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Assessment of Public Catering Development Key Factors in Russian Federation Regions

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Abstract

The catering sector plays a prominent and important role in the economy of developed countries, the formation of employment, the development of small and medium-sized businesses, and the development of related industries. In this regard, an inefficient infrastructure ensuring the development of the catering system generates a number of risks associated with an insufficient level of demand supply and, ultimately, the loss of competitive positions of countries and regions at the international "platform" of the tourist industry. The current trends and catering sector development parameters in RF regions are characterized by the decrease of the tourism sector share in the turnover generation of provided goods and services, and the level of the catering infrastructure development that does not correspond to the trends of the dynamically developing tourist market, and European development parameters, weak investment activity, etc. These factors determine the need to develop the strategic models of the catering system development in RF regions, adapted to the current and future trends of the tourist industry development, as well as taking into account the changing macroeconomic trends of the national economy, which are formed under the influence of conjuncture internal and external factors and affecting the population consumer activity in the catering industry.

Keywords: Regional catering system; Cluster analysis; Comparative analysis of catering system development; RF regions; The concept of catering market development; Competitiveness.

1. Introduction

The model of regional catering system development should be based, in many ways, on the nature and the development of the tourist sector trends (Borts and Stein, 1964; Gayazov and Elshin, 2016; Orlova, 2015), as well as on the factors of population consumer activity development (Malyshkov, 2005; Waits, 2000), which take into account sociocultural factors, determining the culture of society during the consumption of goods and services in the catering sector. It is important to take into account and compare the current parameters of RF public catering system development with reference (target) values during the model design, which can be considered as the indicators of the economy considered sector development in leading European countries. The need for such an approach is determined by the criterion of convergence in terms of consumer activity in the catering industry within the European Union countries and Russia, which, on the one hand, establishes the overall target possible criterion of the industry development, and on the other hand, predetermines the common set of unknowns included in the system of equations, where the reference level of the catering system development serves as the indicator.

2. Methods

Cluster analysis can act as a toolkit for the regional catering system strategic development in Russia. Its functionality allows you to define the homogeneous groups of regions according to similar development parameters (Chernov, 2003) which characterize the effectiveness of a public catering system development in a region and, thus, to detect weak and strong positions using the methods of comparative analysis.

In this study they selected the following clustering signs (factors):

1) The share of business entities operating at the catering market in the total number of region enterprises, % (F1);

2) The share of employees at the enterprises operating at the catering market from the total number of employees in the region (F2);

3) The share of business entity turnover operating in the catering market from the turnover of the region, % (F3);

4) The share of the tourism sector in the generation of catering turnover in the regions - the leaders in terms of tourism attractiveness development (F4).

This choice is conditioned by several reasons, the main of which are characterized by:

a) the possibility of the analyzed indicator comparison with conventionally "reference" values;

b) the structural-logical scheme for catering sector effectiveness and competitiveness study, described in the previous paragraphs.

