ОРГАНІЗАЦІЙНІ ТА СОЦІАЛЬНО-ЕКОНОМІЧНІ ЗАСАДИ ФАРМАЦЕВТИЧНОЇ ДІЯЛЬНОСТІ

Recommended by Doctor of Pharmacy, professor A. S. Nemchenko

UDC 615.12 : 339.137.2 : 658.628 DOI: 10.24959/sphhcj.17.67

Zh. V. Mala, O. V. Posylkina, M. M. Nessonova

National University of Pharmacy

Methodological approaches to the analysis and assessment of marketing competitive advantages of pharmacy networks

To determine the right strategic course is the most responsible thing for any company. Therefore, it is extremely important for management to carefully approach to development and implementation of the strategy considering many internal and external factors and focusing on a number of factors.

Aim. To develop methodological approaches in order to identify strengths and weaknesses, assessment of their importance, as well as to determine the marketing competitive advantages of pharmacy networks.

Materials and Methods. To solve this task a survey of 402 employees of 30 pharmacy networks was carried out. The following methods were used in the study: Friedman two-way analysis of variance of dependent samples; Wilcoxon's criterion of related samples with Benjamini-Hochberg correction for multiplicity; Kendall's coefficient of concordance; verbal numeric rating scale of Harrington and Margolin; cluster analysis; analysis using Pearson criterion $\chi 2$ and maximum likelihood criterion $\chi 2$; Kruskal–Wallis test.

Results. The analysis of the priority of competing pharmacies strengths was conducted: in the first cluster (small pharmacy networks) the greatest importance is given to such competitive factors as convenience of location of the pharmacy, affordability of goods and services, as well as the width of the range of drugs and parapharmaceutical products; in the second cluster (medium pharmacy networks) the highest scores are given to availability of additional services and convenient work schedule; the rate and quality of service, affordability of goods and services, availability of professional development programs for the staff, the width of the range of drugs and parapharmaceutical products are the priorities in the third cluster (large and mega pharmacy networks).

Conclusions. The results of the studies conducted should be considered when forming competitive strategies of pharmacy networks taking into account their type.

Key words: pharmacy networks; the strengths of competitors; width of the drug range; affordability of goods and services; convenience of location of the pharmacy; effectiveness of the pricing policy.

Ж. В. Мала, О. В. Посилкіна, М. М. Нессонова

Методичні підходи до аналізу й оцінки маркетингових конкурентних переваг аптечних мереж

Визначення правильного стратегічного курсу є найбільш відповідальною справою для підприємства. Тому менеджменту вкрай важливо підійти зважено до процесу розробки та реалізації стратегії, врахувавши багато внутрішніх і зовнішніх чинників та акцентувавши увагу на низці факторів.

Мета: розробка методичних підходів до визначення сильних і слабких сторін, оцінки їх вагомості, визначення маркетингових конкурентних переваг аптечних мереж.

Матеріали та методи. Для вирішення поставленої мети нами було проведено анкетування 402 співробітників 30 аптечних мереж. У процесі дослідження були використані такі методи: двофакторний аналіз Фрідмена залежних вибірок; критерій Уїлкоксона взаємопов'язаних вибірок з поправкою Бенджаміна-Хохберга на множинність; коефіцієнт конкордації Кендалла; вербально-числові шкали Гаррінгтона і Марголіна; кластерний аналіз; аналіз із використанням критеріїв $\chi 2$ Пірсона і $\chi 2$ максимальної правдоподібності; критерій Краскала-Уолліса.

Результати. Проведено аналіз пріоритетності сильних сторін конкуруючих аптечних підприємств: у першому кластері (дрібних аптечних мереж) найбільша важливість надається таким факторам конкурентоспроможності, як зручність місця розташування аптеки, доступність цін на товари та

послуги, а також широта асортименту лікарських засобів і парафармацевтичних товарів; у другому кластері (середні аптечні мережі) найвище оцінюють наявність додаткових послуг і зручний графік роботи; у третьому кластері (великі і мегааптечні мережі) – швидкості та якості обслуговування, доступності цін на товари та послуги, наявності програм підвищення кваліфікації персоналу, широті асортименту лікарських засобів і парафармацевтичних товарів.

Висновки. Результати проведених досліджень необхідно враховувати при формуванні конкурентних стратегій аптечних мереж з урахуванням їх типу.

Ключові слова: аптечні мережі; сильні сторони конкурентів; широта асортименту ліків; доступність цін на товари та послуги; зручність місця розташування аптеки; ефективність цінової політики.

Ж. В. Малая, О. В. Посылкина, М. Н. Нессонова

Методические подходы к анализу и оценке маркетинговых конкурентных преимуществ аптечных сетей

Определение правильного стратегического курса является наиболее ответственным делом для предприятия. Поэтому менеджменту крайне важно подойти взвешенно к процессу разработки и реализации стратегии, учитывая много внутренних и внешних факторов и акцентировав внимание на ряде факторов.

Цель: разработка методических подходов к определению сильных и слабых сторон, оценки их значимости, определение маркетинговых конкурентных преимуществ аптечных сетей.

Материалы и методы. Для решения поставленной цели нами было проведено анкетирование 402 сотрудников 30 аптечных сетей. В процессе исследования были использованы следующие методы: двухфакторный анализ Фридмена зависимых выборок; критерий Уилкоксона взаимосвязанных выборок с поправкой Бенджамина-Хохберга на множественность; коэффициент конкордации Кендалла; вербально-числовые шкалы Гаррингтона и Марголина; кластерный анализ; анализ с использованием критериев $\chi 2$ Пирсона и $\chi 2$ максимального правдоподобия; критерий Краскала-Уоллиса.

