

CONSILIUM SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ

Współpraca Europejska
Podejście Naukowe & Zastosowane Technologie

ISSN 2449-7320



EUROPEAN COOPERATION

Scientific Approaches and Applied Technologies

Warszawa 2019

Nº 4(44) 2019

RADA NAUKOWA

Przewodniczący Rady Naukowej:

Dr hab. (Ekonomia), **OLEKSANDR MELNYCHENKO**, The London Academy of Science and Business, Wielka Brytania, Londyn

Członkowie Rady Naukowej:

Dr (Inżynieria), **BESTOUN S. AHMED**, College of Engineering / Salahaddin University, Erbil, Kurdistan, Irak

Prof., Dr hab. (Inżynieria), **ARTUR BARTOSIK**, Politechnika Świętokrzyska, Kielce, Polska

Prof., Dr hab. (Ekonomia), **LINO BRIGUGLIO**, Islands and Small States Institute, University of Malta, Msida, Malta

Dr hab. (Ekonomia), **MAREK CHRZANOWSKI**, Szkoła Główna Handlowa, Warszawa, Polska

Prof., Dr (Ekonomia), **TSVETELINA ALEXANDROVA GANKOVA-IVANOVA**, Technical University of Gabrovo, Sofia, Bułgaria

Prof., Dr (Ekonomia), **SHALVA GOGIASHVILI**, Ivane Javakhishvili Tbilisi State University, Tbilisi, Gruzja

Prof., Dr hab. (Ekonomia), Dr. h.c. mult., **FRANZ PETER LANG**, University Braunschweig, Braunschweig, Niemcy

Dr (Ekonomia), **ALEKSY KWILIŃSKI**, Instytut Rozwoju Współpracy Międzynarodowej, Poznań, Polska

Prof., Dr hab. (Ekonomia), **IRENA MACERINSKIENĖ**, Mykolas Romeris University, Wilno, Litwa

Prof., Dr (Ekonomia), **ALEXANDER MASHARSKY**, Baltic International Academy, Ryga, Łotwa

Dr hab. (Politologia), Prof. ndzw. **DONAT JERZY MIERZEJEWSKI**, Państwowa Wyższa Szkoła Zawodowa im. Stanisława Staszica w Pole, Piła, Polska

Dr (Ekonomia), **RADOSŁAW MIŚKIEWICZ**, Luma Investment, Łaziska Górne, Polska

Prof., Dr hab (Ekonomia), **BORYS SAMORODOV**, Banking University, Charków, Ukraina

Dr hab. (Ekonomia), **NADIYA YURKIV**, National Institute for Strategic Studies, Kijów, Ukraina

Dr hab. (Ekonomia), **HENRYK DŻWIGÓŁ**, Politechnika Śląska, Gliwice, Polska

Wydawca:

CONSILIUM SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ

WSPÓŁPRACA EUROPEJSKA

NR 4(44) 2019

Czasopismo jest zarejestrowane w Sądzie Okręgowym w Warszawie pod numerem 19258

ISSN (PRINT) 2449-7320

Czasopismo naukowe WSPÓŁPRACA EUROPEJSKA jest umieszczone i indeksowane w bazach danych naukometrycznych:

- ERIH PLUS
- Biblioteka Narodowa w Polsce
- Polska Bibliografia Naukowa (PBN)
- Index Copernicus
- Citefactor
- International Institute of Organized Research (I2OR)
- Google Scholar (GS)

Adres strony internetowej:

www.european-cooperation.eu

www.clmconsulting.pl

www.facebook.com/clmcstg

Adres do korespondencji:

Redakcja Czasopisma naukowego
WSPÓŁPRACA EUROPEJSKA
Consilium Sp. z o.o.
ul. Marszałkowska 58
00-545 Warszawa, Polska

Redaktor naczelny -
Aleksy Kwiliński

editor@european-cooperation.eu

Reklama w czasopiśmie:
office@clmconsulting.pl



SCIENTIFIC COUNCIL*Head of Scientific Council:*

Dr. hab. (Economics), **OLEKSANDR MELNYCHENKO**, The London Academy of Science and Business, Great Britain, London

Members of the Scientific Council:

Dr. (Engineering), **BESTOUN S. AHMED**, College of Engineering / Salahaddin University, Erbil, Kurdistan, Iraq

Prof., Dr. hab. (Engineering), **ARTUR BARTOSIK**, Kielce University of Technology, Kielce, Poland

Prof., Dr. hab. (Economics), **LINO BRIGUGLIO**, Islands and Small States Institute, University of Malta, Msida, Malta

Dr. hab. (Economics), **MAREK CHRZANOWSKI**, SGH Warsaw School of Economics, Warsaw, Poland

Prof., Dr. (Economics), **TSVETELINA ALEXANDROVA GANKOVA - IVANOVA**, Technical University of Gabrovo, Sofia, Bulgaria

