FUNCTIONAL STRUCTURE OF GMINAS IN POLAND – CLASSIFICATION APPROACHES AND RESEARCH OPPORTUNITIES

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Abstract: The aim of the article is to define the concept of territorial classification and typology, including classification and typology of spatial units, and to systematize the practical variants of the method, as well as to identify the possibilities of using functional structure as a research tool. It systematizes existing approaches of creating functional classifications and typologies and presents examples of their application in analyses to interpret and explain dissection of individual variables. The paper consists of two parts. In the first one the spatial unit classification has been defined and distinguished from related terms. Different classification of rural areas has been systemized using formal and methodological or substantive criteria. In the second part, diverse empirical examples of rural spatial units classifications regarding functional structure and their application have been examined in relation to above mentioned systematics.

Key words: territorial classification and typology, spatial units classification, functional structure, rural areas.

Introduction

The functional structure of gminas is the product of, *inter alia*, historical, natural, social, economic and location determinants. Transformations of the functional structure of gminas take place mainly as a result of their increasingly non-agricultural nature, since as Kostrowicki (1976, p. 602) stated, the social and economic development resulted in "functions previously characteristic almost exclusively for urban areas appearing in rural areas." Over the course of four decades from the date of the above article, numerous classifications and typologies of the functional structure of gminas and/or rural areas in Poland were developed in various research and planning units (e.g. Stola 1987, 1993; Falkowski 1993; Bański 1998, 2009; Kaczmarek 1998; Rosner 1999, 2007; Bański and Stola 2002, Heffner and Rosner 2002, 2005; Komornicki and Śleszyński 2009; *Typologia obszarów wiejskich...* 2011; Stanny 2013; Mazur et al. 2015). Thanks to comprehensiveness and national coverage of those publications, the criteria used are universal and have high application value. They allow to compare the results obtained in various areas or periods, and therefore are frequently used by numerous researchers of rural areas in Poland. There is also plenty of valuable comprehensive publications on individual regions (e.g. Adamowicz and Zając 2006; Molenda-Grysa 2008; Standar and Średzińska 2008; Młodak

2009; Czapiewski 2010). Their criteria are often not so universal, but adjusted to regional specificity. Apart from comprehensive publications, numerous thematic classifications of Polish rural areas (including Kołodziejczyk 1991; Domalewski 2002; *Turystyka wiejska…* 2012) also deserve a mention, since they enable the synthesis of the functional structure of the country in terms of specific issues.

The usefulness of territorial classification in rural research results from the fact that it is an efficient and objective method of synthesizing specific information. Recently, the practical need for classification of rural areas has been additionally reinforced by a territorial approach in the development policy, including the current financial perspective 2014–2020, under which the distribution of funds depends on, *inter alia*, type of rural areas.

The universality of the territorial classification method generates a diversity of its possible variants, approaches and applications. In order to investigate this wide spectrum of opportunities for rural area research, it is worth organising the information on various approaches to territorial classification and possibilities to use them to analyse the diversity of spatial structures at the local scale. The aim of the article is to define the concept of territorial classification and typology, including classification and typology of spatial units, and to systematize the practical variants of the method, as well as to identify the possibilities to use the functional structure as a research tool. The article is methodical, it systematizes the previous approaches to creation of functional classifications and typologies and presents examples of their usage in analyses to interpret and explain dissection of individual variables.

Definition of spatial unit classification and systematics of rural areas classification

The concept of spatial unit classification versus related concepts

Territorial classification, understood both as a method and the result of its application, is one of key research topics in social geography. It is used in numerous theoretical publications on rural areas, and its application role has been increasing recently. Territorial classification is commonly understood as classification of a predefined set of spatial units, most often administrative ones. Thus, territorial classification is popularly understood as classification of spatial units and does not cover the issues related to determination of their size and their delimitation method, which are treated as a separate method, i.e. regionalisation. This is often due to the fact that the method of aggregating the available data, and in consequence the set of analysed spatial units, is predefined. However, regionalisation may be treated as an important part of territorial classification and the method of delimitation of classified spatial units determines their set and the obtained results, and in the case of certain types of classification also the set of criteria and classes. The dasymetric cartogram method, which consists not only in assigning spatial units to classes of phenomenon intensity, i.e. their classification, but also in delimiting the boundaries of those units so that they created a relatively homogenous areas in terms of analysed features, is an example of using regionalisation as an integral component of territorial classification (Goleń and Ostrowski 1994). Therefore, the spatial unit classification will be treated in this article as a specific case of territorial classification, excluding determination of a set of analysed spatial units.

However, not all authors of spatial unit classifications make an explicit distinction between the terms "classification" and "typology." If those notions are not used interchangeably, a variety of criteria are used to distinguish between them and characterise their relations. Classification is sometimes treated as a special case of typology, which meets the condition of assigning exactly one type to each spatial unit (cf. Runge 2006). However, in numerous cases the relation between those two notions is reversed, since classification is treated as a more general concept, and typology is its special case meeting additional conditions, i.e. simultaneous coverage of numerous characteristics of the analysed phenomenon (Wójcik 1965; Parysek 1982; Śleszyński 2012).