Результаты. Проведен анализ приоритетности сильных сторон конкурирующих аптечных предприятий: в первом кластере (мелких аптечных сетей) наибольшая важность придается таким факторам конкурентоспособности, как удобство местоположения аптеки, доступность цен на товары и услуги, а также широта ассортимента лекарственных средств и парафармацевтических товаров; во втором кластере (средние аптечные сети) высоко оценивают наличие дополнительных услуг, удобный график работы; в третьем кластере (большие и мегааптечные сети) – скорости и качеству обслуживания, доступности цен на товары и услуги, наличию программ повышения квалификации персонала, широте ассортимента лекарственных средств и парафармацевтических товаров.

Выводы. Результаты проведенных исследований необходимо учитывать при формировании конкурентных стратегий аптечных сетей с учетом их типа.

Ключевые слова: аптечные сети; сильные стороны конкурентов; широта ассортимента лекарств; доступность цен на товары и услуги; удобство расположения аптеки; эффективность ценовой политики.

Statement of the problem. To determine the right strategic course of an organization is the most responsible thing for any enterprise because it forms the priorities of the relatively long perspective. Therefore, it is extremely important for management to carefully approach to the process of development and implementation of the strategy considering many internal and external factors and focusing on the main factors. Deep understanding of the importance of this point will allow pharmacy networks to respond to changes in the business environment, provide formation and development of competitive advantages, and maximize the strategic potential of the pharmacy network. In this regard, the issue of development of methodological approaches to the analysis of the competitive advantages of pharmacy networks based on their type is very important.

Analysis of recent research and publications. Today we can speak about a great scientific contribution to development of theoretical and methodological principles of forming and implementing the strategy of competitiveness of enterprises; the works of Hromovyk B. P., Gudzenko O. P. Kotvitska A. A., Mnushko Z. M., Nemchenko A. S., Pestun I. V., Ponomarenko M. S., Tolochko V. M., Khomenko V. M., et al. describe these issues. Each scientist offers proper understanding of the process of the competitive strategy formation, presents his/her own vision of the classification of strategies, methodological tools for analyzing the external and internal environment, the choice of the optimal strategic alternatives, focusing on a particular stage of the strategy development [1-12].

Identification of aspects of the problem unsolved previously. Coverage of the comprehensive vision of the process of development

Table 1

STATISTICAL CHARACTERISTICS OF THE ESTIMATES OF THE STRENGTHS OF PHARMACY NETWORKS

Indicator	M ± m	Me [UQ; LQ]	V	R
convenience of location of the pharmacy	3.11 ± 0.10	4.0 [1.0; 5.0]	62.63	8.23
width of the range of drugs and parapharmaceutical products	3.09 ± 0.09	4.0 [2.0; 5.0]	60.35	8.11
affordability of goods and services	2.86 ± 0.09	3.0 [1.0; 5.0]	66.03	7.50
availability of discounts	2.69 ± 0.09	3.0 [1.0; 4.0]	70.25	7.08
availability of additional services	2.70 ± 0.09	3.0 [1.0; 5.0]	69.78	7.07
wage level of employees	2.54 ± 0.10	3.0 [0.0; 5.0]	79.32	6.95
rate and quality of service	2.55 ± 0.10	3.0 [0.0; 4.0]	76.02	6.88
team environment (team cohesiveness)	2.47 ± 0.10	3.0 [0.0; 4.0]	78.82	6.83
convenient work schedule	2.56 ± 0.10	3.0 [1.0; 4.0]	75.36	6.82
availability of professional development programs for the staff	2.39 ± 0.10	3.0 [0.0; 4.0]	81.30	6.66
attractive interior of the sales area and shop window decoration	2.37 ± 0.09	3.0 [0.0; 4.0]	80.04	6.55
availability of modern computer-aided software	2.34 ± 0.10	2.0 [0.0; 4.0]	82.68	6.42
staff turnover	2.17 ± 0.09	2.0 [0.0; 4.0]	84.82	5.91

where M – is the average value, m – is the error of the mean; Me – is the median, LQ – is the bottom quartile, UQ – is the top quartile; V – is the coefficient of variation (%); R – is the average rank.

and implementation of the strategy has received very little attention, and requires a deeper study of indicators, which must be taken into account when forming competitive strategies for pharmacy networks. Therefore, the topicality of the problem of improving methodological approaches to the analysis and assessment of the competitors' strengths of pharmacy networks led the scientific and practical relevance of this work.

Objective statement of the article. The aim is to develop methodological approaches in order to identify strengths and weaknesses, estimate their importance, and determine the marketing competitive advantages of pharmacy networks.

Materials and methods. To solve this task a questionnaire of 402 employees of 30 pharmacy networks was carried out for assessing their competitors (of them 40.0 % – managers of the pharmacies; 16.7 % – deputy managers; 34.6 % – pharmacists; 8.7 % – employees of other positions). 67 % of respondents worked in pharmacies of regional networks, 33 % – in the national networks; 62.2 % of respondents indicated that their pharmacy belonged to the classical format; 18.7 % – worked in social pharmacies, 14.2 % – belonged to the pharmaceutical market, and 4.9 % – to elite pharmacies. In our study the size of the pharmacy network, its location, the type of the organizational structure, the daily turnover of the pharmacy and its other features also were taken into account.

The following methods were used in the study: Friedman two-way analysis of variance of dependent samples; Wilcoxon's criterion of related samples with Benjamini-Hochberg correction for multiplicity; Kendall's coefficient of concordance; verbal numeric rating scale of Harrington and Margolin; cluster analysis; analysis using Pearson criterion $\chi 2$ and maximum likelihood criterion $\chi 2$; Kruskal–Wallis test [13-19]. All statistical conclusions were made with the confidence level of 95 %.

