Determining Competitive Advantages of Insurance Companies in Ukraine

Purpose: The study aims to analyze and determine the competitive advantages of insurance companies in Ukraine in order to increase their competitiveness on the basis of economic and mathematical modeling.

Approach / Findings: Detailed analysis of performance indicators of the leading insurance companies in Ukraine was carried out. Based on economic and mathematical modeling, their competitive advantages were calculated. Factors that most significantly affect the competitiveness of an insurance company were determined.

Originality / Value: The study includes a holistic and systematic approach to determining the competitive advantages of insurance companies in the Ukrainian market based on factor analysis of their performance. This study provides additional opportunities for strategic management of a company. The proposed approach can be the basis for implementing simulation experiments of an insurance company to determine the most significant indicators of its work to increase competitiveness.

Practical Implications: Model calculations, carried out in the work, made it possible to determine the position and opportunities of companies in the Ukrainian insurance market, factors that increase the competitiveness of insurance companies, as well as directions for improving their development strategies.

Research Limitations / Future Research: Research prospects are associated with further improvement of indicators that are system-forming in determining competitive advantages of insurance companies in Ukraine.

Paper type: Empirical

Keywords: insurance companies, competitive advantages, economic and mathematical modeling.
Визначення конкурентних переваг страхових компаній України

Мета роботи: Аналіз та визначення конкурентних переваг страхових компаній України з метою підвищення їх конкурентоспроможності на засадах економіко-математичного моделювання.

Підходи/Результати досліджень: Здійснено докладний аналіз показників діяльності провідних страхових компаній України. На засадах економіко-математичного моделювання визначено їх конкурентні переваги. З'ясовано фактори, що найбільш суттєво впливають на конкурентоздатність страхових компаній.

Оригінальність/цінність досліджень: Дослідження включає цілеспрямований дослідний підхід до визначення конкурентних переваг страхових компаній на ринку України на основі факторного аналізу показників їх функціонування. Це дослідження створює додаткові можливості для стратегічного управління компанією. Запроваджений підхід може стати базою для здійснення імітаційних експериментів страхових компаній щодо визначення найбільш значущих факторів роботи для підвищення конкурентоздатності.

Практичне значення досліджень/Перспективи подальших досліджень: Модельні розрахунки, проведені в роботі, дозволили визначити місце і можливості компаній на страховому ринку України, чинники підвищення конкурентоздатності страхових компаній, а також напрями удосконалення стратегій їх розвитку.

Обмеження досліджень/Перспективи подальших досліджень: Перспективи досліджень пов'язані з подальшим удосконаленням показників, які є системоутворюючими при визначенні конкурентних переваг страхових компаній України.

Тип статті: Емпіричний

Ключові слова: страхові компанії, конкурентні переваги, економіко-математичне моделювання, багатомірних статистичний аналіз.
1. Introduction

In today’s world, insurance is a necessary element of protection of property and personal interests of citizens in any society. This is one of the conditions for successful functioning of economic systems of civilized countries and their sustainable economic development. Insurance as a component of the modern market of financial services significantly affects the state of the financial system of a country. It provides not only savings by setting up insurance funds, but also performs an important investment function, which involves investing temporarily free means of these funds in various types of assets. Thus, insurance serves as an important source of investment resources, a stimulator of economic growth, and also contributes to the stability of social reproduction in the economy (Embrecths, Kluppeberg, & Mikosch, 2009; Botvina, 2020).

Therefore, a high level of development of an insurance market is necessary for successful functioning of the economy of any country. To achieve this, the state only needs to create legislative and tax conditions, the rest will be done by competition.

The Ukrainian insurance market is quite young and is only gradually forming. The population is not accustomed to insurance practices that operate successfully around the world. It is the norm for residents of Western Europe to have several insurance programs at the same time, including pension, medical, accident schemes, etc.

“Insurance has not fully implemented its function of real insurance protection and coverage of existing risks of economic entities yet” (Botvina, 2020). But insurance in Ukraine is slowly becoming an important element of socio-economic relations, which is able to ensure stability, confidence and security not only for ordinary citizens but also for business (Ruda, 2020).

Among the reasons for the underdevelopment of the insurance market in Ukraine are the following (Puri, 2018; Tereshchenko, Karpushkina, & Klokov, 2019):

1) economic – low demand for insurance products, chronic lack of funds from individuals and businesses, distrust of insurance companies, much of the shadow economy;
2) legislative – the complexity of insurance legislation, partial inconsistency of various legislative acts, a high level of bureaucracy.

However, it should be noted that these causes are gradually being eliminated, the insurance market is growing and stabilizing. This is confirmed by the annual positive dynamics of the insurance services market in Ukraine. All this makes it attractive for doing business.