In this article, spatial units classification is understood as a method consisting in organising the set of such units based on a set of general classes with generalisation of their specific characteristics, or a set of types constituting a model of configuration of the analysed characteristics, fulfilling the condition of assigning exactly one element from the set of classes or types (uniqueness) to each element from the set of spatial units (completeness). Since each function assigns exactly one element from its range to each element from its domain, in this article the spatial unit classification is defined as function ($f : O \rightarrow K$) of n-element set of analysed spatial units ($o_i : o_i \in O \wedge i \in \{1,2,3,...,n\}$) in the disjoint element set of classes ($k_j : k_j \in K \wedge j \in \{1,2,3,...,m\}$). However, for the completeness and uniqueness conditions to be met at the same time, the set of classes constituting the range of the function must meet specific conditions. Due to the need to assign at least one class (completeness) to each analysed spatial unit, the set of criteria used for determining the set of classes should cover the entire empirically identified scope of variability of the analysed set of characteristics. In view of the need to assign maximum one class (uniqueness) to each analysed spatial unit, the set of classes should include disjoint or hierarchically organised elements so that for each pair (x,y) the following relation would be met: $k_x \cap k_y = \emptyset$. Therefore, it is worth noting that not every function is injective, one element from the set of values K, i.e. a specific class, may be assigned to numerous elements from the domain of function O, i.e. to numerous spatial units. Spatial unit classification should be therefore treated as a systematic task consisting in two actions:
1) determination of a set of disjoint classes covering the entire scope of variability of the analysed combination of characteristics, according to which the set of spatial units will be systematized;
2) determination of a function assigning the set of analysed spatial units to a set of classes, based on characteristics of those units.

Typology of spatial units should be understood as a special case of their classification, where criteria concern a combination of at least two different characteristics of a spatial unit (classification in at least two dimensions). Classes are then called types.

Systematics of spatial units classification in terms of formal and methodological criteria

Spatial units classifications, including those of rural areas, are prepared very differently. The variants may be organised based on formal and methodological, or substantive criteria. From formal and methodological perspective, individual classifications may be analysed in terms of:
- the number and interdependence of analysis dimensions;
- hierarchy of the set of spatial units and the set of classes;

- generalisation of classes;
- recurrence of functions.

The number of characteristics of spatial units, the combinations of which area analysed under a given classification, may be considered the number of its dimensions. It is worth noting that those dimensions are at times interdependent, like when a certain characteristics of a spatial unit within one attribute determines or excludes the existence of a specific characteristic within another attribute. As a result, the classification is an efficient method of synthetic description of the structure, where extremely low or extremely high share of one element excludes the possibility of certain values of the share of other elements. Examples of such spatial unit classifications include the typology of internal structure of the phenomenon based on Ossan triangle (Runge 2006) and the d'Hondt method of successive quotients (Kulikowski 1981, 2003).

Each spatial units classification requires the adoption of a specific starting point which may be a set of spatial units along with their specific characteristics or a set of classes. The adoption of a specific hierarchy in this regard has significant methodical consequences and to a large extent affects the obtained result. In practice, it consists in adopting one of the two method for determining the set of classes, namely, *ex ante* (e.g. Bański 2009; *Typologia obszarów wiejskich…* 2011; *Turystyka wiejska…* 2012) or *ex post* (e.g. Stola 1987; Bański and Stola 2002; Stanny 2013). The *ex ante* determination of the set of classes results from it being treated as a superior part of classification. The aim is then to find a set of classes which will allow to achieve the purpose of classification to the greatest possible extent. The *ex post* determination of the set of classes results from the adopted assumption about superiority of the set of spatial units. In such case, the searched set of classes is the one that may be considered optimal from the perspective of adjustment to empirically identified variety of the elements of the spatial unit set. Each of the presented approaches has some advantages and disadvantages.

Regardless of the adopted hierarchy between the set of spatial units and the set of classes, authors of classifications may aim at specifying the maximum number of classes to perform a more thorough analysis (e.g. *Turystyka wiejska…* 2012), or generalise them, reducing the number due to the small size of the set of spatial units assigned to some specific classes or due to their substantive similarity. The generalisation of the number of classes, which leads to identification of more general categories, is usually accompanied by the reduction of the level of measurement of information that describes them. Quantitative presentation, frequently used in analytical publications, in the form of specific values of individual statistical indicators is then abandoned for the sake of an ordinal scale (e.g. low, medium, high), and sometimes also a nominal scale (e.g. agricultural, forest, tourist). Such reduction of the level of measurement only seemingly results in the reduction of information about a given area. A great advantage of this operation is the fact that it organises the information about a given area, thus facilitating its synthesis and identification of general regularities, highlighting the aspects of relevance for the objective of the publication.

Variants of spatial unit classification differ not only in terms of the method of determining the set of classes, but also in terms of the way of assigning the elements from the set of spatial units to the elements of the set of classes. Classifications of rural areas use recurrent (cf. Bański 2009; Komornicki and Śleszyński 2009; Śleszyński 2012) or non-recurrent functions (cf. *Typologia obszarów wiejskich…* 2011; *Turystyka wiejska…* 2012).

