmiński, golubsko-dobrzyński, grudziądzki, lipnowski, mogileński, radziejowski, świecki, tucholski, włocławski, żniński	aleksandrowski, bydgoski, Bydgoszcz, Grudziądz, inowrocławski, nakielski, rypiński, sępoleński, Toruń, toruński, wąbrzeski, Włocławek,
"Hard" features only TMR4			chełmiński, wąbrzeski, świecki	aleksandrowski, brodnicki, bydgoski, Bydgoszcz, golubsko-dobrzyński, Grudziądz, grudziądzki, inowrocławski, lipnowski, mogileński, nakielski, radziejowski, rypiński, sępoleński, Toruń, toruński, tucholski, Włocławek, włocławski, żniński

Source: *Authors' own study.*

The initial indicator, being a point of reference for the whole analysis of this part of the article, is a measure constructed on the basis of empirical research. The grouping of districts according to this indicator reveals that most of the researched communities point to low (8) or very low (11) levels of security. The group with a high security indicator includes only four districts (brodnicki, lipnowski, mogileński, radziejowski). Not a single district belongs to the group of very high level of the integrated indicator.

An identical result was obtained while grouping districts with the application of the integrated measure version which does not include the assessment of the prospect of changes in security levels. As confirmed before, although the integrated indicator level changed in virtually all cases, it was not significant enough to push any district to another group, i.e. to change the rating of local security.

Some changes occurred while grouping the districts with the application of the integrated measure which excludes both the assessment of the sense of security and the prospects of changes in it. As regards the toruński district, the security indicator increased high enough to shift it from the group of very low security level to the third group (low level). No more shifts were observed.

As mentioned before, more significant changes in the local security ranking occurred when the integrated indicator (from the point of reference), including only the so called "soft" features, was complemented with a set of traditional local safety indicators. A number of significant shifts amongst the groups of districts were now observed. Relative of the reference indicator, all of the districts from group two (high level of local security) moved to group three (low level of local security). They were the following districts: brodnicki, lipnowski, mogileński and radziejowski.

Consequently, group three now included 11 districts. Furthermore, the toruński district moved from group two to group four. As a result, group four now included 12 districts. This means that the inclusion of traditional security indicators and the features obtained in the research in the ranking results in no districts in groups one and two. To sum up, the levels of local security across all of the districts of the Kuyavian-Pomeranian province are either low or very low.

Even greater changes occurred while comparing the integrated measure of local security constructed on the basis of traditional indicators, characterizing local security determinants in combination with subjective ratings obtained in the empirical research. None of the districts managed to hold their positions within group two. What is more, all of the districts in this group (brodnicki, lipnowski, mogileński and radziejowski) moved to group four. This means that the levels of local security in these districts dropped dramatically, from high to very low. This also suggests that residents rate their sense of security quite differently (much better) than implied by "hard" data.

Several districts (golubsko-dobrzyński, grudziądzki, toruński, tucholski, włocławski, żniński) moved from group three to group four. This signals a drop in the assessment of security levels (relative of the reference indicator) from low to very low. In one case (the wąbrzeski district), the integrated indicator changed as much as to shift the district from group four to group three. The level of local security changed from very low to low. The chełmiński and świecki districts remained in group three.

5. Conclusions

Local security policies rely on the swift cooperation of the three levels of local government with the central government and non-governmental organisations, entrepreneurs and informal groups of residents. The execution of local policy targets, including security policy targets, often takes place with the participation of numerous local residents who are best aware of the specific nature and major issues of their local communities. The trend towards an increased social participation in the local decision-making seems a favourable phenomenon. However, it is still a long way to go. In the years to come, the key challenge will be to successfully activate the members of local communities. The research findings reveal that very often respondents are not fully aware of the issues of social participation. Most of the respondents do not take part in the most basic form of social participation, i.e. social consultations.

The sense of security, taken as a broad range of various components, impacts the quality of life of local residents. As the research findings show, a lot depends on relevant policies by local authorities, not only in the sphere of public order, but also on the attempts to raise the well-being of the residents, improve transportation systems, and equally important – to build strong local bonds to make the most of social potential. Information policies, the cultural and entertainment offer are also very important. The findings show that local authorities and institutions responsible for providing security should not only follow the opinions of local residents, but also take into account the "hard" data on particular security categories.

The authors assumed that the assessment of the security policy efficiency depends on how the local communities perceive the individual components of the security system. The research findings show that within a single province there are significant differences in the ratings of the security system components included in the ranking (Table 6).

The findings also reveal significant discrepancies between the subjective rating of security by the residents of the Kuyavian-Pomeranian province and its objective assessment on the basis of various indicators. Combing these two approaches, by assigning each district with a synthetic taxonomic measure, may not be a "golden mean", but does not seem unreasonable at all.

The research confirmed the usefulness of taxonomic methods in researching the issues of local security. As mentioned many times before, it is a multifaceted issue and difficult to research. The ratings of particular security system areas or specific threats usually reflect respondents' individual and standalone opinions. Therefore, the combination of numerous components of local security policies in a single assessment indicator makes it more objective. Additionally, a positive feature of the above presented method is the possibility to freely modify the features of the

communities under research, i.e. both the subjective components of the security system rated by the residents and the objective indicators.

A significant obstacle in researching local communities with the application of taxonomic methods is, unfortunately, the quality of data gathered at the local level. As long as the data by the Central Statistical Office does meet the requirements set by the method, the data gathered by other institutions fails to meet them completely. Data must not only be complete, but the gathering methodology should remain stable over time and be the same for all objects under research.

The research provided answers to the questions asked and allowed a successful verification all of the hypotheses we had formulated. We also confirmed the hypothesis that there are significant discrepancies regarding the efficiency of local security policy across individual districts of the Kuyavian-Pomeranian province. Furthermore, the research has also justified the hypothesis that there are essential differences between the subjective evaluation of the level of security by residents and its objective assessment done with the application of indicators. The overall conclusion is clear: residents of the districts of the Kuyavian-Pomeranian province evaluate the internal security system a lot higher than is shown by traditional indicators.

The research shows that when building the local security policy, including programmes and strategies, one should take into account not only hard data concerning different security categories (the number of accidents, crime rate), but also the inhabitants' perceptions. This may help to reveal problems of a psychological nature, which, regardless of the self-government's activity, may have an impact on the assessment of security by residents. Local governments should encourage citizen to more actively participate in the building of security policy through: social consultation, residents' involvement in security programmes, informing them about the steps taken by the local government, and the reduction of places which can generate risks or increase a sense of threat (Kelling and Wilson, 1982).

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