Prof., Dr. (Economics), **SHALVA GOGIASHVILI**, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

Prof., Dr. habil. (Economics), Dr. h.c. mult. **FRANZ PETER LANG**, University Braunschweig, Braunschweig, Braunschweig, Germany

Dr. (Economics), **ALEKSY KWILIŃSKI**, Institute for International Cooperation Development, Poznan, Poland

Prof., Dr. hab. (Economics), **IRENA MACERINSKIENĖ**, Mykolas Romeris University, Vilnius, Lithuania

Prof., Dr. (Economics), **ALEXANDER MASHARSKY**, Baltic International Academy, Riga, Latvia

Prof., Dr. hab. (Political Sciences), Prof. ndzw. **DONAT JERZY MIERZEJEWSKI**, Stanisław Staszic University of Applied Sciences in Piła, Piła, Poland

Dr. (Economics), **RADOSŁAW MIŚKIEWICZ**, Luma Investment S.A., Łaziska Górne, Poland

Prof., Dr. hab. (Economics), **BORYS SAMORODOV**, Banking University, Kharkiv, Ukraine

Dr. hab. (Economics), **NADIYA YURKIV**, National Institute for Strategic Studies, Kyiv, Ukraine

Dr. hab. (Economics), **HENRYK DŹWIGÓŁ**, Politechnika Śląska, Gliwice, Poland

Publisher:

CONSILIUM LIMITED LIABILITY COMPANY

EUROPEAN COOPERATION

Vol. 4(44) 2019

Scientific journal is registered in District Court in Warsaw for the number 19258

ISSN (PRINT) 2449-7320

Scientific journal**EUROPEAN COOPERATION**

is included and indexed in the international informational and scientometric data bases:

- ERIH PLUS
- National Library of Poland
- Polish Scholarly Bibliography (PBN)
- Index Copernicus
- Citefactor
- International Institute of Organized Research (I2OR)
- Google Scholar (GS)

Web on:

www.european-cooperation.eu

www.clmconsulting.pl

www.facebook.com/clmcstg

Address for correspondence:

Editorial team of Collection
EUROPEAN COOPERATION
Consilium LLC
Marszałkowska str. 58
00-545 Warsaw, Poland

Chief editor of the Collection -
Aleksy Kwiliński

editor@european-cooperation.eu

Advertising in the collection:
office@clmconsulting.pl



SPIIS TREŚCI

ANALYSIS OF THE GEORGIAN TEA BRANDS Maia Seturi, Tamari Todua (ENG)	7
METHODOLOGICAL PRINCIPLES OF MARKET SEGMENTATION OF VEGETABLE PRODUCTS USING CLUSTER ANALYSIS IN THE BUSINESS ENVIRONMENT Alla Gumeniuk, Oksana Shkolenko, Tetiana Kharchuk, Viktoryia Melnik (ENG)	15
THE ACTUALITY OF POST-BUREAUCRATIC PARADIGM BY M. BARZELAY AND B. ARMAJANI IN THE CONTEXT OF SERVICE-ORIENTED PUBLIC ADMINISTRATION REFORMS Liudmyla Demchenko (ENG)	24
НЕОЛІБЕРАЛІЗМ ЯК НАПРЯМ ПОСТМОДЕРНОГО ПУБЛІЧНОГО УПРАВЛІННЯ Oleksandr Ghromadetskyi (UKR)	31
ОСОБЛИВОСТІ КРИМІНАЛЬНО-ПРАВОВОЇ ОХОРОНИ ЕКОНОМІЧНИХ ТА ІНШИХ ІНТЕРЕСІВ СУБ'ЄКТІВ ПРАВА ІНТЕЛЕКТУАЛЬНОЇ ВЛАСНОСТІ НА УКРАЇНСЬКИХ ЗЕМЛЯХ ЗА КРИМІНАЛЬНИМ УЛОЖЕННЯМ 1903 РОКУ Oksana Korotiuk (UKR)	40
LEGISLATIVE BASES OF PROFESSIONAL-QUALIFICATION COMPLEX FORMATION OF HUMAN POTENTIAL IN THE SYSTEM OF CIVIL SERVICE OF UKRAINE Yevhen Grebonozhko (ENG)	51
ФІНАНСОВА МОДЕЛЬ ІНВЕСТИЦІЙНОГО ПРОЕКТУ ТА ОСОБЛИВОСТІ ЇЇ ВИКОРИСТАННЯ У ПРОЕКТНОМУ ФІНАНСУВАННІ Ievgen Tishchenko (UKR)	65
IDENTIFICATION OF MANAGEMENT FUNCTIONS OF TRANSACTION COSTS IN RENTAL RELATIONS Sergiy Bardash, Tatiana Osadcha (ENG)	79