A recurrent function consists in successive assignment of classes to spatial units in subsequent steps (iterations), where the results of the subsequent stage of assignment depend on the results of its previous stage. This method is often used in the case of distinguishing the hierarchically organised classes (e.g. Bański 2009). In such case, superior classes, e.g. intensive functions, are assigned first, while subordinate classes, e.g. extensive functions, driven out and losing to competition, may be assigned only to the spatial units with no superior class assigned. Other example of using a recurrent function in spatial unit classification is assignment of a class to a given unit based on i.a. the classes assigned to neighbouring units. Such procedure is very useful for spatial generalisation of the results of spatial unit classification (e.g. Mazur et al. 2015). A non-recurrent function is a function that assigns a given class irrespective of the results of assignment of other classes or assignment to other spatial units. The systematics of spatial unit classification variants in terms of interdependence of analysis dimensions, generalisation of classes and recurrence of the applied function is presented in Fig. 1.
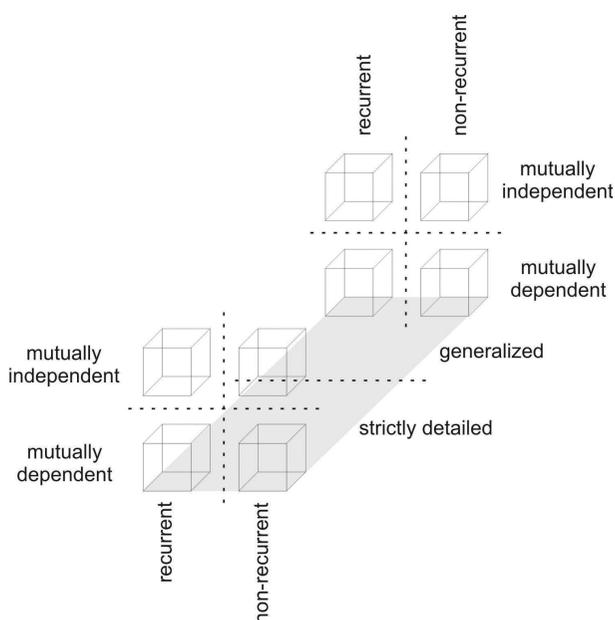
Fig. 1. Schematic division of spatial unit classification variants according to formal and methodological criterion (own elaboration).
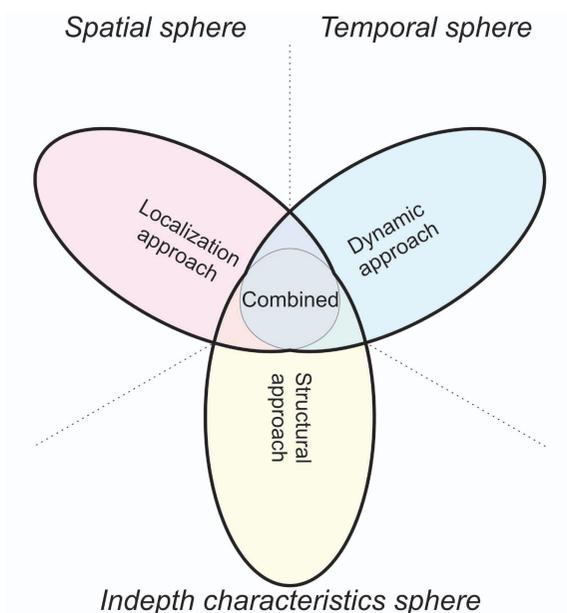
Systematics of spatial units classification in terms of substantive criteria

Three classification approaches are distinguished based on substantive criteria, namely, localisation, structural and combined (mixed) (Bański, 2009; 2014). It should be noted that every classification is based on various criteria and can be extended to more than one of the three abovementioned approaches. However, one approach usually prevails.

Under the localisation approach, the analysed set of spatial units is classified based on urban-rural continuum, into categories related to (1) cities and their impact areas, (2) traditional rural areas, or (3) peripheral areas (Dijkstra and Poelman 2008; Komornicki

and Śleszyński 2009; Dijkstra and Ruiz 2010; EDORA 2011). More detailed classes of rural areas may be identified within those categories. The structural approach allows to separate subsets of the analysed spatial units in terms of their socio-economic characteristics. The classification is most often based on prevailing economic functions in the analysed spatial unit (i.a. Stola 1987; Bański and Stola 2002; EDORA 2011) or the level of development of individual functions or their groups (e.g. Bański 2012). The combined approach is complex and usually combines the categories used in the localisation and structural approach (Rosner 2008; Prieto-Lara and Ocaña-Riola 2010; Bański 2012). This combination may result from distinguishing a set of classes based on criteria characteristic for different approaches or from synthesis of the results of two independent classifications, created using various approaches into one territorial typology. This well-established three-part division of spatial unit classification in terms of substantive criteria requires modification, since in recent years the number of classifications highlighting the aspect of variability of various characteristics of an area in time has been increasing. Such approach allows to analyse the dynamics and direction of transformations of rural areas in the analysed period in terms of development of specific functions or changes in availability and spatial links. It is thus independent from structural and localisation approaches and has unique characteristics. Functional rural areas (Mazur et al. 2015) constitute an example of the combined approach taking into account all three substantive aspects: localisation, structural and dynamic. Therefore, three approaches, and one more combining the various aspects, may be currently identified based on the substantive criterion. The division is presented in Fig. 2. It relates to all spheres which may characterise a given area.

