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TYPOLOGY OF RURAL AREAS AS ONE OF PREREQUISITES
DETERMINING ORGANIZATION OF SUPPLY

When analyzing organization of trade in rural areas we should take into account complexity and differentiation of factors determining preferences of their inhabitants in the field of supply of goods and services. These factors account for diversification of rural areas (in an aggregate approach) from the point of view of consumer needs. In this connection there arises a question — whether it is possible to determine the diversification of rural areas in the field of consumer needs (in a possibly aggregated form) so as to adapt organizational forms of supply to it. Such a possibility is afforded by topology of rural areas performed from the viewpoint of the supply organization based on factors determining demand for it. The paper sets forth to perform such typology.

In spatially differentiated conditions of operation of the rural trade the postulated typology makes it possible to obtain key information for researches on organization of rural marketing. Selection of spatial units possessing a similar structure of analyzed variables provides a general prerequisite for formulation of solutions concerning marketing.

1. CHARACTERISTIC FEATURES AND SCOPE OF PERFORMED TYPOLOGY

The essence of classification of spatial units according to their types lies in generalization of their characteristic features. From among a big number of features characterizing the analyzed phenomenon in each spatial unit and which — taken together — account for individualization of particular units, we should select a few essential features. These should be the features which, on one hand, provide an insight into the very essence of the examined phenomenon in each spatial unit,

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while on the other hand they can be linked in groups of a similar type¹.

To accomplish such a task we should, first of all, obtain sets of internally similar regions from the point of view of the analyzed variables and which are simultaneously differentiated in relation to one another, and thus characteristic for the analyzed properties. This in turn will pave the way for determination of definite segments (types of rural areas) in which qualitative and quantitative problems connected with the rural marketing remain similar and in which organizational and technical forms of retailing can be standardized.

Main economic functions of a given village belong to the most important factors causing diversification of rural areas and shaping their needs. That is due to the fact that the rural environment is based on principles of mutual ties between economic and marketing functions. The rural trade should adapt itself, first of all, to the structure of economic functions. Needs of inhabitants of a given region, being shaped by ties and feedbacks occurring between various functions and factors deriving from them, will differ according to a given combination of basic economic functions i.e. agricultural production, impact of industry, and tourist attractions.

The character of our researches calls for securing a sufficiently big research target, which should represent developmental differentiation of rural aggregations, diversity of performed functions, entering of a given aggregation on the path of industrialization and urbanization (thus a departure from a mono-functional type) and diversity of conditions and results of these processes in social development of the rural area. A territorial unit of analysis is represented by the whole country divided into regions. The coverage of these regions is determined by the structure of statistical data, the majority of which are published in the administrative province break-up. This imposes a requirement of performing an inter-regional analysis in line with division of the country into provinces (equal treatment of a region and province). Acceptance of a province for a basic unit of analysis is also due to the fact that management of the economy in a spatial cross-section (and thus planning and management) is carried out at a provincial level under the present administrative system, which leads to determination of the main functions and tasks performed by regions in the whole economic structure of the country according to the administrative division².

¹ See A. Szczur, *Problematyka typologii gmin w literaturze NRD i RFN* (Problems of Typology of Rural Communes in Literature of the GDR and FRG), „Wieś i Rolnictwo”, No. 1, p. 199.

² See T. Obrębski, *Zastosowanie metody taksonomicznej do badania po-*

2. METHOD

In order to isolate regions with similar directions of economic specialization and intensity of performed functions characterized by means of incomparable indices — it becomes necessary to bring them down to a common equivalent and apply a method allowing for clustering similar units into definite aggregations. It is possible to perform such spatial typology by means of one of taxonomic methods, which allow to change numerical values of features into taxonomic distances. Application of taxonomic distances makes possible division into regions characterized with the above mentioned properties.

In our analysis we applied J. Czekanowski's taxonomic method of average differences consisting in estimation of average differences to define a similarity level between regions. It allows for a synthetic determination of economic features of an area, definition of spatial profiles with reference to functional types, and mutual relationships between different economic functions performed by the region³.

The value of average differences was estimated according to the following formula:

$$R_{12} = \sum_{j=1}^n \left(\left| \frac{a_{1j} - a_{2j}}{M_{aj}} \right| \right)$$

where:

R — standard value of average differences between all features of the compared pair of units (provinces) described by consecutive numbers 1 and 2 (summary taxonomic distance between first and second province). R is estimated consecutively for all possible pairs of provinces,

a_{1j} — absolute value of feature j in province 1,

a_{2j} — absolute value of feature j in province 2,

M_{aj} — arithmetic mean of feature j estimated for the whole aggregation (all provinces)⁴.

ziomu rozwoju regionów Polski w latach 1960—1970 (Application of Taxonomic Method in Researches on Development Level of Poland's Regions over the Period 1960—1970), „*Ekonomista*” 1975, No. 4, p. 815.