TABLE OF CONTENTS

ANALYSIS OF THE GEORGIAN TEA BRANDS Maia Seturi, Tamari Todua (ENG)	7
METHODOLOGICAL PRINCIPLES OF MARKET SEGMENTATION OF VEGETABLE PRODUCTS USING CLUSTER ANALYSIS IN THE BUSINESS ENVIRONMENT Alla Gumeniuk, Oksana Shkolenko, Tetiana Kharchuk, Viktoryia Melnik (ENG)	15
THE ACTUALITY OF POST-BUREAUCRATIC PARADIGM BY M. BARZELAY AND B. ARMAJANI IN THE CONTEXT OF SERVICE-ORIENTED PUBLIC ADMINISTRATION REFORMS Liudmyla Demchenko (ENG)	24
NEOLIBERALISM AS AN APPROACH IN POSTMODERN PUBLIC ADMINISTRATION Oleksandr Ghromadetskyi (UKR)	31
FEATURES OF CRIMINAL AND LEGAL PROTECTION OF ECONOMIC AND OTHER INTERESTS OF SUBJECTS OF THE INTELLECTUAL PROPERTY RIGHTS ON UKRAINIAN LANDS UNDER THE CRIMINAL PROVISIONS OF 1903 Oksana Korotiuk (UKR)	40
LEGISLATIVE BASES OF PROFESSIONAL-QUALIFICATION COMPLEX FORMATION OF HUMAN POTENTIAL IN THE SYSTEM OF CIVIL SERVICE OF UKRAINE Yevhen Grebonozhko (ENG)	51
FINANCIAL MODEL OF INVESTMENT PROJECT AND PECULIARITIES OF ITS USE IN PROJECT FINANCING Ievgen Tishchenko (UKR)	65
IDENTIFICATION OF MANAGEMENT FUNCTIONS OF TRANSACTION COSTS IN RENTAL RELATIONS Sergiy Bardash, Tatiana Osadcha (ENG)	79

Alla Gumeniuk

PhD (Economics),
Uman branch of Private Educational Establishment «European university»,
Associate Professor of the Department of Economics and Business
Ukraine, Uman
allagumen@ukr.net
ORCID ID: 0000-0002-4333-0478

Oksana Shkolenko

PhD (Economics),
Uman branch of Private Educational Establishment «European university»,
Associate Professor of the Department of Economics and Business
Ukraine, Uman
shkolenko_oksana@ukr.net
ORCID ID: 0000-0003-2792-1523

Tetiana Kharchuk

PhD (Economics),
Private Educational Establishment «European university»,
Associate Professor of the Department of Economics
Ukraine, Kyiv
dtv75@i.ua
ORCID ID: 0000-0001-5563-3268

Viktoryia Melnik

Kyiv National University of Trade and Economics,
Lecturer of the Department of Economics and Finance of the enterprise
Ukraine, Kyiv
victoryetual@ukr.net
ORCID ID: 0000-0001-5512-536X

METHODOLOGICAL PRINCIPLES OF MARKET SEGMENTATION OF VEGETABLE PRODUCTS USING CLUSTER ANALYSIS IN THE BUSINESS ENVIRONMENT

Abstract. The cluster model of business organization has several advantages. In the presence of a cluster, marketing structures, which are created for the purpose of marketing support for the activities of enterprises taking into account the infrastructure of the vegetable market, are formed.

This approach allows small-scale agricultural enterprises to avoid the growth of conditionally fixed costs and to increase performance of activity. At the same time, it's important to understand that clustering enables producers of vegetable products not only to jointly promote their products, but also to form an effective marketing support system for the activities of each enterprise.

In this article authors have formed the essence of cluster analysis on the basis of the research of domestic and foreign scientists. The methodology of cluster analysis is generalized for vegetable enterprises. The use of methods of cluster analysis is proposed for the study of the regional vegetable market and consumer groups of vegetable products. Analytical and graphical possibilities of application of the software package

statistica are shown for multivariate grouping of consumers of vegetable products. A dendrogram of consumer preferences of vegetable products in a supermarket has been constructed.

The authors used hierarchical clustering of consumers of vegetable products on the basis of Ward's method, as an agglomeration plan. It is proved that the proposed methods should be used in the further practical activity of marketing services at the enterprises of the vegetable industry and their integration formations.

The article justifies expediency the inclusion of psychographic and behavioral features in the segmentation of the market of vegetable products with cluster analysis, which will enable the marketing service to take into account the needs and demands of consumers in detail, establish the degree of their loyalty that is, the relation to vegetable production, its packaging and qualitative characteristics. The control of this technique is important not only for the marketer who carries out marketing researches, but also for employees of the marketing department of a small vegetable company.