Examples of classifications of rural areas under each of the four listed approaches to spatial unit classification are presented in Fig. 3.

Fig. 2. Schematic division of spatial unit classification variants according to substantive criterion (own elaboration).
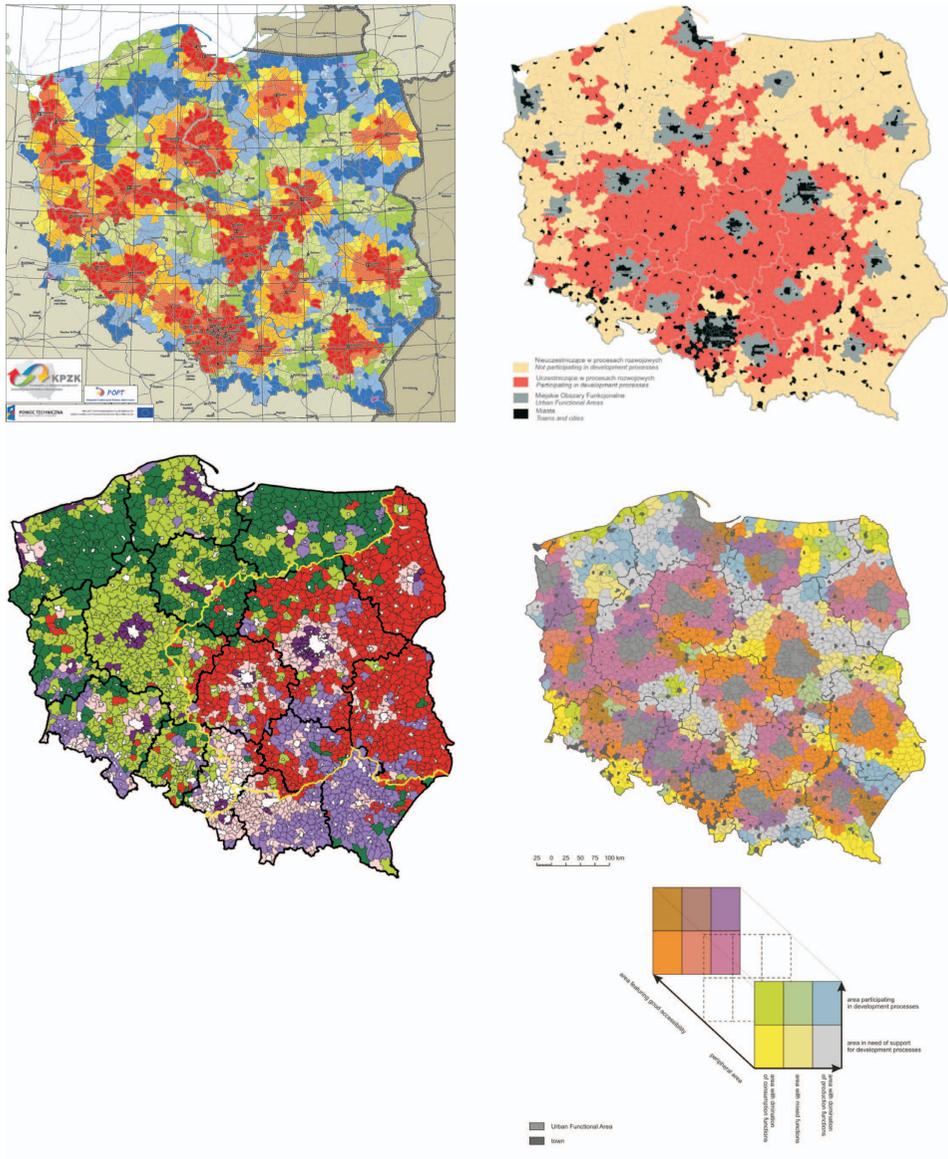
Fig. 3. Examples of various approaches to spatial units classification based on classification of rural areas: localisation (*Koncepcja …* 2011) (top left), dynamic (Bański 2012) (top right), structural (Stanny 2013) (bottom left) and combined (Mazur et al. 2015) (bottom right)

**Functional structure as an exogenous variable**

A functional area is a territorially coherent area comprising functionally linked territories, characterised by common determinants and projected uniform development objectives. Such area is characterised by special spatial management phenomena or spatial conflicts. Such coherence and homogeneity of units constituting functional area provides large room for interpretation. Gminas classified into the same functional types are characterised, despite being distant from one another, by substantial similarity of development opportunities, socio-economic situation, its development and localisation determinants. According to Tobler's first law of geography formulated in 1970, in space "everything is related to everything else, but near thing are more related than distant things" (quot. after Janc 2009, p. 29). We can develop this sentence stating that spatial units constituting homogenous functional types are more similar than their neighbouring units which are classified into different functional types. It should also be noted that in real conditions a great number of factors simultaneously impacts the socio-economic processes taking place in a diversified space (Chojnicki and Czyż 1980), which makes it extremely difficult to identify the impact of one variable on another. Therefore, the functional structure, determined and delimited using a range of variables and treated as an independent (exogenous) variable substantially extend the interpretation possibilities and completes more fully the observed spatial diversification of the analysed characteristics.