Presentation of the main material of the research. Currently, the state has not identified approaches regarding the prospects of the regulation activity of pharmacy networks. In modern conditions of competition, the competitiveness of an enterprise is one of the main criteria for assessing its effectiveness and the management system at the pharmaceutical market of Ukraine. Thus, a sustainable competitive position is the basis of the effectiveness of the market strategy of any enterprise of the pharmaceutical industry.

Statistical characteristics of estimates of the strengths of pharmacy networks obtained from the survey of 402 respondents are shown in Tab. 1. These indicators are listed in descending order of average ranks; the importance of each criterion can be determined by them.

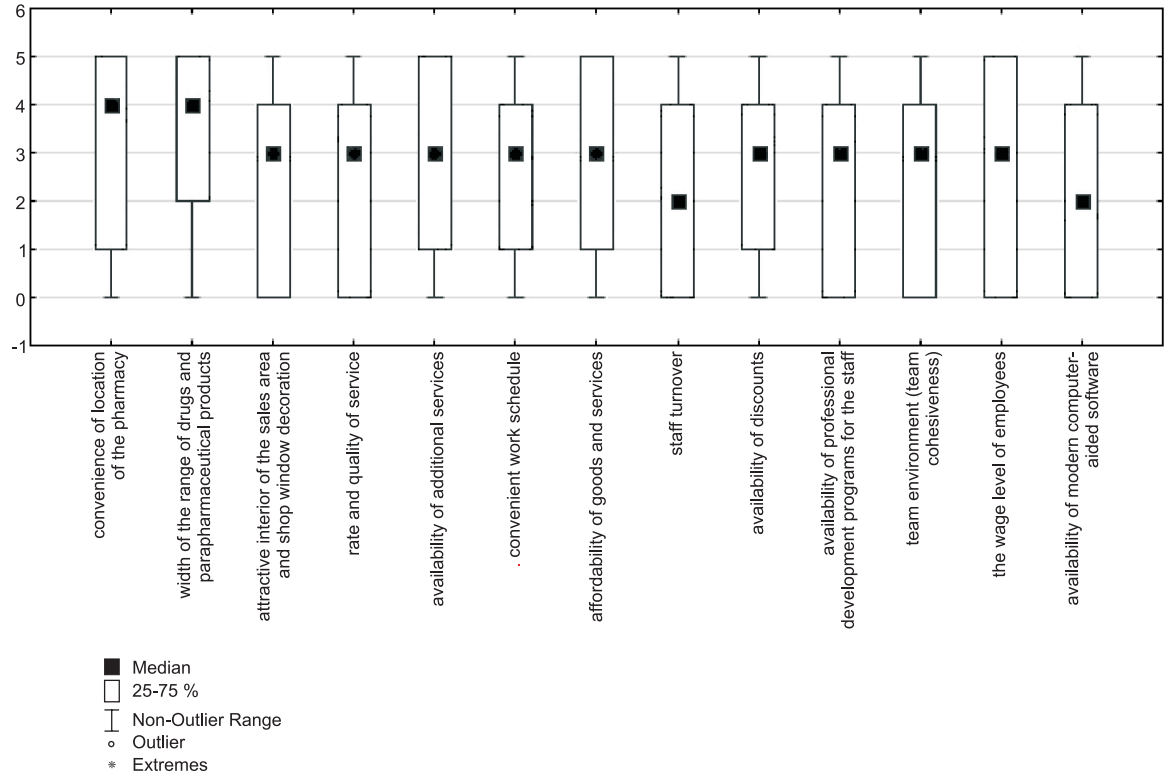

Fig. 1. The box plot of the estimates of the competitors' strengths of pharmacy networks

The tendencies of statistical values for each of the estimates are shown in the box plots (Fig. 1).

Analysis of paired comparisons of factors has shown the absence of significant difference between the ranks of some estimates. Tab. 2 demonstrates the p-levels achieved when comparing between each pair of estimates. Significant differences are marked in gray. Summarizing the results of the analysis conducted it has been found that concerning formation of competitive advantages of pharmacy networks such indicators as convenience of location of the pharmacy, the width of the range of drugs and parapharmaceutical products, affordability of goods and services, and availability of discounts are the most important. The ranks of these indicators are not significantly different among themselves, therefore, they can be considered equally significant. It has been determined that the least important in terms of competitiveness of the pharmacy networks studied are the following characteristics: the staff turnover; availability of modern computer-aided software; attractive interior of the sales area and shop window decoration and others.

Since the experts from pharmacy networks differing significantly in size and the volume of trade turnover took part in our study, it was necessary to cluster the entire sample on the basis of the values of 13 input variables – the scores of the competitors' strengths in order to study the differences in priorities of competitiveness factors by classes.

To determine the number of clusters the methods of hierarchical clustering were used. The linkage rule was determined by Ward's method, Euclidean distance, Manhattan distance, Chebyshev distance and the disagreement percentage were used as distance functions.