Insurance companies (IC) in the process of their creation and operation, like any other company, aim to maximize their profits and meet consumer demands in the market (VRU, 1996). There are several well-known ways to make more money – diversifying insurance services or reducing insurance costs.

Insurance activity is characterized by a fairly large number of indicators. Potential clients are interested in the most important indicators, on the basis of which they take the decision to obtain the service of an insurance company. However, in order to interest the policyholder and collect as many insurance premiums as possible, the insurer must have a unique quality and (or) value proposition. It can be its competitive advantage. This involves studying the consumer’s behavior and the factors that determine his/her choice about an insurance company.

On the other hand, competition in the insurance market is intensifying. In order for an insurance company to take its rightful place in such a market, it is necessary to clearly identify the weaknesses and strengths of the company. It is also important to develop a system of indicators that will allow a clear comparison of competitors’ advantages and disadvantages.

The urgency of the problem of determining competitive advantages is associated with the dynamic development of an insurance market and significant competition in it. This market has its own specifics associated with a large number of insurance companies. Accordingly, each company has a small amount of insurance services (Ionin, 2018). Moreover, there is no single method of determining competitive advantages, bias and diversity of existing approaches to the ranking of insurance companies. The developed market of insurance services will inevitably become one of the factors of development of the national economy in Ukraine. Thus, the problem of determining the competitive advantages of an insurance company will become increasingly important and relevant.

2. Theoretical Background

A competitive advantage is the features of an insurance company, which are manifested in the possession of any exclusive values for the consumer. This provides it with preferences in the chosen field of expertise. Competitive advantages make the company recognizable in the market, protect it from the influence of competitive forces, and give the opportunity to effectively use available resources.

A number of scientific works are devoted to the study of the concept of competitive advantages of companies and the development of appropriate models. Lambin (2012) determines the competitive advantage due to the presence of excellent characteristics of an enterprise, the special properties of its goods or services, which form certain privileges over competitors. But such an advantage can only be determined by comparing it with the characteristics of the most successful competitors in the market. The firm’s competitive advantage is thus relative and not always obvious.

According to the American economist Porter (1998), one of the most important factors of competitive advantages is a lower share of costs for running an insurance company and differentiation of insurance services. This approach orients the insurance company to the development, implementation and sale of insurance products at lower cost. As a result, the sale of insurance services at the same prices as competitors, allows the company to make more profits. Differentiation of insurance services also allows the company to earn high profits by raising prices.

To assess the level of competition in the insurance industry, an adapted model of competitive forces (the “five forces” model) by Porter (2004) is used. Such forces include: competition between existing insurance companies in the industry; insurance intermediaries; insurers; new insurers’ entering the market; insurance products substitutes. The assessment of the degree of influence of each of the five forces of competition \(K_r\) in the insurance market is obtained on the basis of the methodology of expert assessments. Based on a weighted average score, the following conclusions are made: if the value obtained is \(K > 20\), then the competition in the market is low. If the value is \(20 < K < 40\), then the competition in the market is average. If \(K < 40\), then the competition in the market is high.

Most internal indicators of competitiveness are comparative in nature, which allows you to assess the competitiveness of an insurance company by comparing its performance with those of other insurance companies and evaluate its performance against the background of the entire insurance market or its individual segment (Rioja, 2021).

Another indicator of the company’s position in the insurance market is the so-called “MTIBU Traffic Light”. Four times a year, the Motor Transport Insurance Bureau of Ukraine evaluates the activities of insurance companies in Ukraine. This is due to the fact that among the main tasks of the MTIBU the analysis and generalization of information on compulsory civil liability insurance in order to develop proposals for improving this mechanism is declared. Following the results of each quarter, the MTIBU...
publishes an independent rating of insurance companies. The evaluation base for creating the specified rating is:

- general assessment of the company's activity;
- quality of settlement of losses;
- number of complaints against an insurance company.

Rating results are displayed as color indicators. An excellent estimation corresponds to green, good – yellow, unsatisfactory – red. This rating is clear, quite clear. It allows you to compare the competitive advantages of companies, as well as analyze the dynamics of their work (Avtocivilka, 2020). But again, it is not entirely clear what indicators are used to calculate this rating and how they are consistent with each other.

Thus, the existing approaches to determining the competitive advantages of insurance companies are not without certain disadvantages, namely:

- are not clear enough about specific calculations;
- are based on a relatively small number of performance indicators of companies;
- the calculation of rating indicators is not always consistent with generally accepted estimates of financial and other performance indicators;
- often obtained indicators of competitive advantages are not independent and can be used mainly for comparison with other companies.