Keywords: cluster analysis, marketing services, clustering, vegetable products, market segments, consumer

Formulas: 0, fig.: 2, tabl.: 3, bibl.: 15

JEL Classification: Q13, M31, C10

Introduction. Grouping and classification are statistical methods for the distribution of homogeneous and heterogeneous aggregates into certain groups according to essential features, which are widely used in biology, psychology, sociology, economics, management, etc. Multidimensional grouping can be done on the basis of cluster analysis. Clustering allows you to explore a large amount of information which concerns a large number of various features, characterizing a set of objects, and compressing this information into convenient, visual dimensions [Electronic textbook on statistics. 2001]

Cluster analysis (taxonomy, pattern recognition) consists of different methods of classification, the main purpose of which is to divide a set of objects into a small (known or not) number of groups, classes of homogeneous, similar objects. These groups must be formed in such a way, so that the objects contained in one class are not far from each other. Such classes are called clusters (taxon, images). Cluster (eng.) - grono, bundle, accumulation - this is a group of elements that have any common property. Taxon (eng.) - is systematized group of a certain category [Aivazian, Mkhitarian 2001].

Investigation of the concept of «cluster analysis» in various reference books, dictionaries and economic literature allows us to conclude, that there are many approaches to his interpretation. Variety of approaches to the definition of cluster analysis necessitates further consideration of this issue.

Literature review and the problem statement. The authors aim to study the application of cluster analysis in the analysis of the regional vegetable market for the purpose of polling consumers of vegetable products.

According to the results of the analysis of literary sources, it was clarified that scientists devote much attention to the study of theoretical and practical aspects application of cluster analysis methods. It should be noted that the scientists not enough attention is paid to the application of methods of cluster analysis to solve problems that arise every day before producers of agrarian products.

Results of the research of the essence of the concept of cluster analysis reflected in the works of domestic and foreign scientists.

So, according to Oldenderfer M., cluster analysis is a set of multidimensional statistical procedures, which allow to sort elements of the system in homogeneous groups [Oldenderfer, Blaspeid 1989].

Bondarenko O. believes that cluster analysis - is a multi-dimensional statistical procedure that collects data containing information on the selection of objects and then arranging objects in relatively homogeneous groups (Q - clustering, or Q - technique, cluster analysis itself) [Bondarenko, Slesare 2011].

Kupalova G. argues that the cluster analysis is a multi-dimensional statistical survey method, which includes data collection containing information about selective objects and arranging them in a relatively homogeneous groups similar to each other [Kupalova 2008].

Savitskaya V. generalizes that the cluster analysis is a set of methods, approaches and procedures developed to solve the problem of formation of homogeneous classes in an arbitrary area of concern [Savitskaya 2012].

Research results. Methods of cluster analysis allow to solve the following tasks [Savitskaya 2012]: breakdown of the initial set of objects on a relatively small number of areas grouping (clusters), so that the elements of one cluster are as close as possible to each other; identification of the structure of the totality of the objects under study.

So, cluster analysis - these are methods that are used when classifying objects in relatively homogeneous groups (clusters). The execution of cluster analysis is divided into six stages: problem formulation (selected variables set allows you to describe the similarity between objects); choice of measure of dispersion (choice of method for measuring distance or degree of similarity); choice of clustering method (clusterization methods can be hierarchical or non-hierarchical); deciding on the number of clusters; interpretation and profiling of clusters; validity estimation of clustering.

To improve the performance of marketing services and estimating the size of vegetable market segments it is recommended to use cluster analysis [Yashkina 2008]. Dealing with this technique is important not only for the marketer, who conducts relevant research, but also for employees of the marketing department of a small vegetable enterprise. In addition, using cluster analysis market segmentation can be done by psychographic, geographical and behavioral characteristics.

Ideal marketing concept is achievement in the market of competitive advantages, based on the primary attention to the needs and wishes of consumers, constantly changing and transforming these needs and wishes into production and marketing solutions. Focusing on this approach can be achieved increase in profits at the expense of the most complete satisfaction of the real expectations of consumers of their products. Studying existing consumers and potential customers understanding their behavior can influence their thoughts and purchasing motives using a consumer-oriented marketing mix, which includes the development of new products, control distribution channels, and advantageous placement of goods their effective promotion and flexible pricing [Holovchenko 2009].

With this method in the city supermarket «Velyka Kyshenya» a consumer survey of vegetable products was conducted about their attitude to a particular type of product. Twenty respondents were involved in a two-stage cluster sampling.

The first stage. To perform a cluster analysis, six variables were identified, which in our opinion will allow to assess the resemblance of respondents:

V1 – I want to buy vegetable products because I want to consume everything new and best of the products of vegetable growing.

V2 – I do not care.

V3 – I want to buy vegetable products because I am following my health and the health of future generations.

V4 – I want to buy vegetable products since it is better presented and packaged.

V5 – I want to buy vegetable products because I listen to the advertising and also take into account the wishes of my relatives, parents and the advice of friends.

V6 – I do not pay attention to what kinds of vegetable products I buy because I visit this supermarket and other outlets.