As a result of the calculations three clusters were identified (Fig. 2). The size of the clusters was determined by the k-means method, in which the initial cluster centers (initial observation) were selected based on the principle of maximizing the distance between clusters. When dividing into three clusters the following results were achieved: 95 respondents formed the first cluster; 67 respondents were in the second cluster, and 240 experts were in the third cluster. The main difference between respondents in different clusters was based on their estimates of the importance of the competing

Table 2

THE SIGNIFICANCE OF PAIRED COMPARISONS OF THE ESTIMATES OF THE COMPETITORS' STRENGTHS IN THE TOTAL SAMPLE OF RESPONDENTS

Indicator	R	Conditional mark	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	S-13
convenience of location of the pharmacy	8.23	S-1		0.828	0.022	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
width of the range of drugs and parapharmaceutical products	8.11	S-2	0.828		0.028	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
affordability of goods and services	7.50	S-3	0.022	0.028		0.101	0.276	0.003	0.005	0.001	0.012	0.000	0.000	0.000	0.000
availability of discounts	7.08	S-4	0.001	0.001	0.101		0.983	0.176	0.193	0.071	0.209	0.022	0.003	0.002	0.000
availability of additional services	7.07	S-5	0.003	0.001	0.276	0.983		0.164	0.133	0.036	0.191	0.005	0.002	0.001	0.000
wage level of employees	6.95	S-6	0.000	0.000	0.003	0.176	0.164		0.943	0.535	0.865	0.200	0.077	0.011	0.001
rate and quality of service	6.88	S-7	0.000	0.000	0.005	0.193	0.133	0.943		0.427	0.857	0.106	0.105	0.037	0.000
team environment (team cohesiveness)	6.83	S-8	0.000	0.000	0.001	0.071	0.036	0.535	0.427		0.554	0.336	0.324	0.101	0.001
convenient work schedule	6.82	S-9	0.000	0.000	0.012	0.209	0.191	0.865	0.857	0.554		0.154	0.057	0.058	0.001
availability of professional development programs for the staff	6.66	S-10	0.000	0.000	0.000	0.022	0.005	0.200	0.106	0.336	0.154		0.740	0.476	0.012
attractive interior of the sales area and shop window decoration	6.55	S-11	0.000	0.000	0.000	0.003	0.002	0.077	0.105	0.324	0.057	0.740		0.730	0.041
availability of modern computer-aided software	6.42	S-12	0.000	0.000	0.000	0.002	0.001	0.011	0.037	0.101	0.058	0.476	0.730		0.131
staff turnover	5.91	S-13	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.012	0.041	0.131	

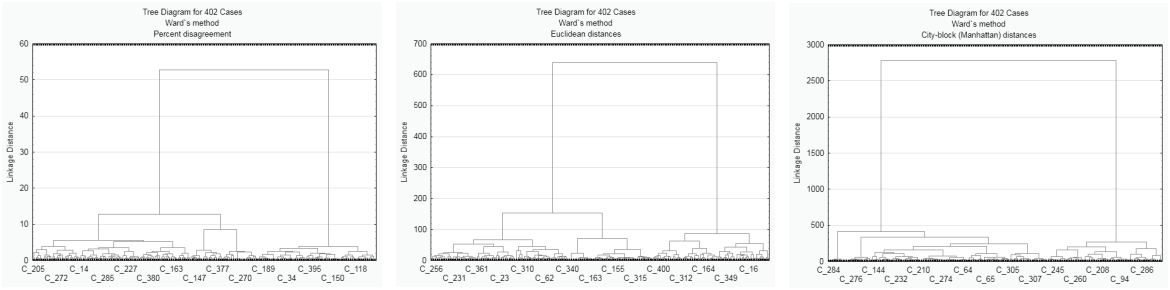

Fig. 2. Diagrams of three clusters for small, medium and large pharmacy networks

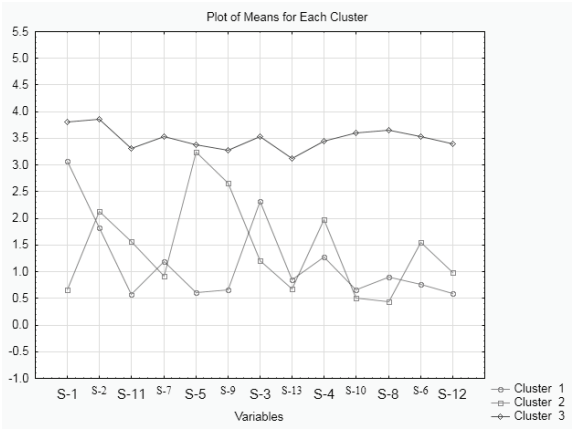

Fig. 3. Distribution of the strengths of pharmacy networks in three clusters

pharmacies strengths. The further analysis showed that all pharmacies working within the small pharmacy networks were in the first cluster; in the second cluster there were only the medium-sized pharmacy networks, and the third cluster comprised the pharmacies belonging to the large and mega pharmacy networks.

It was determined that the third cluster differed primarily by the fact that the average estimates of all indicators of the competitive advantages of pharmacy networks were much higher than in the first two clusters. In the first and second clusters the average scores were not more than 3.5 points, but they differed significantly by most indicators (Fig. 3).

During the study the information about indicators revealing a significant difference between clusters was of interest. First, it was the significance of this difference in estimates of some basic management functions, namely functions of analysis, organization and control. The difference mentioned was in the fact that respondents from the third cluster tended to consider these management functions to be more important than respondents from other clusters. Secondly, the attitude of respondents

Table 3

THE CHARACTER OF SIGNIFICANT DIFFERENCES BETWEEN THE CLUSTERS BY THE VALUE OF THE ESTIMATES OF THE COMPETITORS' STRENGTHS

Type of difference (a number of advantages of clusters)	Indicators
2 <1 <3 (indicators S-1 and S3 are the most important in the third cluster)	S-1 (convenience of location of the pharmacy) S-3 (affordability of goods and services)
1 =2 <3 (indicators S-2; S-4; S-7; S-8; S-10; S-12; S-13 are the most important in the third cluster)	S-2 (width of the range of drugs and parapharmaceutical products) S-4 (availability of discounts) S-7 (rate and quality of service) S-8 (team environment (team cohesiveness)) S-10 (availability of professional development programs for the staff) S-12 (availability of modern computer-aided software) S-13 (staff turnover)
1 <2 =3 (indicators S-5 and S-9 are identically significant in the second and third clusters)	S-5 (availability of additional services) S-9 (convenient work schedule)
1 <2 <3 (indicators S-6 and S-11 are the most important in the third cluster)	S-6 (wage level of employees) S-11 (attractive interior of the sales area and shop window decoration)