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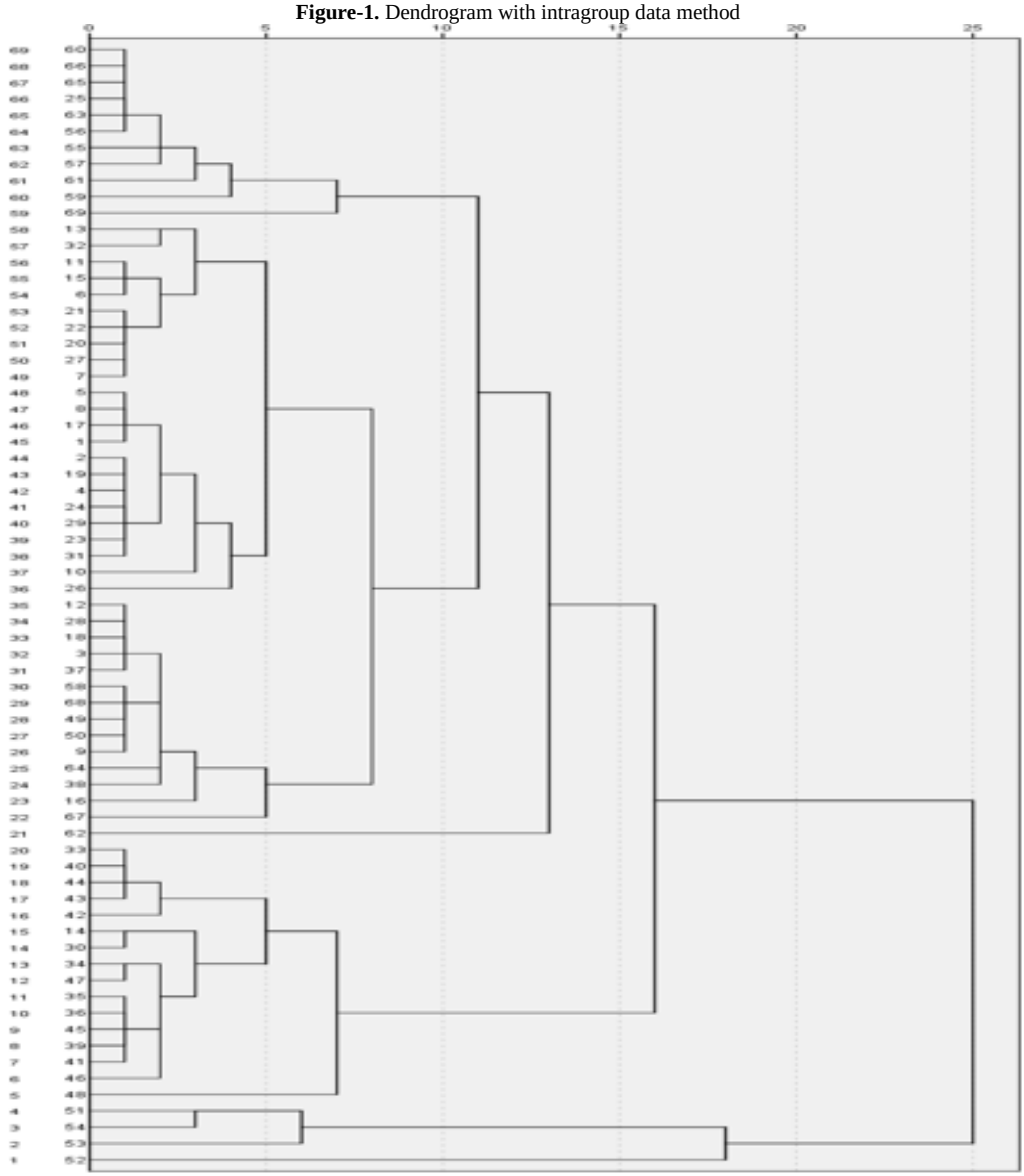
The data revealing the values of indicators in the context of the studied factors and RF regions are presented in the corresponding statistical annexes published by Rosstat.

Hierarchical cluster analysis was chosen as the main instrument for RF region clustering. During the calculations and estimates, they used SPSS information-automated package. The preliminary results of the calculations allowed to determine the number of enlarged groups (clusters) with similar characteristics of the catering system development (Figure 1).

Figure-1. Dendrogram with intragroup data method



The data presented on the dendrogram demonstrate the main regularities of cluster development located at a relatively large distance from each other. The interpretation of hierarchical analysis results demonstrates the need to create four clusters.

Having carried out the final stage of cluster analysis using the k-means method, the values of the final cluster centers were obtained, as well as the values of the distances between the final centers of clusters (Table 1, 2). Thus, table 3 presents the group of RF regions in accordance with the generalizing signs of public catering regional sector development.

Table-1. Cluster End Centers

	Cluster			
	1	2	3	4
VAR1	1,15	2,56	2,18	1,08
VAR2	,73	1,42	1,24	,58
VAR3	1,31	4,49	1,26	2,51
VAR4	,23	,30	,28	,16

Table-2. Distances between cluster end centers

Cluster	1	2	3	4
1		3,544	1,153	1,215
2	3,544		3,260	2,612
3	1,153	3,260		1,802
4	1,215	2,612	1,802	

The quality assessment of RF region classification statistical model, on the basis of which further conclusions are developed, is carried out according to the following formula:

Rcp2 = SUMj[Rj2*nj/n]+rcp2, j=1..k

where:

D is the efficiency of implemented clustering;

Rcp2 is the sum of the mean squares of deviations from the mean value for all variables involved in clustering. It is also the average square of the distance from each observation to a common center (common average). It is also the total dispersion of the variables involved in clustering (calculated by general dispersion formula, with the denominator equal to n).