The survey results are presented in table 1.

Table 1 – Data for clustering according to the survey of 20 respondents of the supermarket «Velyka Kyshenya» for the desire to consume vegetable products

Respondent number	V1	V2	V3	V4	V5	V6
1	2	3	4	5	6	7
1	3	5	3	1	3	2
2	4	2	4	5	4	5
3	5	4	4	2	2	1
4	6	4	7	4	6	4
5	2	1	4	6	5	4
6	6	4	7	3	5	4
7	2	2	5	4	4	7
8	6	4	3	3	7	2
9	7	2	7	4	6	3
10	3	2	3	6	4	7
11	4	5	4	2	3	1
12	4	1	3	7	2	6
13	5	3	6	4	6	4
14	2	6	4	1	3	2
15	3	3	4	6	4	6
16	3	3	4	5	3	6
17	4	1	4	7	3	7
18	3	6	3	2	4	3
19	6	4	6	3	5	3
20	4	7	2	2	3	2

Source: *calculated by authors*

The degree of consent was measured on a seven-point scale (1 – disagree, 7 – I agree wholeheartedly).

Then we were determined using hierarchical clustering the optimal number of clusters for the table data [Armstrong, Kotler 2001; Gorkavy, Yarova 2004].

The second stage. The choice of the degree of dispersion was to choose the method of measurement at a distance or degree of similarity. Often, by degree of similarity, use the distance between the objects. Objects with smaller distances are more similar than objects with long distances. It is recommended to use several ways to calculate the distance between objects. In our study, as far as distance is concerned, the square of the Euclidean distance was chosen.

The third stage. Selecting a clustering method. Agglomeration clustering begins with each object in a separate cluster. Clusters are united grouping objects in each time larger clusters. This process continues until all objects become members of the same cluster.

The divine clustering begins with all objects grouped in a single cluster. The clusters divide until each object appears in a separate cluster. Usually in marketing research, for example, agglomeration methods are used communication methods, dispersion and centroid methods. In our study hierarchical clustering was used on the basis of the Ward method.

The Ward method is based on the intra-group sum of the squared deviations, which is the sum of the squares of distances between each object and the mean value in the cluster where the object is located. At the same time, at each step, these two clusters are united which cause the smallest increase in intragroup sums of squares. This method aims to merge the closest clusters [Duran, Odell 1977].

The advantage of hierarchical methods of classification is their visibility. The results of clustering are presented in the form of dendrograms (translated from the Greek dendron denotes the tree). Dendrogram clearly depicts the proximity of individual objects, clusters and in graphical form shows the sequence of their association. The dendrogram is sometimes referred to as a tree-like scheme, a cluster association tree [Bureeva 2007].

Cluster analysis is a sufficiently labor-intensive method of statistical research, so it is best to conduct it with a variety of software products. The STATISTICA (StatSoft) system in the Windows environment includes all the known methods of statistical analysis of data, which makes the research process more efficient and easy [Borovikov 2003].

The results of such clustering are shown in the table 2.

This is a so-called agglomeration plan. The first line is the first stage: includes 19 clusters. The combined respondents are 6 and 19. Last column – «next stage» – characterizes the stage on which the respondent teamed up with this cluster.

At the 9th stage, respondents with numbers 6 and 19 combined with the respondent at number 4, etc. The distance between the clusters «squared Euclidean distance» between points (Each respondent is a point in the space of 6 variables). Tree diagram (dendrogram) – graphical display of clustering results shown in Fig.1.

Table 2 – Results of hierarchical clustering vegetable consumers products supermarket «Velyka Kyshenya» based on the Ward method

Number of respondent	United clusters		The distance between clusters (Coefficient)	The stage at which the cluster appeared for the first time		The next stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	6	19	1,0	0	0	9
2	15	16	2,0	0	0	7
3	12	17	3,5	0	0	16
4	1	14	5,0	0	0	11
5	4	13	6,5	0	0	9
6	3	11	8,0	0	0	15
7	2	15	10,3	0	2	10
8	18	20	12,8	0	0	11
9	4	6	15,6	5	1	12
10	2	10	18,5	7	0	13
11	1	18	23,0	4	8	15
12	4	9	27,7	9	0	17
13	2	7	33,1	10	0	14
14	2	5	41,3	13	0	16
15	1	3	51,8	11	6	18
16	2	12	64,5	14	3	19
17	4	8	79,7	12	0	18
18	1	4	172,7	15	17	19
19	1	2	328,6	18	16	0

