Based on the analysis of literature sources, it was identified the lack of a unified approach to determining the composition and number of life-cycle stages of insurance companies on the tourist services' market, as well as indicators for their identification. According to the results of content analysis, 4 main stages of the life-cycle were identified: introduction, growth, maturity and decline. The analysis of scientific approaches proved the existence of certain contradictions and ambiguities in determining the composition of indicators and their calculation. Therefore, it was formed a system of quantitative indicators to identify stages of insurance companies' development on the tourist services' market by: selection of the initial composition of indicators based on generalization of literature sources, elimination of high functional dependence between indicators using correlation analysis, reducing the number of financial ratios based on multidimensional factor analysis (principal components' method). It was formed observation of 45 companies as a source of data for correlation and multidimensional factor analysis. According to the results of factor analysis, it is established that the determination of life-cycle stages should be carried out on the basis of 3 obtained factors that characterize 70.9% of the variability of the original variables. Among the set of indicators of each factor using the method of "center of gravity" it was identified diagnostic features that have the most significant properties of the set of source data, including: growth rates of labor costs, the share of insurance companies on the tourist services' market, income, staff and profit. The life-cycle stages of the insurance companies included in the sample of objects were identified using cluster analysis, according to which 19 insurers were assigned to the stage of introduction, 3 to the stage of growth, 10 to the stage of stabilization and 13 to the stage of decline. In order to increase the practical significance of the obtained results it was developed models on the basis of discriminant analysis which allow to determine the life-cycle stages of insurance companies, that were not included in the study sample.
The purpose of the article is development of a methodological approach to determining of life-cycle stages of insurance companies on the tourist services' market it was considered the views of scientists at the life-cycle stages of various areas of economic activity.

Five decades after the development of life-cycle theory, a large number of approaches have been developed to establish the number of stages, their key properties, and to determine the position of an organization on the life-cycle curve. Considerable attention was paid in the scientific works of Antipiev M. [5], Adizes I. [6], Bilayaeva V. [7], Gorshkova L. [8], Greiner R. [9], Duvalova E. [10], Zagorsky D. [11], Miller D. [12], Mozgova I. [13], Osovskyaya G. [14], Smith K. [15], Sheshtyukova O. [16], Shevtsova L. [17] and many others. Despite the significant number of researches and the importance of life-cycle theory, a lot of questions arise in the process of its practical implementation: there is no single point of view on the classification of life-cycle stages and determining their number; there is no single set of indicators and methodological approach to determining the stages of the life-cycle; there are no empirical developments to determine the life-cycle stages of insurance companies on the tourist services' market. All these problems determine the relevance of the purpose of the study.

The study of scientific papers, which investigated the problem of cyclical development of insurance companies, showed that the problem of identifying the life-cycle stages of insurance companies is insufficiently studied. Most of the works of past scientists, among which should be noted Kozmenko O. and Merenkova O. [1], Kravchuk G. [2], Ryabokon N. [3], Shore I. [4] mainly consider certain theoretical aspects of this problem, without paying much attention to determining the number, sequence, characteristics and indicators to identify company's development stage. In view of this, in establishing the sequence of stages and forming the set of indicators to determine the life-cycle stages of insurance companies on the tourist services' market it was considered the views of scientists at the life-cycle stages of various areas of economic activity.
approaches it was identified 7 main indicators to have been chosen as the basis in further research. Which the most common are the stages of introduction, identified 4 stages of the organizations' life cycle, among presented in table 1. The quantity and structure of organizations' life cycle stages is a goal of the study. To achieve the competitiveness. It was used methods of content, correlation, cluster and discriminant analysis to achieve the correlation between indicators and factors for the analyzed insurance companies.

RESEARCH RESULTS

Generalization of scientists' approaches to defining of quantity and structure of organizations' life-cycle stages is presented in table 1.

As shown in table 1, most scientists [4; 5; 10; 12; 17; 16] identify 4 stages of the organizations' life-cycle, among which the most common are the stages of introduction [6; 14; 10; 12; 17; 16], growth [4; 1; 3; 5; 10; 12; 17; 7], maturity [4; 3; 12; 17] and decline [4; 1; 3; 10; 12; 17; 16; 7], which have been chosen as the basis in further research.

Similarly, based on the content analysis of scientists' approaches [4—17] it was identified 7 main indicators to determine life-cycle stages, including growth rates of term of insurer’s activity on the tourist services’ market — K1, labor costs — K2, share of the insurance company on the market — K3, income (gross travel insurance premiums) — K4, staff — K5, profit — K6 and expenses — K7.

On the next stage it was constructed correlation matrix to eliminate the effect of multicollinearity. Then conducted factor analysis to separate interdependent indicators from independent, significant from insignificant, justify the choice of indicators and evaluate their informativeness. The informational basis of the study was data of 50 insurance companies operating on the tourist services' market in Ukraine.

According to the correlation matrix, it is established that there is no close connection between the selected indicators to determine life-cycle stages of insurance companies on the tourist services' market, so all of them will be used for factor analysis.

The obtained results of factor analysis are presented in table 2, where the required number of factors is determined by the amount of accumulated variance.