Table 4

CHARACTERISTICS OF THE ESTIMATES OF THE COMPETITORS' STRENGTHS FOR THE FIRST CLUSTER (SMALL PHARMACY NETWORKS, n = 95)

Indicator		M ± m	Me [UQ; LQ]	V	R
convenience of location of the pharmacy	S-1	3.06 ± 0.21	4.0 [1.0; 5.0]	65.95	10.27
affordability of goods and services	S-3	2.32 ± 0.22	2.0 [0.0; 5.0]	92.20	8.89
width of the range of drugs and parapharmaceutical products	S-2	1.82 ± 0.20	1.0 [0.0; 3.0]	108.35	8.25
availability of discounts	S-4	1.27 ± 0.19	0.0 [0.0; 3.0]	148.63	7.16
rate and quality of service	S-7	1.19 ± 0.19	0.0 [0.0; 2.0]	152.82	6.81
team environment (team cohesiveness)	S-8	0.91 ± 0.16	0.0 [0.0; 1.0]	169.82	6.54
staff turnover	S-13	0.85 ± 0.16	0.0 [0.0; 1.0]	178.58	6.42
wage level of employees	S-6	0.77 ± 0.15	0.0 [0.0; 1.0]	191.20	6.29
availability of professional development programs for the staff	S-10	0.66 ± 0.14	0.0 [0.0; 1.0]	199.92	6.17
availability of additional services	S-5	0.60 ± 0.12	0.0 [0.0; 1.0]	190.50	6.11
attractive interior of the sales area and shop window decoration	S-11	0.58 ± 0.13	0.0 [0.0; 1.0]	213.16	6.11
convenient work schedule	S-9	0.66 ± 0.14	0.0 [0.0; 1.0]	207.05	6.05
availability of modern computer-aided software	S-12	0.59 ± 0.13	0.0 [0.0; 1.0]	219.23	5.93

to one of the strengths of their own pharmacy network – the stability of the financial situation – was significantly different. Thus, the first cluster differed from the second and third ones that there were fewer respondents considering the stable financial position to be the strength of their pharmacy network (in the second and third cluster there were approximately 50 % of such respondents).

Thirdly, (and this difference was the most pronounced) there was a significant link between the clusters and the type (size) pharmacy network (Tab. 3). Thus, in the first cluster (small pharmacy networks) consistency of expert opinions was highly important, and it could be qualitatively assessed as medium or high (R = 0.653, p = 0.00000). In the second cluster (middle pharmacy networks) consistency of expert opinions was high (K=0.7241, p=0.00000), and in the third cluster (large and mega pharmacy networks) it was medium (R=0.5903, p=0.00000).

It was found that in the second and in the third clusters (middle, large and mega pharmacy networks) experts tended to assess equally high such strengths of competitors as availability of additional services and convenient work schedule. This can be explained by the fact that additional services and twenty-four-hour work help to increase the turnover of a pharmacy network.

In the first and second clusters there was the similar estimation of the importance of the width of the range of drugs and parapharmaceutical products, availability of discounts, rate and quality of service, team environment (team cohesiveness), availability of professional development programs for the staff, the staff turnover and availability of modern computer-aided software. However, estimates of these parameters in small and medium-sized pharmacy networks (clusters 1 and 2) were significantly lower than in large and mega pharmacy networks (cluster 3). This may be due to the fact that small and medium-sized pharmacy networks do not give the necessary attention to the weight of these indicators.

Small pharmacy networks (cluster 1) paid more attention to such competitors' strengths as convenience of location of the pharmacy and affordability of goods and services, availability of discounts than medium networks (cluster 2); and less attention was given to such factors as availability of additional services, convenient work schedule, the wage level of employees, attractive interior of the sales area and shop window decoration. This can be explained by the fact that for their survival small pharmacy networks primarily pay attention to efficient pricing in their pharmacy networks.

Tab. 4 shows that the most important for respondents from the first cluster (small pharmacy

Table 5

CHARACTERISTICS OF THE ESTIMATES OF THE COMPETITORS' STRENGTHS FOR THE SECOND CLUSTER (MEDIUM PHARMACY NETWORKS, n = 67)

Indicator		M ± m	Me [UQ; LQ]	V	R
availability of additional services	S-5	3.24 ± 0.24	4.0 [2.0; 5.0]	61.54	9.96
convenient work schedule	S-9	2.66 ± 0.26	3.0 [0.0; 5.0]	79.05	8.94
width of the range of drugs and parapharmaceutical products	S-2	2.13 ± 0.27	1.0 [0.0; 5.0]	103.13	8.22
availability of discounts	S-4	1.97 ± 0.27	1.0 [0.0; 4.0]	110.35	7.81
attractive interior of the sales area and shop window decoration	S-11	1.57 ± 0.24	0.0 [0.0; 3.0]	126.27	7.32
wage level of employees	S-6	1.55 ± 0.26	0.0 [0.0; 3.0]	135.17	7.01
affordability of goods and services	S-3	1.21 ± 0.22	0.0 [0.0; 2.0]	145.81	6.69
availability of modern computer-aided software	S-12	0.99 ± 0.21	0.0 [0.0; 1.0]	173.59	6.37
convenience of location of the pharmacy	S-1	0.66 ± 0.15	0.0 [0.0; 1.0]	186.59	6.10
rate and quality of service	S-7	0.91 ± 0.20	0.0 [0.0; 1.0]	178.06	6.04
staff turnover	S-13	0.67 ± 0.16	0.0 [0.0; 1.0]	199.74	5.69
availability of professional development programs for the staff	S-10	0.51 ± 0.13	0.0 [0.0; 1.0]	209.71	5.45
team environment (team cohesiveness)	S-8	0.43 ± 0.12	0.0 [0.0; 0.0]	231.82	5.42

networks) are the following factors: convenience of location of the pharmacy (S-1), affordability of goods and services (S-3) and the width of the range of drugs and parapharmaceutical products (S-2).