3. Purpose of the Study

The purpose of the study is analysis and determination of competitive advantages of insurance companies in Ukraine in order to increase their competitiveness on the basis of economic and mathematical modeling. To this end, the paper analyzes the existing approaches to determining the competitive advantages of an insurance company. The expediency of using the model of finding an integrated indicator of competitive advantages on the basis of indicators of reliability, quality, competitiveness, market characteristics, and social activity is substantiated. Relevant calculations and a comparative analysis of the obtained results are performed. The strengths and weaknesses of insurance companies, their place in the Ukrainian insurance market are studied.

4. Data and Method

The paper presents a study of the Ukrainian insurance market for the period from the 1st quarter of 2020 to the 2nd quarter of 2021. This period was chosen on the grounds that Ukraine is in a state of bifurcation due to qualitative changes caused by changes in the quantitative parameters of the economy (reforms, Covid-19, etc.). The information base for calculations was formed on the basis of data of the Ministry of Finance of Ukraine, the National Bank of Ukraine, financial statements of insurance companies and other public information. As a result, a sample of 19 insurance companies was created, the information about which is presented most fully. To perform calculations, software was created in Excel, and the SPSS package was used.

The development of the insurance market is closely related to the dynamics of indicators that characterize the interaction of insurers, policyholders, reinsurers and other market participants. Such indicators include gross insurance premiums and gross insurance payments, which determine insurance reserves and form the insurer’s gross profit. Depending on the financial result, the insurer increases or decreases the amount of its assets after paying all taxes. However, the values of these indicators depend on the number of contracts and the price of an insurance product. Indicators of insurance statistics of Ukraine in 2020-2021 are presented in Tab. 1.

### Table 1: Dynamics of indicators of insurance statistics of Ukraine in 2020-2021

| Period       | The level of gross payments, % | The level of net payments, % | Gross profit, UAH millions | Net profit, UAH millions | Share of insurance premiums provided to reinsurers, % | The cost of an insurance contract, UAH |
|--------------|-------------------------------|-------------------------------|-----------------------------|--------------------------|-----------------------------------------------------|-----------------------------------|
| 1 quarter 2020 | 32.47%                        | 37.85%                        | 7,798.9                     | 6,009.0                  | 16.29%                                              | 284.94                            |
| 2 quarter 2020 | 34.79%                        | 35.30%                        | 6,175.5                     | 5,854.1                  | 4.44%                                               | 545.19                            |
| 3 quarter 2020 | 34.21%                        | 37.56%                        | 7,860.8                     | 6,590.9                  | 11.66%                                              | 378.91                            |
| 4 quarter 2020 | 30.45%                        | 32.80%                        | 8,497.1                     | 7,444.3                  | 9.33%                                               | 392.33                            |
| 1 quarter 2021 | 36.36%                        | 38.68%                        | 7,664.1                     | 6,818.5                  | 7.66%                                               | 411.72                            |
| 2 quarter 2021 | 34.63%                        | 36.25%                        | 8,214.8                     | 7,506.1                  | 6.30%                                               | 459.83                            |

Source: completed by the authors according to Ukrainian insurance market statistics (Forinsurer™, 2021b)

In the 4th quarter of 2020, insurers were able to recover the value of their assets after their decline in the crisis quarter of 2020, caused by coronavirus and lockdown. Gross insurance premiums in the 2nd quarter decreased by 18% compared to the 1st quarter for the same reason. However, by the end of the year, they gradually grew and in the 1st quarter of 2021 exceeded the corresponding figure before the pandemic.

It should be noted that in the crisis of the 2nd quarter, the number of concluded insurance contracts decreased more than twice: from 40,530.8 to 7,369.1 thousand contracts, the decrease was 57.15%. At the same time, the decrease in insurance premiums was only 18%, that is why on the chart this fluctuation is not so significant. This was due to an increase in the average cost of 1 insurance contract from UAH 284.94 up to UAH 545.19 in the crisis quarter. In turn, the price increase could be due to an increase in the insurance rate and increased risk due to the uncertainty of further socioeconomic life of the country. During the study period (1st quarter 2020–2nd quarter 2021), the ratio of gross payments to insurance premiums remained virtually unchanged and amounted to about 35%.

In turn, the share of insurance premiums provided to reinsurers decreased from 11.66% in the 3rd quarter of 2020 to 7.66% in the 4th quarter of 2021. Obviously, this share will continue to decline because when the functioning of the economy stabilizes, the accepted risk does not need to be redistributed. The insurer fully relies on its own insurance reserves to pay compensation in the event of an insured event. On the other hand, the share of insurance premiums provided to reinsurers creates the basis for the reliability of an insurance company in the eyes of customers. This is also worth remembering. The dynamics of the insurance market development in Ukraine in 2020-2021 is presented in Fig. 1.