³ A. Szpanderski, *Zastosowanie metody podobieństw do rejonizacji ekonomiczno-rolniczej* (Application of Similarity Method for Economic-Agricultural Regionization), „*Ruch Prawniczy i Ekonomiczny*” 1960, No. 2, p. 157.

⁴ Estimation of differences was performed according to their absolute values (See: A. Fajferk, *Region ekonomiczny i metody analizy regionalnej* (Economic Region and Methods of Regional Analysis), Warszawa 1966, p. 48 and on.

To present the standard value in percentage form, R was multiplied by 100. Index R (standardized value of features difference) expresses in percentage figure the degree of difference between the analyzed elements. It decreases along with increase of similarity between elements with regard to all typological features. Taxonomic distances, which are estimated, are determined by differentiation of the accepted characteristics in the area of individual spatial units.

Apart from selection of typological characteristics, the way of grouping spatial units according to similarities is of decisive importance for the analysis. Division of an aggregation into a certain number of groups characterized with internal similarity was carried out on the basis of the dendrite method. It allows for dendritic ordering of the analyzed territorial units with regard to degree of similarities, simultaneously from the viewpoint of many characteristics, and next for division of the aggregation into some groups of territorial units most similar to one another. In line with the accepted definition „two subaggregations of a given aggregation will be considered essentially different if the shortest distance between a pair of points belonging to two different subaggregations is bigger than a certain critical value”⁵. The critical path was arithmetic mean estimated from the sum of the shortest distances between objects.

$$\bar{c} = \frac{1}{N} \sum_{i=1}^{IV} c_i$$

The accepted procedure allowed to distinguish several territorial groups in the country with regard to which, due to differentiation of demand, there may be drawn conclusions about consequences of this differentiation for marketing. The obtained subaggregations (so-called clusters) consist of units being most similar — closest to one another. It is, however, more difficult to determine marginal distances to obtain provinces being most similar to one another. It should be noted here that the accepted criterion is not ideal. Division of the aggregation according to them led not only to isolation of several clusters but also produced single objects not included to any of them. They can be included into particular groups only on the basis of arbitrary decisions. There was accepted a principle that these objects would be included into

⁵ Z. Hellwig, *Zastosowanie metody taksonomicznej do typologicznego podziału krajów ze względu na poziom ich rozwoju oraz zasoby i strukturę wykwalifikowanych kadr* (Application of the Taxonomic Method for Typological Division of Countries according to Their Development Level, Resources and Structure of Qualified Manpower), „Przegląd Statystyczny” 1968, No. 4, p. 314.

aggregation on the basis of distances from the nearest object (taking also into account non-measured factors). Accordingly they will be included into an aggregation, in which one of elements is most similar to them. In this way there will be obtained areas similar to one another with regard to performed functions and being homogeneous in themselves and heterogeneous between one another.

Taking into account a possibility of occurrence of similar distances as a result of differences ensuing from different combinations of characteristics, the obtained results will be verified on the basis of input material values of particular characteristics⁶. There will be also taken into account additional variables utilized in the typology, which will enrich a commentary on particular provinces whenever a need for it may arise.

3. INPUT DATA FOR ANALYSIS (APPLIED VARIABLES)

The regionalization will be performed on the basis of carefully chosen characteristics, which should reflect in a synthetic manner the essential contents of an economic region⁷. Definition of characteristics representing particular functions performed by regions is of basic significance for the performed typology. Typological characteristics to be analyzed should characterize these functions in a possibly representative manner while the significance of particular indices for inclusion of spatial units into particular types should be equal. The number of analyzed variables should not be too big. Apart from the already mentioned reasons it must be stressed that increase in their number increases also the danger of employing non-diagnostic characteristics which may distort research findings⁸.

Selection of characteristics should be based on sound knowledge of the problem and accessibility of appropriate numerical materials⁹.

Characteristics selected for the typology should depict the level of

⁶ See R. Jedut, *Problemy porządkowania i podziału jednostek terytorialnych przy użyciu zespołu metod taksonomicznych* (Problems of Ordering and Division of Territorial Units by Means of Taxonomic Methods), *Annales UMCS*, Vol. XXV, p. 191.

⁷ A. Fajferek, *Region ekonomiczny i metoda analizy regionalnej* (Economic Region and Regional Analysis Method), Warszawa 1966, p. 58.

⁸ T. Grabiński, K. Zając, *Taksonomiczne metody określania faz rozwojowych procesów demograficznych* (Taxonomic Methods of Defining Developmental Stages of Demographic Processes), „*Studia Demograficzne*” 1976, Vol. 43, p. 18.