Rj2 is the sum of the distance squares from the center of the jth cluster to the common center.

nj - the number of observations determined by the results of clustering in the jth cluster.

n is the total number of observations

rcp2 is the average distance square from each observation to the center of its cluster across all clusters.

According to the results of the implemented calculations, they established that the assessment of the carried out clustering reliability is estimated at 70.3%.

Table-3. Affiliation of RF regions to the clusters, characterizing the level of catering system development

	The share of business entities operating in the catering market from the total number of enterprises in the region, %	**The proportion of people employed at the enterprises operating in the catering market from the total number of people employed in the region, %**	**The share of business entity turnover operating at the catering market from the region turnover, %**	**The share of the tourism sector in regional catering turnover generation - the leaders in terms of tourism attractiveness development**	**Belonging to the cluster**
Belgorod region	0,76	0,4	0,64	0,19	1
Voronezh region	0,84	0,47	1,12	0,21	1
Kostroma region	1,51	0,94	1,62	0,14	1
Kursk region	0,91	0,39	1,08	0,11	1
Lipetsk region	0,99	0,41	0,82	0,18	1
Ryazan region	1,1	0,77	1,12	0,19	1
Tambov region	1,26	0,47	1,43	0,15	1
Tula region	0,94	0,48	0,71	0,2	1
Yaroslavskaya region	1,48	1,13	1,56	0,39	1
Moscow	0,64	1,19	0,71	0,3	1
Komi Republic	1,43	0,73	0,98	0,16	1
Arkhangelsk region	1,47	0,69	1,43	0,2	1
Vologodskaya region	1,17	0,9	0,63	0,24	1
Kaliningrad region	0,89	1,04	1,72	0,39	1
Murmansk region	1,4	0,76	1,18	0,22	1
St. Petersburg	1,2	1,74	1,71	0,24	1
Volgograd region	1,13	0,52	0,82	0,26	1
Republic of Bashkortostan	1,41	0,76	1,59	0,25	1
Republic of Mordovia	0,81	0,38	1,19	0,15	1

Perm region	1,1	0,7	1,6	0,18	1
Nizhny Novgorod region	1,24	0,74	1,38	0,43	1
Samara region	1,05	0,79	1,36	0,29	1
Saratov region	0,91	0,4	1,42	0,2	1
Ulyanovsk region	1,09	0,55	1,18	0,23	1
Chelyabinsk region	1,03	0,7	0,12	0,26	1
The Republic of Khakassia	1,28	0,66	1,66	0,13	1
Altai region	1,56	0,84	1,43	0,2	1
Kemerovo region	1,04	0,43	1,03	0,26	1
Novosibirsk region	0,72	0,81	1,64	0,39	1
Tomsk region	0,63	0,48	1,44	0,15	1
Sakhalin region	1,51	0,96	0,67	0,12	1
Oryol Region	1,09	0,48	1,79	0,1	1
Smolensk region	1,03	0,58	1,77	0,15	1
The Republic of Adygea	1,48	0,76	1,78	0,11	1
Rostov region	1,26	0,61	1,92	0,3	1
Sverdlovsk region	1,1	0,96	1,95	0,39	1
Primorsky Krai	1,55	1,11	1,78	0,36	1
Khabarovsk region	1,59	1	1,92	0,3	1
Stavropol region	1,99	0,97	4,34	0,36	2
Altai Republic	3,11	2,41	5,18	0,5	2
The Republic of Buryatia	2,88	1,41	4,43	0,26	2
Tyva Republic	2,25	0,88	4,01	0,09	2
Tyumen region	1,72	0,91	0,9	0,35	3
Vladimir region	2,04	1,09	1,41	0,24	3
Kaluga region	2,15	1,26	0,7	0,3	3
Moscow region	1,67	1,43	1,29	0,37	3
Tver region	1,72	1,11	1,62	0,26	3
Republic of Karelia	2,23	1,82	1,37	0,26	3
Leningrad region	2,02	1,07	0,83	0,37	3
Novgorod region	2,62	1,42	0,94	0,25	3
Krasnodar region	3,35	2,03	2,52	0,27	3
Republic of Tatarstan	1,91	1,27	1,16	0,33	3
Orenburg region	2,05	0,82	1,77	0,19	3
Krasnoyarsk region	1,85	1,04	0,96	0,34	3
Irkutsk region	1,94	1,16	0,82	0,39	3
Amur region	2,73	1,06	1,96	0,25	3
Magadan	1,72	1,11	1,63	0,09	3