According to the National Bank of Ukraine, in 2020, insurers earned record profits – a total of UAH 2.2 billion. Return on assets was 3.4%. According to this indicator, insurers were ahead of other non-bank financial institutions. The most common types of insurance are motor insurance (CASCO, OTSPV and Green Card) and personal insurance (NBU, 2021a).
An important indicator of insurance market development is the indicator of “insurance penetration”. This is a relative indicator that compares gross insurance premiums and gross domestic product (GDP) and assesses the impact of insurance on the socioeconomic development of the country. In 2020, GDP in actual prices amounted to UAH 4,194,102 million, the “penetration rate” was 1.08%. The threshold value should be in the range from 1% of a critical level to 8% of an optimal level (VRU, 2013). Therefore, it is a signal for further development of the insurance market, diversification of insurance services, increasing their uniqueness and attracting more people to different types of insurance.

To analyze and determine the competitive advantages of insurance companies, the study is based on the model proposed by Klepikova (2013), with some additions and some changes. We introduce the concept of an integrated indicator of competitive advantages of an insurance company, which is the sum of five groups of indicators: reliability of an insurance company, quality of services, competitiveness, market position in insurance services, and social activity. Each of these groups of indicators characterizes a certain aspect of an insurance company and requires calculations of primary indicators.

The integrated indicator (IP) of competitive advantages of the insurance company can be represented as follows (Klepikova, 2013):

\[
IP = NIC \times \delta_1 + Q \times \delta_2 + COM \times \delta_3 + IM \times \delta_4 + SP \times \delta_5,
\]

where

- \( NIC \) – reliability IC,
- \( Q \) – quality of services,
- \( COM \) – competitiveness,
- \( IM \) – market position in insurance services,
- \( SP \) – social activity IC,
- \( \delta_1, \delta_2, \delta_3, \delta_4, \delta_5 \) – coefficients of relative importance of each indicator.

The reliability of an insurance company (NIC) is expressed by the sum of indicators of financial stability, the average value of insurance payments, the level of reinsurance, weighted by the coefficients of their importance (Klepikova, 2013).

Financial stability can be seen as the ability of a market entity to maintain its financial resources when changing the state and requirements of the environment. The financial stability of an insurance company is formed from solvency, the probability of bankruptcy and capitalization (Klepikova, 2013).

Solvency is the ability of a company to pay its debts. This indicator is found by comparing equity with the sum of short-term and long-term liabilities of the IC. The higher this figure is, the better the company’s debts can be covered by its own funds.

An important indicator is the probability of bankruptcy of an insurance company. In Ukrainian practice, in order to identify trends in the formation of an unsatisfactory balance sheet structure in a profitable business entity, rapid diagnosis of bankruptcy is carried out using the Beaver coefficient:

\[
KB = 1 - \frac{NP + A}{C + L},
\]

where

- \( KB \) – the probability of bankruptcy,
- \( NP \) – gross profit,
- \( A \) – amortization,
- \( C \) – short-term liabilities,
- \( L \) – long-term liabilities.

If the Beaver ratio is more than .40, then the probability of bankruptcy can be considered zero, if the ratio is between .17 and .40, there is probable bankruptcy in the next 5 years, and if it is less than .17, then bankruptcy happens within a year.

The capitalization of an insurance company is calculated as follows: if the company does not comply with the requirements of the Law of Ukraine “On Insurance” regarding the creation of a statutory
fund, the indicator is assigned to 0; if it has a statutory fund that clearly complies with the law, the indicator is equal to .10; if the statutory fund is 10-20% more than the norm – .20; if 21-50% more – .40; if 51-70% more – .50, if 71% and more – 1 (Vasylenko, 2021).

The next indicator of the reliability of an insurance company is reinsurance. Reinsurance aims to reduce the risk of losses in an unstable environment and emergencies. It allows you to compensate for fluctuations and reduce potential damage. In fact, it is a mechanism for sharing responsibilities between insurers to ensure the financial stability of the IC. The level of reinsurance shows which part of the risks assumed by the insurance company transferred to third parties. It is calculated as the ratio of the amount of payments transferred to reinsurers to the total amount of insurance payments.

The quality of services of an insurance company (Q) is an important group of indicators as part of an integrated indicator of competitive advantages. Quality assessment is always quite subjective and is manifested through the interaction of an insurer and a client. The quality of services consists of a weighted sum of the following indicators: the structure of an insurance portfolio, the presence or absence of designer programs, service, and discount systems (Kliepikova, 2019).

Every company strives to form an efficient and balanced insurance portfolio. The indicator of the structure of an insurance portfolio is calculated as the sum of two indicators:

- the first indicator is equal to .50 if, in the structure of the insurance portfolio, liability insurance and compulsory types of insurance are more than 50%; if less, it is equal to a corresponding ratio;
- the second indicator is equal to .50 if property insurance and optional types of insurance are more than 40%; if less, it is equal to a corresponding ratio.