Source: calculated by authors

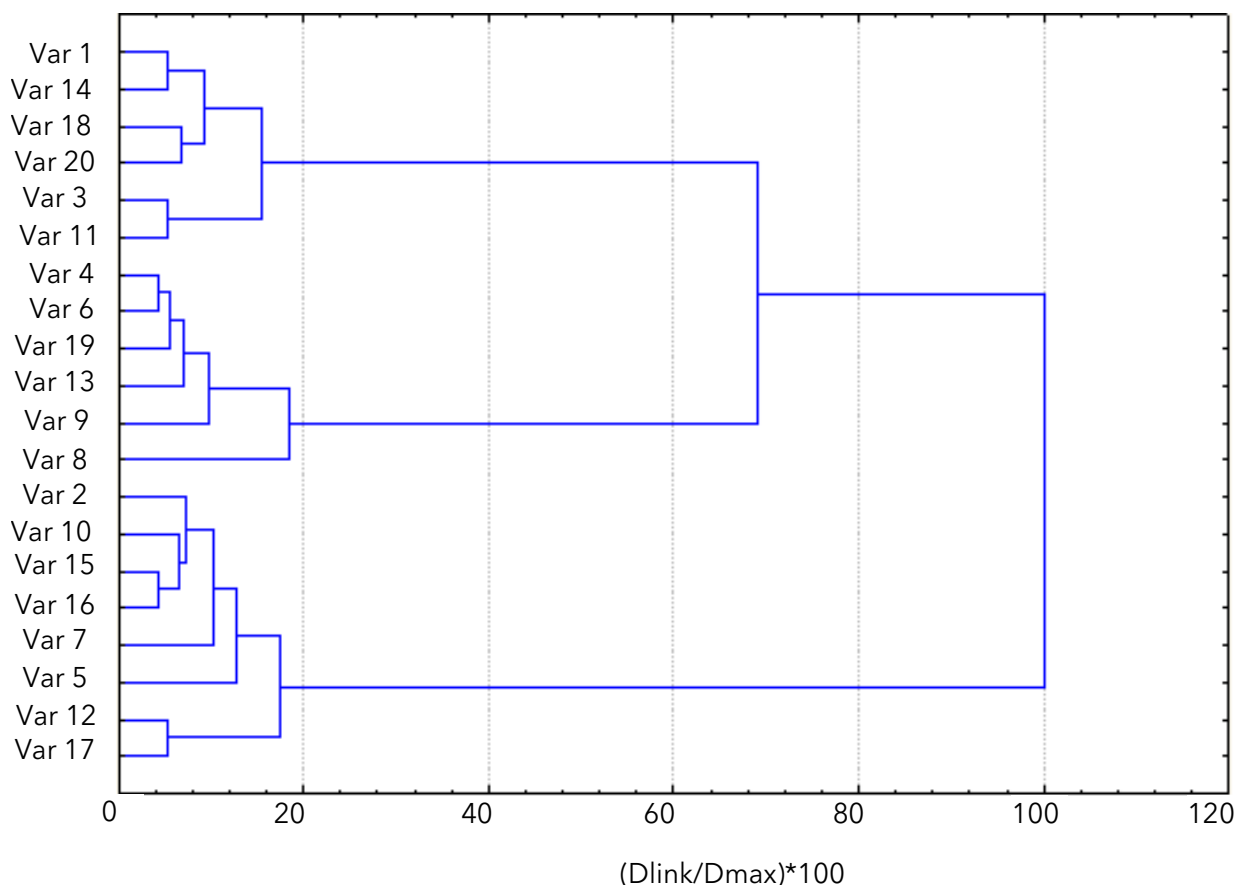
Fourth stage. Decide on the number of clusters. In hierarchical clustering, you can use distances according to the criteria by which clusters are united (From the agglomeration plan it is evident that during the transition from 17 to 18 stages the distance factor increases by more than twice). That is, you need to leave three clusters. Relative sizes of clusters should be sufficiently expressive.

The fifth stage. Interpreting and profiling clusters involves testing cluster centroids (Table 3, Fig. 2).

Cluster 1 brings together groups 1 and 2. Group 1 (high value V2). – «skeptical consumers». These consumers are skeptical of vegetable products. Such respondents are 4 people.

Group 2 (low values V4, V6) – «apathy consumers». They buy this product only for that, that it is better presented and packaged. Such consumers are visiting this market and other retail outlets. Such respondents – 2.

Cluster 2 (high values V4, V6 and low V2) – «loyal consumers». This group of consumers is positive about consumption of vegetables however, the purchase of vegetables is spontaneous and has an unsystematic nature. Such respondents are 6 people.



Cluster 1

1 group – respondents with numbers – 1, 14, 18, 20.

2 group – respondents with numbers – 3, 11.

Cluster 2

3 group – respondents with numbers – 4, 6, 19, 13, 9, 8.

Cluster 3

4 group – respondents with numbers – 2, 10, 15, 16.

5 group – respondents with numbers – 7, 5, 12, 17.