The results of the factor analysis (table 2) showed that determining of life-cycle stages of insurance companies on the tourist services’ market based on three factors that explain 70.9% of the variability of the assessment. According to the results of rotation by the varimax procedure, the factor loads were obtained (table 3), which show the correlation between indicators and factors for the analyzed insurance companies.

Thus, after the factor analysis (table 3), the indicators for determining the life-cycle stages of insurance companies on the tourist services’ market included 5 coefficients: the growth rate of labor costs — K1, the share of the insurance company on the tourist services’ market of — K2, income — K3, number of staff — K4, profit — K5.

The method of K-means cluster analysis was used to distribute insurance companies by life-cycle stages on the tourist services' market. The main criterion of the K-means method is that objects should be divided into a given number of clusters so the variance between these clusters will be as large as possible and the intraclass variance will be minimal.

Prior to clustering, the sample of insurance companies was cleared of gross errors based on the calculation of Student's test and data standardization was conducted. According to factor analysis, characteristics of intercluster and intracluster variance by groups of insurers are presented in table 4.

From the table. 4 it is seen that in terms of K1-K5, the intercluster variance significantly exceeds the intraclass variance, which indicates the efficiency of clustering. Fisher's statistical criterion for the same indicators significantly exceeds the tabular variance (2.811), which allows us to conclude about adequacy of the cluster analysis. According to the results of clustering by K-means' method, it was found that 19 insurers belong to the stage of introduction, 3 — to the stage of growth, 10 — to the stage of stabilization and 13 — to the stage of decline.

Models of determining the life-cycle stages of insurance companies on the tourist services' market (fig. 1), which not included in the study sample, were built on the basis of discriminant analysis in order to increase the practical significance of this research results.

According to fig. 1, each life-cycle stage corresponds to a separate model. The insurance company belongs to the stage with the highest value of the classification function (Y). The total percentage of correct classification according to the constructed models is 96.07%, which indicates high accuracy and, consequently, the possibility of practical use of the results of discriminant analysis.

Table 1. Characteristics of factors determining the life-cycle stages of insurance companies on the tourist services’ market

| Number of factors | Own value | The share of total variance, % | Cumulative own value | Cumulative variance, % |
|-------------------|-----------|-------------------------------|----------------------|------------------------|
| 1                 | 2.880321  | 41.14744                      | 2.880321             | 41.14744               |
| 2                 | 1.071355  | 15.30508                      | 1.071355             | 15.30508               |
| 3                 | 1.011933  | 14.45618                      | 1.011933             | 14.45618               |

Table 2. Characteristics of factors determining the life-cycle stages of insurance companies on the tourist services’ market

| Indicator | Values of factor loads by factors |
|-----------|-----------------------------------|
|           | Factor 1 | Factor 2 | Factor 3 |
| K1        | -0.241443 | -0.155139 | 0.513852 |
| K2        | 0.029210  | 0.890070 | -0.146591|
| K3        | 0.894772  | 0.155550 | -0.107798|
| K4        | 0.951224  | 0.119720 | -0.175595|
| K5        | 0.321247  | 0.726655 | 0.009746 |
| K6        | -0.059903 | 0.051868 | -0.875895|
| K7        | 0.557521  | 0.439489 | 0.067974 |

Table 3. The closeness of the relationship between the indicators for identifying life-cycle stages of insurance companies on the tourist services’ market and the selected factors

| Indicator | Intercluster dispersion | Degrees of freedom | Intracluster dispersion | Degrees of freedom | Statistical criterion (F) |
|-----------|-------------------------|--------------------|-------------------------|--------------------|--------------------------|
| K1        | 19.42722               | 23.51728          | 41                      | 12.80485           |
| K2        | 31.25884               | 22.74166          | 41                      | 22.77527           |
| K3        | 33.48734               | 10.51266          | 41                      | 40.53420           |
| K4        | 25.93043               | 18.06960          | 41                      | 19.61207           |
| K5        | 15.04918               | 18.95082          | 41                      | 19.04919           |

Table 4. Statistical analysis of variance according to the formed clusters of insurance companies

| Indicator | Intercluster dispersion | Degrees of freedom | Intracluster dispersion | Degrees of freedom | Statistical criterion (F) |
|-----------|-------------------------|--------------------|-------------------------|--------------------|--------------------------|
| K1        | 0.951224               | 0.949723           | 0.726655                | 0.951224           |
| K2        | -0.059903              | 0.051868           | -0.875895              | -0.059903           |
| K3        | 0.557521               | 0.439489           | 0.067974               | 0.557521           |

Fig. 1. Models for determining life-cycle stages of insurance companies on the tourist services’ market

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ЕКОНОМІЧНА НАУКА
CONCLUSIONS

Thus, the article proposes a methodical approach to identifying life-cycle stages of insurance companies on the tourist services' market, based on a number of indicators that are optimal in a quantity, which was proved by multidimensional factor analysis and best reflect trends in insurers' activity at each stage of their development. The implementation of the cluster analysis' method made it possible to identify the life-cycle stages of the objects of this study, and with using of discriminant analysis it was built functions on the basis of which it is possible to determine the stage of operation of any other insurers not included in this analysis. However, the choice of a specific competitiveness management strategy cannot be based only on quantitative criteria and requires consideration of experts' views on a particular type of strategy taking into account main specific of each life-cycle stage.

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