The availability of designer programs is calculated binomially: 1 – if there is a program, 0 – if there is no programme. Discount system: 1 – if there are discounts, 0 – if there are no discounts. Level of service: 1 – if there is a 24-hour support phone and mail, 0 – if there is no 24-hour support or mail.

An integrated competitive advantage indicator (COM) contains a group of indicators that determines the ability of an insurance company to defend its position in the market. It includes rating of the insurance company, pricing policy, the share of legal entities in insurance premiums, office and agency network.

The customer always makes a choice. In the case of insurance companies, we deal with serious and often long-term cooperation. Therefore, when reviewing potential partners in information space, the first aspect of comparing insurance companies is ratings. The most popular and common are the ratings that are calculated as the sum of insurance company’s assets or as the level of payments made by the insurance company.

A price policy indicator is presented as the average cost of one insurance contract. The share of legal entities in the client base of the insurance company also indicates the vector of development and optional types of insurance are more than 50%; if less, it is equal to a corresponding ratio.

The indicator of office and agency network testifies both to stability of work, and to convenience for clients. It is calculated as the number of regions in which the IC is represented divided by the total number of regions.

The company’s position in the insurance services market (IM), as part of an integrated indicator of competitive advantages, is determined by the presence of licenses, the share of foreign companies, and the duration of its existence. Timely renewal of old and obtaining new licenses for specific types of insurance services, such as sea freight insurance, can improve the position of the insurance company and expand its customer base. The indicator of license availability is calculated by dividing the number of licenses held by the insurance company by the maximum number of licensed types of insurance services in the country.

Similarly, we can calculate the life of an insurance company, which also indicates stability. It means that the lifespan of the insurance company is divided by the lifespan of the insurance company in Ukraine.

The choice of an insurance company may be influenced by the proportion of shares owned by non-residents, as confidence in companies with foreign capital is significantly higher than in domestic ones. The share of foreign companies is calculated according to the following scheme: if the company has no foreign investment, it is 0; if the share of foreign investment is less than 50%, it is .50; if it is 50% or more, the corresponding ratio is indicated.

The activity of insurance policy on the Internet can be a decisive factor in choosing an insurance company. The indicator of social activity (SP) consists of four components, namely the number of Facebook subscribers, mentions of the company on social networks, search queries about the company, and mentions in the media.

The information base for calculations is formed on the basis of data provided by the Ministry of Finance of Ukraine, the National Bank of Ukraine for 2020-2021, financial statements of insurance companies and other public information. As a result, a sample of 19 insurance companies was created, the information about which is presented most fully.

### 5. Results and Discussions

In accordance with the above model of finding an integrated indicator of competitive advantages of an insurance company, the calculations of this indicator were carried out.

Indicators of reliability of insurance companies in Ukraine in 2020 and its components are given in Tab. 2.

According to the data of calculations, the most reliable companies are 'ASKA' and 'ASKA'. According to the results of calculations, the most reliable companies are 'ASKA' and 'ASKA'. ARX has a reinsurance level of 6%, it assumes 94% of all risks, which can be dangerous if there are any fluctuations in the insurance market. On the other hand, its financial result in 2020 was the largest among the companies and amounted to UAH 298,658,000. It means that reinsurance is not required for this company. Thus, the indicator of a reinsurance level should be compared with the financial result.

To obtain the final values of insurance companies’ quality rating, it is necessary to perform preliminary calculations. Thus, the structure indicators of the IC insurance portfolio and its components are given in Tab. 4.

The balance of the insurance portfolio provides a share of at least 50% for compulsory types of insurance and at least 40% for voluntary types of insurance. If one of the conditions is met, the indicator of 0.5 is set; if both conditions are met, the indicator is 1; if there are other cases, there will be specific shares. Thus, ‘Insurance company UPSK’, ‘Kniazh VIG’, ‘Oranta’ and ‘Euroins Ukraine’ have balanced insurance portfolios.
Table 2: Indicators of reliability of insurance companies in Ukraine

