

**APPLICATION OF STRATEGIC GROUPS MAPPING  
TECHNIQUES IN THE PROCESS OF ASSESSING THE UKRAINE  
SEAPORTS ACTIVITIES**

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To ensure the economic security of Ukrainian seaports and to prevent critical situations, it is necessary to systematize threats and identify, among others, those that need more detailed study and are more economically dangerous.

In the transport sector of Ukraine there are the following modes of transport, providing passenger and cargo traffic both inside and outside the country: land and pipeline transport, water transport, aviation transport, warehousing and auxiliary activity in the field of transport, postal and courier activities.

In the course of the study, indices were calculated to determine the level of competition in the maritime market:

1. Concentration index:

$$CR3 = 31,59 + 21,61 + 16,05 = 69,25 \% \quad (1)$$

where  $CR_i$  - the concentration index of a certain number ( $n$ ) of enterprises, %;

$q_i$  - share of sales of the  $i$ -th enterprise, %.

$45 \% < 69,25 \% < 70 \%$  - the market is moderately concentrated;

2. Herfindahl - Hirschman Index:

$$HHI = 0,0998 + 0,0467 + 0,0258 + 0,0254 + 0,0019 + 0,0012 + 0,0005 + 0,002 + 0,0001 = 0,202 \quad (2)$$

where HHI - Herfindahl - Hirschman Index;

$q_i$  - share of sales of each of the  $m$  enterprises in the industry,  $i = 1, \dots m$ .

If the HHI is close to 0 - the market is unconcentrated, highly competitive.

3. Hall-Tidman Index (Rosenbluth):

$$HT = 1 / (2 * 2,869 - 1) = 1 / 4,7396 = 0,21 \quad (3)$$

where HT - Hall-Tidman Index;

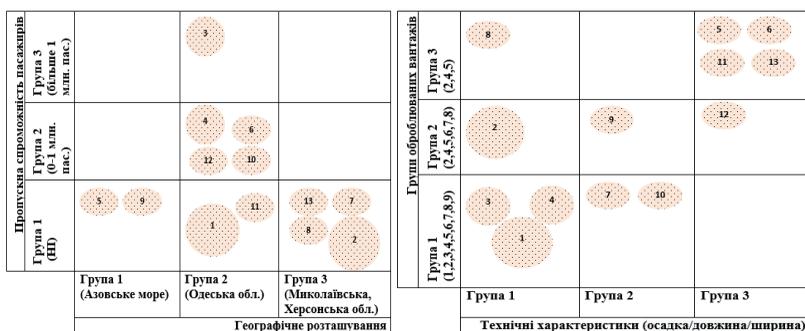
$R_i$  - position (rank) of the  $i$ -th enterprise in the market (the largest enterprise has a rank of 1, the next - 2 and so on);  $q_i$  - share of sales of the same enterprises in total volume,  $i = 1, \dots m$ .

If the value of NT is close to  $1/m$  - the market is unconcentrated, highly competitive.

From the analysis of the indices we conclude that the market of sea transportation of Ukraine is moderately concentrated and highly competitive.

Infrastructure, geographical location of the enterprise and consumers of services have a significant impact on the economic activity of the seaports, which, however, complicates competition among existing enterprises, but does not completely neutralize it.

Fig. 1. shows the maps of strategic groups for 13 seaports of Ukraine according to four indicators - capacity, geographical location, cargo handling group, technical characteristics.



Note: 1 - Southern; 2 - Nikolaev; 3 - Odessa; 4 - Chernomorsk (Illichivsky); 5 - Mariupol; 6 - Ishmael; 7 - Kherson; 8 - Olbia (Oktyabrsk); 9 - Berdyansk; 10 - Reni; 11 - Belgorod-Dnestrovsky; 12 - Ust-Danube; 13 - Skadovsk.

Figure 1. Maps of strategic groups for seaports of Ukraine

Plans for the development of Ukrainian seaports define such activities as: dredging, development of infrastructure of sea terminals, development of road and rail infrastructure, some other areas of investment (among which the most often the introduction of energy efficient technologies and information system).

The analysis shows the unsatisfactory condition of the transport industry as a whole and maritime transport as a separate type. The identified characteristics can adversely affect maritime transport and pose a threat to the economic state of the state seaway. It should be noted that market threat analysis must be carried out at all seaport threat levels.