Below it is presented five examples of using the functional structure to explain the regularity of distribution of variables treated as dependent variables: (1) a simple measure illustrating the intensity of one phenomenon from a static perspective; (2) a simple measure illustrating the intensity of one phenomenon from a dynamic perspective; (3) a synthetic measure composed of several simple measures in relation to the classification of spatial units from the structural perspective in functional structure terms; (4) a synthetic measure composed of several simple measures in relation to the classification of spatial units from the localisation perspective in functional structure terms; and (5) unit (individual) data aggregated by classification of spatial units in terms of functional structure. Although some of the used functional classifications apply to all territorial units, the majority of conclusions are usually drawn for rural areas and the examples should be interpreted from methodical perspective rather than in analytical terms.

A simple measure illustrating the intensity of one phenomenon from a static perspective

The first example concerns an analysis of migration balance in Eastern Poland in gmina aggregation; the independent variable is the classification of spatial units according to the functional structure developed by T. Komornicki and P. Śleszyński (2008). The analyses are taken from a report prepared by P. Śleszyński and K. Czapiewski (2012). The use of the analysis of different values of one variable according to types of functional structure allows to link the investigated phenomenon to the function prevailing in a given area. Due to great simplicity of this approach, it may be commonly used instead of often applied data aggregation in administrative terms (urban – rural), and the interpretation of such analyses is very intuitive.

A detailed analysis of an indicator of registered migration growth shows that the only functional type of gminas where a positive migration balance was recorded was the GP type, i.e. suburban areas of regional and subregional cities. The scope of those areas is usually limited to one strip of gminas around regional cities, with few exceptions of gminas from the second ring (Olsztyn, Biały-stok and Kielce), or is slightly larger and results from the settlement structure. Apart from suburban areas of regional cities, subregional cities are also surrounded by areas with positive migration growth ratios. However, the scope of those areas is considerably smaller, in many cases it is limited to just one gmina (often a rural gmina with the same name as the subregional city) or several units at most. There is thus high level of hierarchy in the impact of cities on their surrounding areas, as the size in terms of population and economy, and the administrative and functional role of the city decrease, the scale of suburbanisation processes also declines.
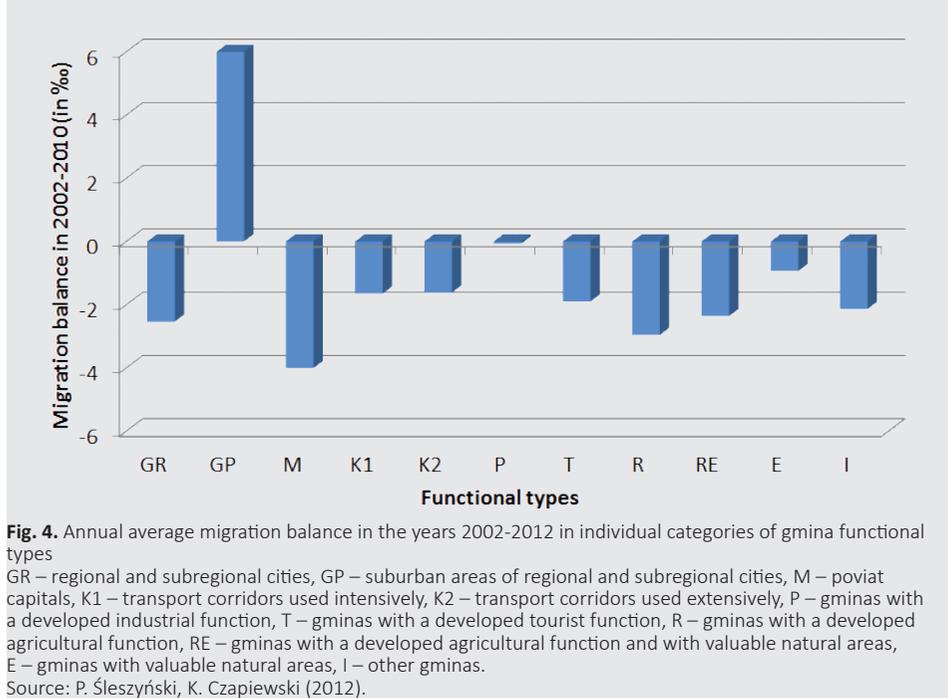
Fig. 4. Annual average migration balance in the years 2002-2012 in individual categories of gmina functional types
GR – regional and subregional cities, GP – suburban areas of regional and subregional cities, M – poviat capitals, K1 – transport corridors used intensively, K2 – transport corridors used extensively, P – gminas with a developed industrial function, T – gminas with a developed tourist function, R – gminas with a developed agricultural function, RE – gminas with a developed agricultural function and with valuable natural areas, E – gminas with valuable natural areas, I – other gminas.
Source: P. Śleszyński, K. Czapiewski (2012).