The importance of the estimates of the competitors' strengths in the second cluster is presented in Tab. 5. For example, in the second cluster the greatest attention was given to such competitive advantages as availability of additional services (S-5) and convenient work schedule (S-9). However, respondents gave less importance to the width of the range of drugs and parapharmaceutical products. It is quite understandable since traditionally medium pharmacy networks have rather wide range of drugs.

The priority of the competitors' strengths in the third cluster (240 respondents) is presented in Tab. 6. It was found that respondents from the third cluster gave the high significance

Table 6

CHARACTERISTICS OF THE ESTIMATES OF THE COMPETITORS' STRENGTHS FOR THE THIRD CLUSTER (MEGA- AND LARGE PHARMACY NETWORKS, n = 240)

Indicator		M ± m	Me [UQ; LQ]	V	R
width of the range of drugs and parapharmaceutical products	S-2	3.87 ± 0.08	4.0 [3.0; 5.0]	31.46	8.03
convenience of location of the pharmacy	S-1	3.81 ± 0.09	5.0 [3.0; 5.0]	38.55	8.02
team environment (team cohesiveness)	S-8	3.65 ± 0.08	4.0 [3.0; 5.0]	34.57	7.35
wage level of employees	S-6	3.53 ± 0.10	4.0 [2.0; 5.0]	42.79	7.19
availability of professional development programs for the staff	S-10	3.60 ± 0.08	4.0 [3.0; 5.0]	36.06	7.19
affordability of goods and services	S-3	3.53 ± 0.09	4.0 [2.5; 5.0]	39.90	7.17
rate and quality of service	S-7	3.54 ± 0.09	4.0 [3.0; 5.0]	37.77	7.14
availability of discounts	S-4	3.45 ± 0.09	4.0 [3.0; 5.0]	38.35	6.85
availability of additional services	S-5	3.39 ± 0.09	4.0 [2.0; 5.0]	42.31	6.64
availability of modern computer-aided software	S-12	3.40 ± 0.09	4.0 [2.0; 5.0]	40.74	6.62
convenient work schedule	S-9	3.28 ± 0.10	3.0 [2.0; 5.0]	46.44	6.53
attractive interior of the sales area and shop window decoration	S-11	3.30 ± 0.09	3.0 [2.0; 5.0]	43.10	6.51
staff turnover	S-13	3.12 ± 0.09	3.0 [2.0; 4.0]	46.26	5.77

to more factors contributing to competitive advantages, such as the width of the range of drugs and parapharmaceutical products, convenience of location of the pharmacy, the team environment (team cohesiveness), the wage level of employees, availability of professional development programs for the staff, affordability of goods and services, rate and quality of service. It is worth noting that in large and mega pharmacy networks there is usually availability of discounts, availability of additional services, convenient work schedule, attractive interior of the sales area and shop window decoration, and therefore, there are no high points given to them by experts.

Conclusions

1. Thus, based on the questionnaire of 402 employees in 30 Ukrainian pharmacy networks the analysis of the priority of the competing pharmacies strengths has been conducted. The stratification of the total sample into three groups, in which satisfactory consistency of expert assessments is achieved, has been obtained using the methods of the cluster analysis. It has been shown that these clusters differ mostly by the type of the pharmacy network: the first cluster of pharmacies is mainly composed of small networks, the second one consists of medium pharmacy networks, and in the third cluster there are large and mega pharmacy networks.

2. As the result of studying the statistically significant differences between the clusters it has been found that respondents from the cluster of large and mega pharmacy networks tend to assess such management functions as analysis, organization and control more highly than respondents from other clusters.

3. The difference in ranks of importance of the estimates of the competitors' strengths for the respondents from different clusters has been shown. Thus, in the first cluster (small pharmacy networks) the greatest importance is given to such competitive factors as convenience of location of the pharmacy, affordability of goods and services, as well as the width of the range of drugs and parapharmaceutical products.

4. In the second cluster (medium pharmacy networks) the highest scores are given to availability of additional services provided by pharmacy and convenient work schedule. Respondents from this cluster give slightly lower weight to the factor of the width of the range of drugs and parapharmaceutical product.

5. Large and mega pharmacy networks (the third cluster) differ in that they pay a great attention to the rate and quality of service, affordability of goods and services, availability of professional development programs for the staff, the width of the range of drugs and parapharmaceutical products, convenience of location of the pharmacy, the team environment (team cohesiveness), the wage level of employees.

6. The results of the studies conducted should be considered when forming competitive strategies of pharmacy networks taking into account their type.

Conflicts of Interest: authors have no conflict of interest to declare.