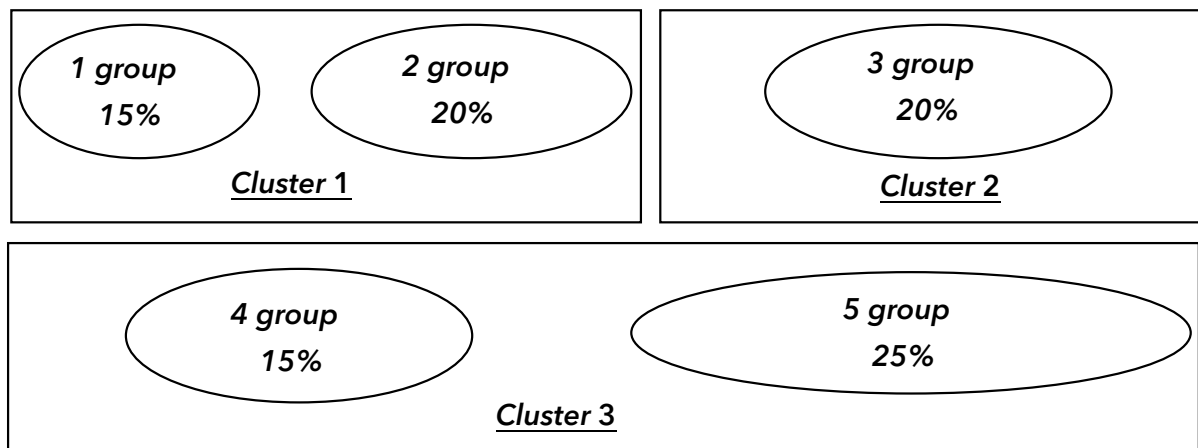
Figure 1 – Tree diagram (dendrogram) used in the analysis of preferences of consumers of vegetable products in the supermarket «Velyka Kyshenya»

Source: constructed by the authors with the help of the program STATISTIKA 2006 [Yankovoy 2001]

Table 3 – Checking cluster centroids using Ward's method

Cluster number	Group number	Average values					
		V1	V2	V3	V4	V5	V6
1	1	3,50	5,05	3,33	1,67	3,00	1,83
	2	3,15	4,16	5,61	4,95	2,68	3,73
2	3	2,98	3,56	4,87	3,65	4,21	4,69
3	4	3,69	2,87	4,65	5,21	3,98	4,15
	5	6,00	3,50	6,00	3,50	5,83	3,33

Source: calculated by authors



Cluster1

1 group – respondents with numbers – 1, 14, 18, 20.

2 group – respondents with numbers – 3, 11.

Cluster 2

3 group – respondents with numbers – 4, 6, 19, 13, 9, 8.

Cluster 3

4 group – respondents with numbers – 2, 10, 15, 16.

5 group – respondents with numbers – 7, 5, 12, 17.

Figure 2 – Distribution of consumers of vegetable products on groups for psychophysical behavior

Source: *developed by authors*

Cluster 3 unites groups 4 and 5. This group is the largest and includes 8 people. Group 4 (high values V1 and moderate values V3 and V5) – «active consumers». These are consumers who buy vegetable products since they are eager to consume all new and best of the products of vegetable growing. These respondents have a certain impact on advertising and the recommendations of friends and relatives. Such respondents are 4 people. Group 5 (high values V3, V1 and V5) – «pragmatic consumers». There are 4 persons identified. These consumers buy vegetable products first, because they care for their health and the health of future generations. Secondly, they buy this product because it is better presented and packaged. Respondents advertise products themselves and recommend the use of vegetables to relatives and acquaintances.

The sixth stage. Reliability and accuracy can be measured in two main ways: 1) apply different ways to measure distance and compare the results; 2) use different methods of cluster analysis and compare results.

Proposed techniques should be used in the further practical activity of marketing services at the enterprises of the vegetable industry and their integration formations.

Conclusions. Improvement of infrastructure elements of the market of vegetable production lies in the peculiarities of the formation and functioning, which is to provide an effective relationship between direct producers of agricultural products and their consumers, due to the coherence of processes of resource supply, production, marketing, storage, processing, transportation and processing, due to quantitative and qualitative criteria of saturation by products, its safety for consumers, which can be cooperatives and clusters.

The article justifies expediency the inclusion of psychographic and behavioral features in the segmentation of the market of vegetable products with cluster analysis, which will enable the further work of the marketing service to take into account the needs and demands of consumers in detail establish the degree of their loyalty that is, the relation to vegetable production its packaging and qualitative characteristics. The control of this technique is important not only for the marketer, who carries out marketing researches, but also for employees of the marketing department of a small vegetable company.