| Company name                  | Financial stability | The level of insurance payments | Level of reinsurance | Reliability of insurance companies |
|-------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|
| 1 ASKA                        | 2.27                | .24                             | .67                  | 3.18                              |
| 2 Ingo                        | 2.38                | .47                             | .19                  | 3.04                              |
| 3 Ukrainian insurance group   | 2.12                | .48                             | .27                  | 2.87                              |
| 4 Uniqa                       | 2.24                | .49                             | .13                  | 2.86                              |
| 5 Kniazha VIG                 | 2.17                | .39                             | .27                  | 2.83                              |
| 6 Arsenal Insurance           | 2.25                | .36                             | .18                  | 2.78                              |
| 7 Universalna                 | 2.30                | .31                             | .15                  | 2.76                              |
| 8 European Insurance Alliance | 2.05                | .28                             | .41                  | 2.74                              |
| 9 ARX                         | 2.27                | .38                             | .06                  | 2.70                              |
| 10 VUSO                       | 2.12                | .34                             | .18                  | 2.64                              |
| 11 CI USI                     | 1.87                | .40                             | .14                  | 2.41                              |
| 12 PZU Ukraine                | 1.30                | .61                             | .16                  | 2.36                              |
| 13 Alpha Stralohanie          | 2.03                | .27                             | .02                  | 2.32                              |
| 14 Krayina                    | 1.78                | .49                             | .02                  | 2.30                              |
| 15 IG TAS                     | 1.77                | .44                             | .06                  | 2.27                              |
| 16 Euroins Ukraine            | 1.67                | .32                             | .23                  | 2.22                              |
| 17 Insurance company UPSK     | 1.63                | .39                             | .01                  | 2.03                              |
| 18 Oranta                     | 1.45                | .40                             | .05                  | 1.91                              |
| 19 Colonnade Ukraine          | 1.50                | .31                             | .09                  | 1.89                              |

Source: completed by the authors according to the ratings of insurance companies in Ukraine (2021)

Table 3: Indicators of financial stability of insurance companies in Ukraine

| Company name                  | Solvency | Probability of non-bankruptcy | Capitalization | Financial stability |
|-------------------------------|----------|-------------------------------|----------------|--------------------|
| 1 Ingo                        | .49      | .89                           | 1              | 2.38               |
| 2 Universalna                 | .46      | .84                           | 1              | 2.30               |
| 3 ARX                         | .46      | .81                           | 1              | 2.27               |
| 4 ASKA                        | .40      | .87                           | 1              | 2.27               |
| 5 Arsenal Insurance           | .29      | .96                           | 1              | 2.25               |
| 6 Uniqa                       | .43      | .82                           | 1              | 2.24               |
| 7 Kniazha VIG                 | .29      | .88                           | 1              | 2.17               |
| 8 Ukrainian insurance group   | .15      | .97                           | 1              | 2.12               |
| 9 VUSO                        | 1.13     | .50                           | .50            | 2.12               |
| 10 European Insurance Alliance| .72      | .93                           | .40            | 2.05               |
| 11 Alpha Strahovanie          | .67      | .86                           | .50            | 2.03               |
| 12 CI USI                     | .89      | .99                           | 0              | 1.87               |
| 13 Krayina                    | .92      | .86                           | 0              | 1.78               |
| 14 IG TAS                     | .40      | .88                           | .50            | 1.77               |
| 15 Euroins Ukraine            | .43      | .74                           | .50            | 1.67               |
| 16 Insurance company UPSK     | .45      | .68                           | .50            | 1.63               |
| 17 Colonnade Ukraine          | .73      | .77                           | 0              | 1.50               |
| 18 Oranta                     | .45      | .00                           | 1              | 1.45               |
| 19 PZU Ukraine                | .42      | .88                           | 0              | 1.30               |

Source: completed by the authors according to the ratings of insurance companies in Ukraine (2021)

Quality indicators of insurance companies with their components are given in Tab. 5. Leaders among the insurance companies in terms of quality rating are ‘IG TAS’, ‘VUSO’, ‘Ukrainian insurance group’, and ‘ARX’ mainly due to the fact that all requirements of analysis are met. All companies have the appropriate customer service. It may be necessary to improve this indicator by having, for example, chat bots that can communicate and answer questions instead of support service.

Programs that allow you to determine the cost of insurance policies online are also not a very significant competitive advantage, and their absence is rather a deviation from the normal pattern. The insurance company ‘Ingo’ cannot provide the cost of the policy without an application via e-mail. In ‘CI USI’, the cost of the policy cannot be calculated due to the temporary suspension of operating licenses. ‘Colonnade Ukraine’ calculates the cost of the policy only by car plates, it is impossible to perform according to the parameters of a car.
### Table 4: Calculation of the structure of the insurance portfolio