References

1. Вавуліна, Ю. В. Теоретичні аспекти визначення конкурентоспроможності потенціалу підприємства / Ю. В. Вавуліна, В. Г. Котлярова // Актуальні проблеми розвитку галузевої економіки та логістики : матеріали IV міжнар. наук.-практ. конф., 2-3 квіт. 2015 р. – Х. : НФаУ, 2015. – С. 289–291.
2. Гончаров, А. Б. Конкурентоспроможність підприємства в системі маркетингу / А. Б. Гончаров, Я. О. Антонова // Формування стратегії науково-технічного, екологічного і соціально-економічного розвитку суспільства : матеріали II Міжнар. наук.-практ. Інтернет-конф., 5–6 груд. 2013 р. – Тернопіль : Крок, 2013. – С. 111–113.
3. Кайдалова, А. В. Система менеджменту якості як фактор конкурентоспроможності фармацевтичних підприємств / А. В. Кайдалова, О. С. Погребняк // Актуальні проблеми розвитку галузевої економіки та логістики : матеріали IV Міжнар. наук.-практ. конф., 2-3 квіт. 2015 р. – Х. : НФаУ, 2015. – С. 294–295.
4. Коноваленко, М. К. Система менеджменту знань як складова підвищення конкурентоспроможності підприємства / М. К. Коноваленко // Професійний менеджмент в сучасних умовах розвитку ринку : матеріали доп. IV наук.–практ. конф. з міжнар. участю, м. Харків, 3 листоп. 2015 р. – Х., 2015. – С. 92–93.
5. Котвіцька, А. А. Аналіз факторів, що впливають на конкурентоспроможність вітчизняних фармацевтичних підприємств / А. А. Котвіцька, І. О. Сурікова // Сучасні досягнення фармацевтичної

технології : матеріали IV наук.-практ. конф. з міжнар. участю, м. Харків, 16-17 жовт. 2014 р. – Х. : НФаУ, 2014. – С. 166–167.
6. Котвіцька, А. А. Дослідження маркетингових аспектів якості послуг як головного чинника конкурентоспроможності парфумерно-косметичних підприємств сфери послуг / А. А. Котвіцька, О. М. Вороніна // Соціальна фармація в охороні здоров'я. – 2016. – Т. 2, № 1. – С. 70–78.
7. Кущенко, А. В. Сучасні методи оцінки конкурентоспроможності / А. В. Кущенко, С. Г. Мороз // Професійний менеджмент в сучасних умовах розвитку ринку: матеріали II наук.–практ. конф., 1 листоп. 2013 р. – Х., 2013. – С. 100–102.
8. Посилкіна, О. В. Методологічні і методичні аспекти оцінки конкурентоспроможності фармацевтичних підприємств / О. В. Посилкіна, Н. В. Демченко // Управління, економіка та забезпечення якості в фармації. – 2014. – № 2. – С. 28–35.
9. Posylkina, O. V. Actual questions of development management and competitiveness of pharmacy networks: identifying the main issues and key tendencies / O. V. Posylkina, Zh. V. Mala // Управління, економіка та забезпечення якості в фармації. – 2015. – № 5. – С. 28–34.
10. Рогуля, О. Ю. Застосування якісних та кількісних методів оцінки конкурентоспроможності фармацевтичного підприємства / О. Ю. Рогуля, В. О. Лозенко // Актуальні проблеми розвитку галузевої економіки та логістики : матеріали II наук.–практ. конф. – Х., 2013. – С. 97–99.
11. Рогуля, О. Ю. Теоретичні аспекти формування та оцінки конкурентоспроможності виробничого підприємства / О. Ю. Рогуля, О. М. Конвісар // Професійний менеджмент в сучасних умовах розвитку ринку : матеріали III наук.-практ. конф., 4 листоп. 2014 р. – Х., 2014. – С. 306–307.
12. Терещук, С. І. Оцінка конкурентоспроможності аптеки за зовнішніми перевагами / С. І. Терещук, Б. П. Громовик // Провізор. – 2010. – № 3. – С. 9–14.
13. Афоничкин, А. И. Управленческие решения в экономических системах / А. И. Афоничкин, Д. Г. Михаленко. – СПб. : Питер, 2009. – 480 с.
14. Кобзарь, А. И. Прикладная математическая статистика. – 2–е изд., испр. / А. И. Кобзарь. – М.: ФИЗМАТЛИТ, 2012. – 816 с.
15. Марголин, Е. Методика обработки данных экспертного опроса / Е. Марголин // Полиграфия. – 2006. – № 5. – С. 14–16.
16. Орлов, А. И. Эконометрика / А. И. Орлов. – М. : Экзамен, 2004. – 576 с.
17. Трошин, Л. И. Статистический анализ нечисловой информации / Л. И. Трошин, В. А. Балаш, О. С. Балаш. – М. : Московский государственный университет экономики, статистики и информатики, 2001. – 67 с.
18. Lehmann, E. L. Testing statistical hypotheses / E. L. Lehmann, J. P. Romano. – 3rd ed. – New York : Springer, 2005. – Chapter 9 : Multiple testing and simultaneous inference. – 786 p. doi: 10.1007/0-387-27605-x.
19. Mirkin, B. Mathematical Classification and Clustering / B. Mirkin. – Springer, 1996. – 444 p. doi: 10.1007/978-1-4613-0457-9.

References

1. Vavulina, Ju. V., Kotliarova, V. H. (2015). Proceeding from *The actual problems of economics and logistics sector '15: IV mizhnararodna naukovo–praktychna konferentsiia* (*2–3 kvitnia 2015 roku) – the 4th International Scientific and Practical Conference*. (pp. 289–291). Kharkiv: Vydavnytstvo NFaU.
2. Honcharov, A. B., Antonova, Ya. O. (2013). Proceeding from *The formation of strategy of scientific, technical, environmental and socio–economic development of society '13: II mizhnarodna naukovo–praktychna Internet–konferentsiia* (*5–6 hrudnia 2013 roku) – the 2nd International Scientific and Practical Internet Conference*. (pp. 111–113). Ternopil': Krok.
3. Kaidalova, A. V., Pohrebniak, O. S. (2015). Proceeding from *The actual problems of economics and logistics sector '15: IV mizhnarodna naukovo–praktychna konferentsiia (2–3 kvitnia 2015 roku) – the 4th International Scientific and Practical Conference*. (pp. 294–295). Kharkiv: Vydavnytstvo NFaU.
4. Konovalenko, M. K. (2015). Proceeding from *The professional management in modern conditions of market development '1*5: *IV naukovo–praktychna konferentsiia z mizhnarodnoiu uchastiu (3 lystopada 2015 roku) – the 4th Scientific and Practical Conference with International participation*. (pp. 92–93). Kharkiv: Vydavnytstvo NFaU.
5. Kotvits'ka, A. A., Surikova, I. O. (2014). Proceeding from *The recent advances in pharmaceutical technology '14*: *IV naukovo–praktychna konferentsiia z mizhnarodnoiu uchastiu (16–17 zhovtnia 2014 roku) – the 4th International Scientific and Practical Internet Conference with international participation*. (pp. 166–167).Kharkiv: Vydavnytstvo NFaU.
6. Kotvits'ka, A. A., Voronina, O. M. (2016). *Sotsial'na farmatsiia v okhoroni zdorovia – Social pharmacy in health care, 2 (1)*, 70–78.