⁹ As above.

development of particular functions within a region and meet the basic requirements posed before researches of this kind, that is they should be ¹⁰:

- representative for the target and scope of researches;
- correlated between themselves to a possibly low degree;
- spatially differentiated in the whole area under survey and little differentiated in areas of isolated groups;
- strongly correlated with characteristics not included in the typology but depicting the same phenomenon.

To solve the problems set before this analysis it becomes indispensable to specify — what functions and to what extent are performed by particular provinces?; and accordingly the typology of areas was carried out by means of characteristics representing three basic directions of economic development i.e.:

- volume of state and co-operative purchasing of agricultural produce per one inhabitant;
- number of people commuting to towns per 1000 inhabitants;
- number of tourist beds per 1000 inhabitants.

These magnitudes have been selected in a way allowing to reflect differences ensuing from the functions being developed. They are of great interest primarily due to existing relationships between economy of a given region and development of trade. Characteristics employed in the analysis reveal the essence and character of problems they are intended to describe. However, they are not so perfect as to fully define development of functions performed by regions, which is — on one hand — due to lack of available statistical data, and — on the other hand — to lack of indices by means of which it would be possible to express these functions with a flawless precision. All the characteristics, being of equal importance for the performed analysis, are of the same value.

4. RESEARCH FINDINGS

For all the selected variables and all administrative provinces there was compiled an output matrix of taxonomic distances and on its basis a dendrite was estimated.

¹⁰ J. Fierich, *Próba zastosowania metod taksonomicznych do rejonizacji systemów rolniczych w woj. krakowskim* (An Attempt at Application of Taxonomic Methods for Regionization of Agricultural Systems in Cracow Administrative Province), „Myśl Gospodarcza” 1957, No. 1, p. 75.

The following regrouping of regions was obtained after division of the dendrite:

I — Olsztyn, Koszalin, Szczecin, Elbląg provinces. These areas are characterized with a big share of socialized arable land, similarities in performed tourist functions (in some parts the provinces possess unique tourist attractions), and also similar level of industrialization.

II — Słupsk, Gorzów, Piła, Bydgoszcz, Toruń and Poznań provinces. These administrative provinces are similar as regards the level of effects obtained through implementation of the agricultural function. There can be also observed some similarity in the size of individual farms and level of employment of rural area inhabitants in towns (only the Poznań province shows a higher index here). The provinces belonging to this group are also characterized with similarities in development of tourist facilities.

III — Wrocław, Legnica, Kalisz, Lublin, Płock and Leszno provinces. These areas boast a relatively strongly developed individual farming system. They possess also relatively strong links between villages and industries (to a smaller extent in the Płock and Leszno provinces), while their tourist function is rather insignificant.

IV — Zielona Góra, Opole, Wałbrzych and Gdańsk administrative provinces. They are characterized with strongly developed individual farms (even despite the fact that they do not belong to the biggest farms in the country), a similar share of socialized land (distinct supremacy of the Gdańsk province). Within these provinces there are either one or two flourishing industrial centres employing inhabitants of villages. These provinces possess, moreover, regions which are largely utilized for tourist and recreation purposes (to a smaller extent in the Opole province).

V — Central, eastern, and south-east territories form the most numerous cluster, grouping over twenty administrative provinces (they are in alphabetical order: Bielsko Podlaskie, Białystok, Chełm, Ciechanów, Częstochowa, Kielce, Konin, Kraków, Łomża, Ostrołęka, Piotrków, Przemyśl, Radom, Rzeszów, Siedlce, Sieradz, Skierniewice, Tarnobrzeg, Tarnów, Wrocław, Zamość). They perform an agricultural function (with a decisive supremacy of individual farms) but they do not perform, to any larger degree, a tourist function (with the exception of the Kraków and Kielce provinces). Apart from the above mentioned similarities these areas are characterized with some differentiation. As we move south, the splitting up of the agrarian structure grows along with ties between the rural population and industry. That becomes especially pronounced if we compare poorly industrialized provinces such as Łomża and Ciechanów with other provinces included into this

group on the basis of the biggest similarity e.g. Rzeszów and Kraków.

VI — The most industrialized provinces are those of Warszawa, Łódź, and Katowice. They are distinctly different from the other provinces and they also differ between them. They have been grouped together according to the principle of the biggest similarity although they are differentiated in the sphere of the tourist function as performed by them (it is best developed in the Warszawa province) or the agricultural function (the Katowice province appears to be clearly different from the other provinces, as the rural population living here is most loosely connected with the agricultural work).