| Company name                    | Share of compulsory types of insurance | Share of voluntary types of insurance | Structure Indicator of the insurance portfolio |
|---------------------------------|----------------------------------------|---------------------------------------|-----------------------------------------------|
| 1 Insurance company UPSK       | .50                                    | .40                                   | .90                                           |
| 2 Kniazha VIG                  | .39                                    | .50                                   | .89                                           |
| 3 Euroins Ukraine              | .49                                    | .36                                   | .86                                           |
| 4 IG TAS                       | .36                                    | .50                                   | .86                                           |
| 5 Oranta                        | .50                                    | .29                                   | .79                                           |
| 6 Universalna                  | .22                                    | .50                                   | .72                                           |
| 7 CI USI                       | .50                                    | .22                                   | .72                                           |
| 8 Krayina                      | .22                                    | .50                                   | .72                                           |
| 9 PZU Ukraine                  | .18                                    | .50                                   | .68                                           |
| 10 VUSO                        | .18                                    | .50                                   | .68                                           |
| 11 Arsenal Insurance           | .17                                    | .50                                   | .67                                           |
| 12 Ingo                        | .11                                    | .50                                   | .61                                           |
| 13 Ukrainian insurance group   | .09                                    | .50                                   | .59                                           |
| 14 ARX                         | .08                                    | .50                                   | .58                                           |
| 15 Uniqa                       | .06                                    | .50                                   | .56                                           |
| 16 ASKA                        | .02                                    | .50                                   | .52                                           |
| 17 Alpha Strahovanie           | .00                                    | .50                                   | .50                                           |
| 18 Colonnade Ukraine           | .00                                    | .50                                   | .50                                           |
| 19 European Insurance Alliance | .00                                    | .50                                   | .50                                           |

**Source:** completed by the authors according to the ratings of insurance companies in Ukraine (2021)

### Table 5: Indicators of service quality of insurance companies in Ukraine

| Company name                  | The structure of the insurance portfolio | Designer programs | Level of service | Discount system | Quality of services |
|-------------------------------|-----------------------------------------|-------------------|-----------------|----------------|---------------------|
| 1 IG TAS                      | .86                                     | 1                 | 1               | 1              | 3.86                |
| 2 VUSO                        | .68                                     | 1                 | 1               | 1              | 3.68                |
| 3 Ukrainian insurance group  | .59                                     | 1                 | 1               | 1              | 3.59                |
| 4 ARX                         | .58                                     | 1                 | 1               | 1              | 3.58                |
| 5 Insurance company UPSK     | .90                                     | 1                 | 1               | 0              | 2.90                |
| 6 Kniazha VIG                 | .89                                     | 1                 | 1               | 0              | 2.89                |
| 7 Euroins Ukraine             | .86                                     | 1                 | 1               | 0              | 2.86                |
| 8 Oranta                      | .79                                     | 1                 | 1               | 0              | 2.79                |
| 9 Krayina                     | .72                                     | 1                 | 1               | 0              | 2.72                |
| 10 Universalna                | .72                                     | 1                 | 1               | 0              | 2.72                |
| 11 PZU Ukraine                | .68                                     | 1                 | 1               | 0              | 2.68                |
| 12 Arsenal Strahovanie        | .67                                     | 1                 | 1               | 0              | 2.67                |
| 13 Ingo                       | .61                                     | 0                 | 1               | 1              | 2.61                |
| 14 Uniqa                      | .56                                     | 1                 | 1               | 0              | 2.56                |
| 15 ASKA                       | .52                                     | 1                 | 1               | 0              | 2.52                |
| 16 Alpha insurance            | .50                                     | 1                 | 1               | 0              | 2.50                |
| 17 European Insurance Alliance| .50                                     | 1                 | 1               | 0              | 2.50                |
| 18 CI USI                     | .72                                     | 0                 | 1               | 0              | 1.72                |
| 19 Colonnade Ukraine          | .50                                     | 0                 | 1               | 0              | 1.50                |

**Source:** completed by the authors according to the ratings of insurance companies in Ukraine (2021)

However, the system of discounts and promotions is a significant competitive advantage. In particular, the company ARX offers discounts when applying for a policy online for 7 minutes, a 10% discount for installing the Smart Drive application. Discounts up to 25% are provided for the following driving indicators: do not exceed the speed limit and do not use the phone while driving, which are recorded by the Smart Drive application. ‘Ingo’ offers a 5% discount on passing the test, other insurers have only promotional offers.

The results of calculations of competitiveness indicators of insurance companies in Ukraine are presented in Tab. 6.

In terms of competitiveness, the leader is ‘ARX’, which has one of the largest assets and premiums collected. According to the number of compliance points specified in the Comprehensive Information System of the National Bank of Ukraine, it ranks second within 179 NBU points (2021). Oranta Insurance Company has the largest number of compliance points — 800, which allows the company to be in the top three.