7. Kushchenko, A. V., Moroz S. H. (2013). Proceeding from *The professional management in modern conditions of market development '13: II naukovo–praktychna konferentsiia (1 lystopada 2013 roku) – the 2nd Scientific and Practical Conference*. (pp. 100–102). Kharkiv: Vydavnytstvo NFaU.
8. Posylkina, O. V., Demchenko, N. V. (2014). *Upravlinnia, ekonomika ta zabezpechennia yakosti v farmatsii – Management, economics and quality assurance in pharmacy, 2*, 28–35.
9. Posylkina, O. V., Mala, Zh. V. (2015). *Upravlinnia, ekonomika ta zabezpechennia yakosti v farmatsii – Management, economics and quality assurance in pharmacy, 5*, 28–34.
10. Rohulia, O. Yu, Konvisar, O. M. (2014). Proceeding from *The professional management in modern conditions of market development '14: III naukovo–praktychna konferentsiia (4 lystopada 2014 roku) – the 3rd Scientific and Practical Conference*. (pp. 306–307). Kharkiv: Vydavnytstvo NFaU.
11. Rohulia, O. Yu., Lozenko, V. O. (2013). Proceeding from *The actual problems of economics and logistics sector '13: II naukovo–praktychna konferentsiia (17–18 kvitnia 2013 roku) – the 2nd Scientific and Practical Conference*. (pp. 97–99). Kharkiv: Vydavnytstvo NFaU.
12. Tereshchuk, S. I., Hromovyk, B. P. (2010). *Provizor – Pharmacist, 3,* 9–14.
13. Afonichkin, A. I., Mihalenko, D. G. (2009). *Upravlencheskie resheniya v ehkonomicheskih sistemah [The Management decisions in economic systems]*. Sankt–Peterburg: Piter, 480.
14. Kobzar', A. I. (2012). *Applied Mathematical Statistics.* (2nd ed.). Moscow: FIZMATLIT, 816.
15. Margolin, E. (2006). *Poligrafiya – Printing, 5,* 14–16.
16. Orlov, A. I. (2004). Ekonometrika [Econometrics]. Moscow: Ekzamen, 576.
17. Troshin, L. I., Balash V. A., Balash, O. S. (2001). *Statisticheskii analiz nechislovoi informacii [Statistical analysis of non–numerical information].* Moscow: Moskovskii gosudarstvennyi universitet ekonomiki, statistiki i informatiki, 67.
18. Lehmann, E. L., Romano, J. P. (2005). *Testing statistical hypotheses. Chapter 9: Multiple testing and simultaneous inference*. (3rd ed.). New York: Springer, 786. doi: 10.1007/0-387-27605-x.
19. Mirkin, B.(1996). *Mathematical Classification and Clustering*. Springer, 444. doi: 10.1007/978-1-4613-0457-9

Information about authors:
Mala Zh. V., postgraduate student of the Department of Management and Economics of Enterprise, National University of Pharmacy (http://orcid.org/0000-0003-0628-0202). E-mail: kaf.yep@nuph.edu.ua
Posylkina O. V., Doctor of Pharmacy (Dr. habil.), professor, Candidate of Economics (Ph.D.), head of the Department of Management and Economics of Enterprise, National University of Pharmacy (http://orcid.org/0000-0003-4529-4332)
Nessonova M. M., Candidate of Technical Sciences (Ph.D.), associate professor of the Pharmacoinformatics Department, National University of Pharmacy (http://orcid.org/0000-0001-7729-317X)
Відомості про авторів:
Мала Ж. В., аспірант кафедри управління та економіки підприємства, Національний фармацевтичний університет (http://orcid.org/0000-0003-0628-0202). E-mail: kaf.yep@nuph.edu.ua
Посилкіна О. В., доктор фармацевтичних наук, професор, кандидат економічних наук, завідувач кафедри управління та економіки підприємства, Національний фармацевтичний університет (http://orcid.org/0000-0003-4529-4332)
Нессонова М. М., кандидат технічних наук, доцент кафедри фармакоінформатики, Національний фармацевтичний університет (http://orcid.org/0000-0001-7729-317X)
Сведения об авторах:
Малая Ж. В., аспирант кафедры управления и экономики предприятия, Национальный фармацевтический университет (http://orcid.org/0000-0003-0628-0202). E-mail: kaf.yep@nuph.edu.ua
Посылкина О. В., доктор фармацевтических наук, профессор, кандидат экономических наук, заведующая кафедрой управления и экономики предприятия, Национальный фармацевтический университет (http://orcid.org/0000-0003-4529-4332)
Нессонова М. Н., кандидат технических наук, доцент кафедры фармакоинформатики, Национальный фармацевтический университет (http://orcid.org/0000-0001-7729-317X)

Надійшла до редакції 20.12.2016 р.