A simple measure illustrating the intensity of one phenomenon from a dynamic perspective

The second example concerns an analysis of education levels in Mazowieckie Voivodeship in gmina aggregation; the independent variable is the classification of spatial units according to the functional structure developed by P. Śleszyński (2012). The analyses are taken from a monograph by K. Czapiewski and K. Janc (2013). A comparison of variability of individual characteristics within the selected types of a functional structure from the dynamic perspective serves as the basis of analysis of development trends and perspectives and of determination of actual (not only relative) changes in intra-regional diversities. An analysis requires variables in the same spatial aggregation in several temporal cross-sections. In this approach, some research doubt can be raised by application of the same functional division (assuming it is *constans*) to aggregation of data from different points in time.

Analysis of the share of the population with higher education in individual functional types has yielded an important addition to the analyses conducted from the spatial perspective alone. Firstly, Warsaw dominates visibly in terms of the share of the population with higher education: virtually in the entire period 1970-2002 only the region capital recorded higher than Masovia average share of the population with higher education. It proves vast disproportions between Warsaw and the remaining part of the region, but at the same time it shows that Warsaw has a considerable human capital potential. Secondly, between 1970 and 2002 the gap between Warsaw and the other gminas in the voivodeship diminished: the distance in the share of the population with higher education decreased compared to the regional average. Thirdly, the greatest improvement in the education level is recorded mainly by gminas from the suburban area and urban-rural fringe of Warsaw (PSI and PSE) and subregional centres (MG). In the case of Warsaw Metropolitan Area it is linked with suburbanisation processes and migrations of people with higher or secondary education to places neighbouring Warsaw. In turn in subregional centres the increase in the share of people with higher education results from the universities established there past 1990. Fourthly, rural gminas with a variety of non-agricultural and agricultural functions (O – R – E) were characterised by much poorer (2-3 times on average) growth rate of the number of people with higher education than in Warsaw suburban area. Hence, in spite of a general increase in the share of people with higher education in rural areas and apparent reduction of Warsaw's domination in the education level of the population, intra-regional differences persist and are even greater in relative terms. The area with a high share of the population with higher education around Warsaw simply became extended, with islands of subregional centres (Radom and Płock in particular) having small areas of impact. The other areas have undergone slight changes in respect of the share of the population with higher education. Therefore, it is clearly visible that intra-regional differences between Warsaw with its suburban area and the region's peripheral areas in terms of human capital resources of the population increase.

Fig. 5. Share of the population with higher education between 1970 and 2002 in functional types in relation to the region's average.
MS – Warsaw, PSI – Warsaw suburban area, PSE – Warsaw urban-rural fringe, MG – subregional city cores, PG – subregional centre suburban area, MP – poviat capitals, O – intensive development of non-agricultural functions, R – intensive development of agriculture, E – extensive development.
Source: K. Czapiewski, K. Janc (2013).

A synthetic measure composed of several simple measures in relation to the classification of spatial units from the structural perspective in functional structure terms

The third example concerns an analysis of dependencies between the synthetic indicator of success areas in Mazowieckie Voivodeship in gmina aggregation, and the independent variable is the classification of spatial units in terms of their function developed by J. Bański and W. Stola (2002), according to the structural approach. The analyses are taken from the monograph by K. Czapiewski (2010). Synthetic indicators are characterised by a high abstraction level due to simultaneous influence of many variables on their final value and various efficiency of the three criteria for the selection of partial measures: substantive, formal and statistical, applied at the initial stage. The two above examples of analysis of the same set of dependent variables (success areas) in relation to the functional classification in structural and localisation terms show it is possible to use area functions in the analysis of complex variable dispersion. These analyses can use both the method of dividing objects into selected sets (as in both examples, due to the division in the nominal scale) and of calculating summary synthetic indicators for objects classified into relevant functional types (e.g. measurement on a quotient scale).