Region					
Chukotka Autonomous District	3,13	1,25	0,23	0,15	3
Bryansk region	0,85	0,36	2,74	0,16	4
Ivanovo region	0,85	0,6	2,31	0,18	4
Astrakhan region	1,55	0,69	2,21	0,23	4
Mari El Republic	0,9	0,49	2,72	0,11	4
Udmurtia	1,1	0,57	2,12	0,19	4
Chuvash Republic	1,4	0,64	2,7	0,12	4
Kirov region	0,9	0,57	3,03	0,1	4
Penza region	0,82	0,36	2,56	0,12	4
Kurgan region	0,93	0,45	1,98	0,19	4
The Republic of Sakha (Yakutia)	0,79	0,46	2,15	0,12	4
Kamchatka Krai	1,76	1,16	3,14	0,23	4

3. Results and Discussion

Evaluating the formed clusters and their features (based on the assessment of the final centers of clusters), it is possible to determine the main integrated characteristics of catering system parameter development at RF regional level. There is the classification of RF regions below in accordance with the parameters of the studied economy sector development efficiency.

Cluster 1. This is the most "capacious" cluster, which includes 38 regions of Russian Federation. Their main characteristics are the moderate values of the analyzed indicators characterizing the effectiveness of catering system development in the context of return on invested capital (financial, resource, human, etc.). It is interesting in research aspect, that this group includes the largest subjects of Russia (such as the cities of federal importance - Moscow and St. Petersburg), which are characterized by a significant level of the tourist and recreational environment development. Using hierarchical analysis, it is possible to define this group of regions as the regions with very stable characteristics of OP system development, but without the breakthrough efficiency parameters in terms of return on invested capital. This can be traced by the ratio of turnover growth rates for regional catering systems and the number of enterprises operating in the industry (for example, the regions of Cluster 2 have significantly higher values of "efficiency").

Thus, it can be stated that the regions of Cluster 1 have a significant potential for efficiency increase, which is especially important for the entities with the significant indicators of related economic activities (for example, the tourism industry).

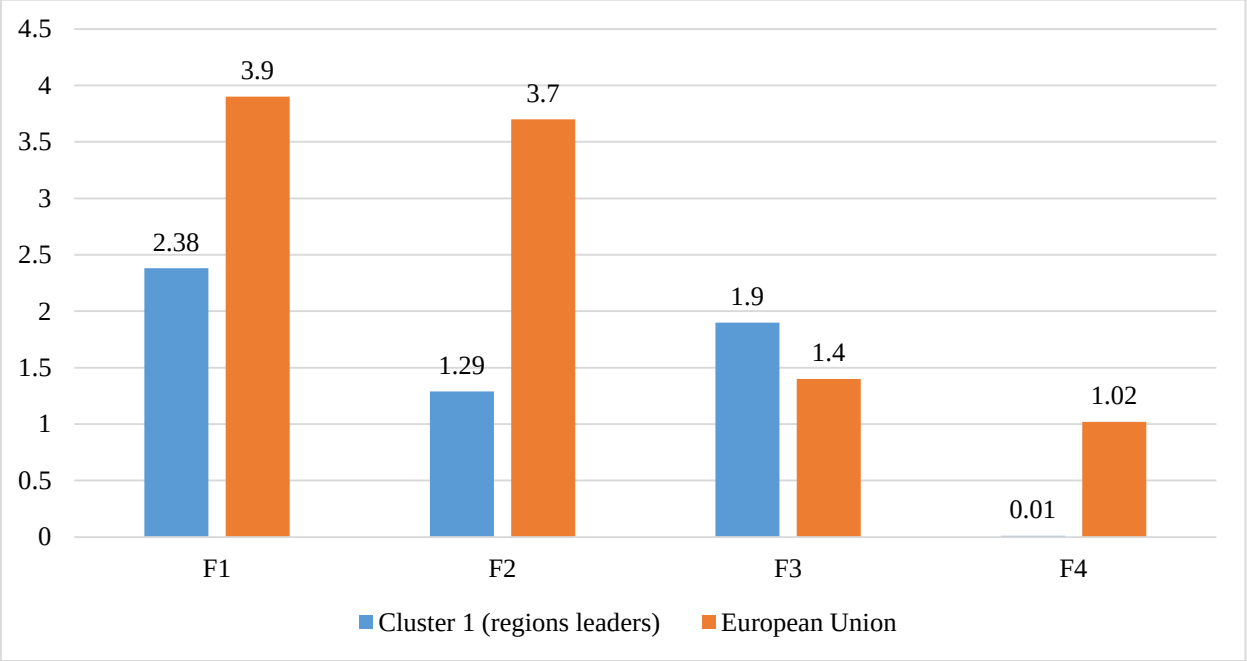
Cluster 2. The regions included in this cluster are characterized by the maximum parameters of the catering system development, primarily from the point of view of the “resource-return” ratio. Meanwhile, it should be noted that their leading positions on all-Russian background do not mean the compliance with the “reference” parameters, which we considered previously during the evaluation of the catering sector development efficiency in the countries with developed economies. Thus, even despite the dominant development in the context of the evaluations under study, this group of regions needs to intensify the decisions and the directions for the development of the studied economy sector.