References

- Armstrong, G., & Kotler, F. (2001). *Marketing. General course.* (per. s eng.). Moscow: View. Home Williams, 608
- Ayvazyan, S., & Mkhitarian, V. (2001) *Application statistics. Basics of Econometrics.* 1 Volume: Theory of probability and applied statistics. Moscow : UNITY-DANA, 656
- Bondarenko, O. S., & Slesarev, V. V. (2011). Cluster Analysis Method. Retrieved from: [http:// www.rusnauka.com/11_EISN_2011/Informatica /1_84590. doc.htm](http://www.rusnauka.com/11_EISN_2011/Informatica/1_84590.doc.htm)
- Borovikov, V. (2003). *Statistica. The art of computer data analysis: for professionals.* Saint Petersburg, 688
- Bureeva, N. N. (2007). *Multidimensional statistical analysis using SPT STATISTICA.* Nizhny Novgorod, 112
- Duran, B., & Odell, P. (1997). *Cluster analysis* (per. s eng.). Moscow: Statistics.
- Electronic textbook on statistics* (2001). StatSoft, Inc. Retrieved from: <http://www.statsoft.ru/home/textbook/default.htm>
- Gorkavy, V. K., & Yarova, V. V. (2004). *Mathematical statistics*, Kyiv: Professional
- Grishova, I. Yu., & Prysyazhnyuk, A. Yu. (2011). Clusters in the agro-industrial complex: problems and prospects of development. *Economy of agro industrial complex.* Vol. 4, 142-146
- Holovchenko, N. M. (2009). Clustering policy as the main tool increase in the competitiveness of organic products in the domestic and foreign markets. *Investments: practice and experience.* Vol. 23, 54-56
- Kupalova, G. I. (2008). *The theory of economic analysis.* Retrieved from: <https://westudents.com.ua/knigi/188-teorya-ekonomchnogo-analzu-kupalova-g.html>
- Oldenderfer, M. S., & Blasphoid, R. K. (1989). *Cluster analysis / Factorial, discriminant and cluster analysis*, Moscow: Finance and Statistics, 215
- Savitskaya, G. V. (2012). *Methods of complex analyzes of economic activities.* Moscow: INF RA, 567-589
- Yashkina, O. (2008). Use of cluster analysis in the segmentation of respondents. *Marketing in Ukraine*, vol. 1, 45-48
- Yankovoy, A. G. (2001). *Multivariate analysis in the system STATISTICA.* Odessa: Optimum. Vol. 1, 216

Data przesłania artykułu do Redakcji: 14.06.2019
Data akceptacji artykułu przez Redakcję: 29.06.2019

Liudmyla Demchenko

PhD Student,

Taras Shevchenko National University of Kyiv,

Public Administration Department

Ukraine, Kyiv

demchenko_l_d@ukr.net

ORCID ID: 0000-0003-1721-8834

**THE ACTUALITY OF POST-BUREAUCRATIC PARADIGM BY M. BARZELAY
AND B. ARMAJANI IN THE CONTEXT OF SERVICE-ORIENTED PUBLIC
ADMINISTRATION REFORMS**

Abstract. The article reveals the content of service-oriented reforms of public administration, identifies the key ideas and principles of service approach, as well as explores the features of the post-bureaucratic paradigm by M. Barzelay and B. Armajani and its theoretical and practical potential in the context of strengthening the state service function. The purpose of the article is to reveal the heuristic potential of the scientific ideas of B. Armajani and M. Barzelay for the service activity of the state. The relevant task is to identify the essence of the service approach to public policy, the key statements and tools of the post-bureaucratic model of public administration, as well as its opportunities in the course of service-oriented reforms of public administration, both in Ukraine and in the EU. The methodology of the research is based on a set of general scientific and special methods, in particular, systemic, structural and functional, bibliographic ones, which allow to achieve the goal and objectivity of this scientific research. It is found out that the service state relies on such principles as efficiency, effectiveness, openness and accessibility of information, accountability to citizens, citizens' equality, political participation, consensus model of public decision making, etc. Instrumental implementation of service policy became possible through managerization, marketization, decentralization of managerial functions, devolution, management and performance auditing, deliberative practices, digitalization, etc. It is argued that the service approach to public administration can be greatly enhanced by the provisions and transformational mechanisms of the post-bureaucratic paradigm, first of all, because of its emphasis on the cultural component. The urgency of the post-bureaucratic approach is reinforced by the verification of its effectiveness in practice (Minnesota's experience, USA).

Keywords: post-bureaucratic paradigm, service state, public administration reform, new public management, good governance, service delivery, charter, marketization

Formulas: 0, fig.: 0, tabl.: 0, bibl.: 10

JEL Classification: E65, F29, F41

Introduction. The pro-European vector of the Ukrainian state and society development was consolidated during the Revolution of Dignity, and manifested in the further steps undertaken by state officials, social activists, and NGOs with the support of the European Union and other governmental and non-governmental democratic partners. The rejection of multi-vector policy was supported by a series of effective political decisions that clarified the regulatory, organizational and institutional peculiarities of public administration reforms taking into account the EU standards in the context of Ukraine's EU