Analysis of dependencies between success areas and gmina classification by functional structure by J. Bański and W. Stola (2002) yields interesting conclusions. First of all it should be noted that the majority of gminas with non-agricultural functions (tourist, service, residential) were classified as success areas. It results mainly from their favourable location, high level of entrepreneurship of the population, high local budget revenue, favourable socio-demographic trends, and satisfactory infrastructure. Yet, analysis of the structure of gminas from the other functional classes yields the most interesting results because these areas have less favourable conditions. Gminas dominated by commodity farming are successful much more frequently than units dominated by small-scale and semi-subsistence farming. The percentage of success gminas in the total number of units characterised by mixed farming reached in turn a value in between the measures for the class of semi-subsistence farming and commodity farming, which confirms the transitional nature of this class. About 40% of gminas with a multifunctional economy structure (farming and forestry with non-agricultural functions and mixed functions) were classified as success areas. The analysis shows that the likelihood of success increases with both the increase in the share of non-agricultural sectors in the economic structure of gminas and the increase in the yield.
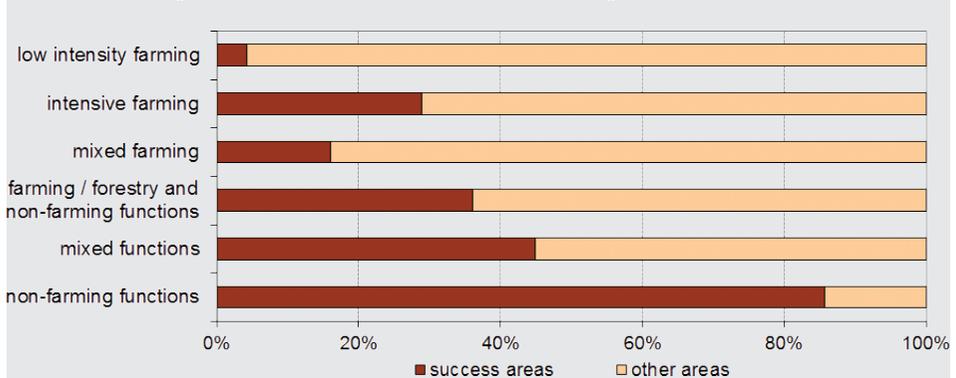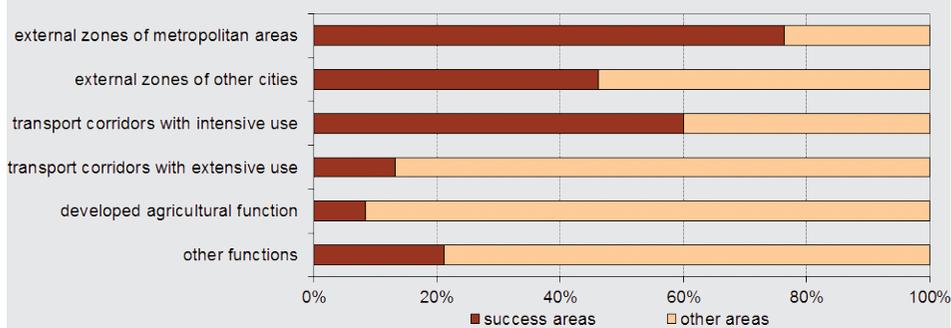

Fig. 6. Share of success gminas and other gminas in individual functional structure classes (according to the structural approach) in Masovia rural areas.
Source: K. Czapiewski (2010).

A synthetic measure composed of several simple measures in relation to the classification of spatial units from the localisation perspective in functional structure terms

The fourth example concerns an analysis of dependencies between the synthetic indicator of success areas in Mazowieckie Voivodeship in gmina aggregation, and the independent variable is the classification of spatial units in terms of their functional structure developed by T. Komornicki and P. Śleszyński (2008), according to the localisation approach. The analyses are taken from an article by K. Czapiewski (2011). Both the above examples of synthetic indicators unambiguously point to a change in the interpretation emphasis of analyses. The researcher decides whether variables depend to a greater extent on the economic structure of areas or are linked with localisation aspects. Therefore, selection of an adequate typology of spatial units in terms of the functional structure applied to explain spatial dispersion of the phenomena under analysis should be preceded by in--depth studies.

Analysis of dependencies between success areas and gmina typology in terms of the functional structure by T. Komornicki and P. Śleszyński (2008) yielded the following results: Over 75% of gminas situated in Warsaw's influence area and nearly 50% of gminas located around subregional centres (Płock and Radom in particular) were deemed success areas. Also location along the major transport corridors with simultaneous intensive use (industry, tourism) predisposes given areas to emergence of positive development trends. In turn, even a favourable location next to major transport routes, but with extensive use (agriculture, forestry, nature conservation) is not a significant development factor. The share of success gminas in units dominated by the agricultural function is slight: it does not exceed 10%. Analyses show that the major gmina success factor is location in the influence area of major urban centres of the region, mainly Warsaw. The very situation along main transport corridors is insufficient for above-average socio-economic development; it must be taken advantage of through intensive land use.


Fig. 7. Share of success gminas and other gminas in individual functional structure classes (according to the localisation approach) in Masovia rural areas.
Source: K. Czapiewski (2011).

Unit (individual) data aggregated by classification of spatial units in terms of functional structure.

The final example concerns an analysis of locations of the best enterprises in Mazowieckie Voivodeship according to individual addresses, and the independent variable is the classification of spatial units according to the functional structure developed by P. Śleszyński (2012). The analyses are taken from a monograph by K. Czapiewski and K. Janc (2013). It is very frequently the case that unit data are confidential and/or their sets are too small to analyse in the lowest spatial aggregation. Summing up the observed objects within the pre-defined functional structure types eliminated these reservations to a certain extent.