Cluster 3. The regions of this cluster have one of the weakest indicators characterizing the "efficiency" of the industry in terms of return on invested resources. Despite one of the leading places in Russia in terms of the number of market participants (The share of business entities operating at the catering market, from the total number of regional enterprises, %), the generated turnover of the industry is very low in relation to the practice of other RF subjects that are included in the clusters of a higher hierarchical order. This may indicate either an increased level of the shadow economy in this type of economic activity (which is reflected in real volume of OP turnover decrease), or an inefficient organization of business processes on the part of market participants. Besides, this state of affairs can be explained by the specific consumption model in the group of regions under consideration, as well as by the excessive number of economic entities operating in the market under study. On the one hand, it creates the conditions for a high level of competitive environment, on the other hand, it characterizes the incompleteness of the catering market development model.

Cluster 4. This group includes the regions that demonstrate very high indicators of the industry efficiency in the context of the identified significant indicators of return on invested resources. So, for example, the regions of this cluster, being characterized by very significant values of the industry development in terms of industry turnover share from the total turnover of the region, have extremely moderate values in terms of the “Share of business entities operating in the catering market from the total number of enterprises in the region %". This largely indicates

that a relatively small number of market participants ("sellers") generates significant catering turnovers. Taking into account the high rates of efficiency, it can be predicted that, if trends continue, the regions will become a group of leaders soon. An extremely important aspect is that the contribution of the tourism industry plays a very limited role in the development of OP sector for the regions of this group (Figure 2).

Figure-2. Comparative evaluation of the catering system development in Russian Federation and the European Union, %



4. Conclusions

According to the results of cluster analysis, they determined the groups of regions with various generalized characteristics reflecting one or another form of efficiency of the public catering system. They determined the regions - the leaders in terms of development, as well as regions with weaker characteristics. At the same time, despite the identified regional differentiation, there is a number of characteristic signs that unite all regions of Russian Federation into one enlarged cluster. The most important of them, in the context of the issues studied in this study, is that they are all far behind the so-called reference values, to which they attribute the parameters of the catering system development in developed, primarily European countries. Even the so-called RF leading regions demonstrate, on the average, by the absolute majority of performance indicators, a significant lag.

5. Summary

The results of the study suggest that at the present stage of the public catering system development in Russia there is a need to intensify efforts, tools and methods, as well as to develop targeted programs for the development of the considered economy sector taking into account the regional specific features in order to ensure the satisfaction of growing demand as a result of consumption pattern transformation at the OP market under the influence of institutional and market factor transformations expressed in the growth of population life quality.

At the same time, the development of management decisions aimed at the identification of key trends for the development of the catering system should not be based on the principles of common mechanisms and tools that influence the activation and an intensive development of the system (Bezrukikh *et al.*, 2015; Furubotn and Richter, 1998; Gayazov *et al.*, 2016). It is necessary to take into account the current trends characteristic of a particular region, the structure of consumption in the catering sector, as well as the features and the factors unique to the regions and which have growth potential. The implementation of this approach in relation to each region of Russian Federation requires the use of significant time resources and the processing of a significant amount of statistical information. However, given that the implementation of the specified scope of work is not an end in itself, and the fact that one of the main goals of the dissertation research is the development of methodological approaches to the identification of promising and most relevant areas of the catering system development at the regional level implemented in the "enlarged coordinate" system, through the development of implementation mechanisms and the tools for the regions included in the enlarged groups with similar characteristics (clusters).

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