VII — Provinces of Krosno, Jelenia Góra and Bielsk Podlaski. They are characterized with a relatively big development of the tourist function, although they perform the remaining functions to various degrees. And thus the Jelenia Góra province shows predominance of agriculture, while industry is most developed in the Bielsk Podlaski province.

VIII — Provinces of Nowy Sącz and Suwałki. This grouping may be questioned most. Although these provinces show the biggest similarities, they simultaneously differ between them. The similarity results from strong development of the tourist function which is here performed by the whole area of each province and not only by some regions (this accounts for biggest differences between these two provinces and the remaining ones). The Nowy Sącz province possesses strong ties with industrial centres of neighbouring provinces. It also possesses its own industrial facilities. The agricultural function is poorly developed here. In these respects this province differs from the Suwałki province, which apart from the tourist function performs also the agricultural function showing one of the lowest indices of industrialization in Poland. Taking into account the specific characteristics of the two provinces, the Suwałki province could be included in group I and the Nowy Sącz province to group VII, thus emphasizing their differences. It was, however, considered necessary to carry out the typology on the basis of consistent observance of the fixed criteria, and accordingly they were treated as a separate area.

5. FINAL REMARKS

The completed typology provides a basis allowing to determine conditions of trade operation in a given province and of differences between particular provinces. The rural areas are relatively strongly differentiated as regards the functions performed by them. This leads to deeper segmentation of demand for marketing services. The processes occurring here call for adaptation of trade to spatially differentiated demand. In

this situation it appears necessary to counter a trend towards maintaining the territorial cohesion of segments or reducing the number of segments to a certain minimum or maximum in order to achieve the operational effectiveness expressed through effectiveness in the economic activity. Such structure may prove especially dangerous in conditions of the monopolistic position of a company, the management of which intends to provide trade services for some part of the population by means of trade units exclusively from the point of view of ensuring the economic profitability or operations¹¹.

The main problem is how to use the distinguished segments in the strategy of trade companies. Perhaps the most important implication for the marketing management is the fact that consumer requirements are not stable in time and consequently the practical principles which are developed in relation to target market segments may appear to be less adapted in the future. Decisions based on such principles may fail to bring the expected benefits. It calls for differentiation of guidelines concerning modification of the trade network due to the fact that benefits derived from the present characteristics of segments are changing in time as a result of instability of segments¹².

Proper delimitation of areas possessing a similar form of functions allows to determine the internal conditions of trade activity within these areas and material and financial means needed to improve this activity. It constitutes also one of basic criteria in allocating economic tasks to be accomplished by trade as well as in specifying the hierarchy of declared needs. Typology of areas performing different functions creates prerequisites for a trade policy which takes account of territorial differences. It also paves the way for further researches on differences between these areas encompassing a number of other factors being affected by the performed function.

Within the framework of the distinguished types of regions in a consecutive stage of the market typology (division into market segments) there are taken into account further criteria being more closely connected with the offered assortment and based on determination of more individual characteristics of a given population of buyers. This will allow to outline directions of further development of marketing services in rural areas and elaborate a strategy based on the level of development and differentiation of demand among inhabitants of villages.

¹¹ See V. Mahajan, A. K. Jain, *Approach to Normative Segmentation*, „Journal of Marketing Research” August 1978, p. 338.

¹² See A. Shoma, *Management and Consumers in Era of Stagflation*, „Journal of Marketing” July 1978, No. 3, p. 52.

*Janusz Zrobek*TYPOLOGIA OBSZARÓW WIEJSKICH JAKO JEDNA Z PRZESŁANEK
ORGANIZACJI ZAOPATRZENIA

Odmienność przestrzennych warunków działalności handlu wiejskiego zmusza do szukania możliwości wykazania zróżnicowania obszarów wiejskich w zakresie potrzeb ich mieszkańców w odniesieniu do obsługi handlowej. W celu ukazania dywersyfikacji wsi w tym zakresie wykorzystano typologię obszarów wiejskich opartą o główne funkcje gospodarcze. Założono, że w zależności od kombinacji podstawowych funkcji gospodarczych w danym regionie tj. produkcji rolniczej, oddziaływania przemysłu oraz walorów turystycznych, różne są potrzeby mieszkańców kształtujące się pod wpływem powiązań i sprzężeń zwrotnych zachodzących pomiędzy różnymi funkcjami. Określenie segmentacji zapotrzebowania z punktu widzenia istniejących współzależności między ekonomiką regionu a rozwojem handlu posłuży ustaleniu kierunków dalszego rozwoju organizacji zaopatrzenia terenów wiejskich, wypracowaniu strategii działania opartej na stopniu rozwoju i zróżnicowania zapotrzebowania mieszkańców wsi.