For the purpose of this study we analysed the location of companies that were holders of any one of three certificates granted by various institutions. The certificates, distinctions are: Reliable Company Certificate (Certyfikat Solidna Firma), Forbes' Diamonds Ranking (Ranking Diamenty Forbesa), and Fair Play Enterprise Programme (Program Przedsiębiorstwo Fair Play). If the structure of these certificates and distinctions is considered in functional structure types, the dominating role of Warsaw in the case of all three certificates is undisputable: a share of 61-70%. Gminas form Warsaw suburban area rank second in the structure, with a share of 13-22%. Subregional city cores and gminas from Warsaw urban-rural fringe rank (depending on the certificate) third with a share of 4-7%, with the exception of the Fair Play Enterprise certificate for gminas from Warsaw urban-rural fringe rank (2% share). Gminas form the other categories are of marginal significance, with an exception of the relatively high share of subregional centre suburban area gminas in the case of the Fair Play Enterprise certificate (3.5%).
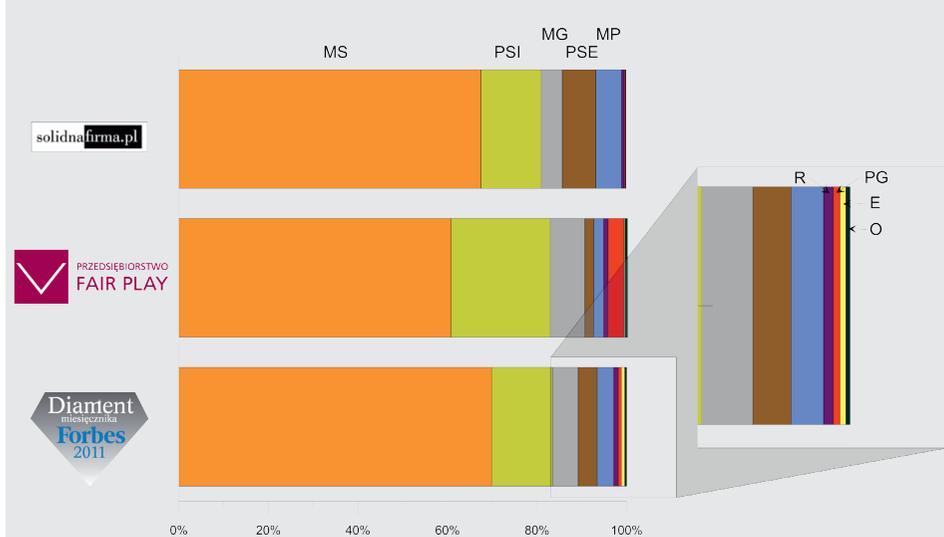
Fig. 8. Share of enterprises holding certificates for companies that prove their quality in the functional structure types of Masovian gminas.
MS – Warsaw, PSI – Warsaw suburban area, PSE – Warsaw urban-rural fringe, MG – subregional city cores, PG – subregional centre suburban area, MP – poviat capitals, O – intensive development of non-agricultural functions, R – intensive development of agriculture, E – extensive development.
Source: K. Czapiewski, K. Janc (2013).

Summary

The purpose of this paper was to highlight ambiguity of definitions of notions concerning territorial classification and typology, and to present interpretation possibilities that result from the application of a functional structure as the independent variable. This paper reviews the possible variants, approaches and applications of the territorial classification method used for that purpose. It systematises the terminology used in literature, distinguishing *inter alia* the notion of territorial classification from the notion of spatial unit classification and classification from typology. The territorial classification consists in regionalisation of the territory under analysis into relatively homogeneous spatial units and their classification. The very classification of spatial units is defined as a function attributing class set elements to spatial unit set elements. Typology is understood as a special case of classification, where criteria concern a combination of at least two different characteristics of a spatial unit. Also, a classification of variants of this method used in practice was proposed, according to formal and methodological or substantive criteria.

The paper further presented examples of the application of the functional structure to interpretation of phenomena and processes in various objective scopes. It should be noted that also in this case detailed application of basic conclusion procedures: substantive formal, and statistical, is important. Selection of a detailed functional classification to explain variability of a phenomenon particularly influences the interpretation process, hence it is important to be familiar with the subject, have some cognitive experience as a researcher and a certain measure of a researcher's intuition which "*allows to penetrate the complex structure of reality*" (Domański R. 1998, p. 13). Nonetheless, it should be noted that application of gmina typology enriches the classical spatial analysis with a functional aspect, thus offering extended interpretation possibilities.

Summing up, it can be concluded that we are now dealing with greater and greater availability of various databases at the local level and nearly unlimited possibilities of use of statistical and cartographic tools for calculations and graphic presentation of these data. Their selection, processing, drawing proper conclusion and application of adequate procedures to describe the functional structure of spatial units becomes a problem. One should bear in mind that there is a plethora of methodological approaches to development of typologies and selection of specific solutions affects not only the delimitation layer, but primarily the interpretation layer. In spite of vast territorial and objective generalisations, classification of the functional structure of gminas provides, on the one hand, new information on spatial relationships in the areas under analysis and, on the other hand, it constitutes a rarely used tool introducing order to other variables and allowing additional interpretation of the processes and phenomena under analysis.

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