The position of companies in the insurance market and the components of this indicator are given in Tab. 7.
Table 6: Competitiveness indicators of insurance companies in Ukraine

| Company name          | Ranking among 50 companies | Pricing policy | Share of legal entities | Office network | Competitiveness |
|-----------------------|----------------------------|----------------|--------------------------|----------------|-----------------|
| 1 ARX                 | .98                        | .95            | .39                      | .22            | 2.54            |
| 2 Uniqa               | .94                        | .89            | .55                      | .04            | 2.43            |
| 3 Oranta              | .80                        | .47            | .15                      | 1.00           | 2.42            |
| 4 Ukrainian insurance group | 1.00                 | .79            | .53                      | .07            | 2.40            |
| 5 Ingo                | .90                        | .68            | .66                      | .05            | 2.29            |
| 6 Arsenal Strahovanie | .88                        | .74            | .47                      | .04            | 2.12            |
| 7 PZU Ukraine         | .96                        | .63            | .43                      | .07            | 2.08            |
| 8 IG TAS              | .92                        | .84            | .31                      | .00            | 2.07            |
| 9 ASKA                | .72                        | .37            | .84                      | .07            | 2.00            |
| 10 Universalna        | .82                        | .42            | .60                      | .04            | 1.88            |
| 11 VUSO               | .78                        | .58            | .26                      | .06            | 1.68            |
| 12 Alpha insurance    | .74                        | .53            | .37                      | .00            | 1.64            |
| 13 Kniazha VIG        | .84                        | .32            | .34                      | .05            | 1.54            |
| 14 Insurance company UPSK | .68                    | .26            | .28                      | .20            | 1.43            |
| 15 Colonnade Ukraine  | .58                        | .00            | .80                      | .00            | 1.38            |
| 16 Euroins Ukraine    | .56                        | .11            | .35                      | .17            | 1.19            |
| 17 Krayina            | .42                        | .21            | .50                      | .01            | 1.14            |
| 18 European Insurance Alliance | .26              | .05            | .80                      | .02            | 1.13            |
| 19 CI USI             | .62                        | .16            | .30                      | .00            | 1.08            |

Source: completed by the authors according to Forinsurer™ (2021а), NBU (2021а)

Table 7: Characteristics of insurance companies in the Ukraine’s insurance market in 2020

| Company name          | Availability of licenses | Proportion of shares of foreign companies | Lifespan of companies | Position in the insurance market |
|-----------------------|--------------------------|----------------------------------------|-----------------------|----------------------------------|
| 1 Uniqa               | .52                      | 1.00                                   | .87                   | 2.39                             |
| 2 Ingo                | .48                      | .99                                    | .87                   | 2.34                             |
| 3 Euroins Ukraine     | .43                      | .94                                    | .94                   | 2.31                             |
| 4 ARX                 | .42                      | 1.00                                   | .87                   | 2.29                             |
| 5 Kniazha VIG         | .50                      | .99                                    | .77                   | 2.26                             |
| 6 IG TAS              | .58                      | 1.00                                   | .68                   | 2.26                             |
| 7 PZU Ukraine         | .52                      | .83                                    | .90                   | 2.25                             |
| 8 Oranta              | .58                      | .72                                    | .87                   | 2.17                             |
| 9 Colonnade Ukraine   | .40                      | 1.00                                   | .74                   | 2.14                             |
| 10 Alpha insurance    | .43                      | .95                                    | .68                   | 2.06                             |
| 11 European Insurance Alliance | .58              | .50                                    | .87                   | 1.95                             |
| 12 Insurance company UPSK | 1.00                   | .00                                    | .94                   | 1.94                             |
| 13 Ukrainian insurance group | .48              | .75                                    | .68                   | 1.91                             |
| 14 ASKA               | .68                      | .00                                    | 1.00                  | 1.68                             |
| 15 Universalna        | .53                      | .00                                    | .97                   | 1.50                             |
| 16 VUSO               | .83                      | .00                                    | .65                   | 1.48                             |
| 17 Krayina            | .25                      | .00                                    | .87                   | 1.12                             |
| 18 Arsenal Strahovanie | .60                      | .00                                    | .52                   | 1.12                             |
| 19 CI USI             | .00                      | .00                                    | .55                   | .55                              |

Source: completed by the authors according to MinFin (2021)

The largest number of licenses 60 was lost by the insurance company UPSK in 2020. The insurance company USI was temporarily deprived of licenses on April 20, 2021. Therefore, today it performs its duties only under previously concluded contracts in full (NBU, 2021b).

Among the 19 companies, only 7 do not have shares owned by foreign companies, so for them the corresponding figure is 0. Nowadays, the indicator that characterizes the lifespan of companies somewhat has lost its relevance. After all, with the advent of the concept of startup projects, it is necessary to assess the lifespan of companies in combination with the market share that companies have managed to win over this period.

Social activity of insurance companies with relevant components is given in Tab. 8. The most socially active insurance companies are ‘ARX’, ‘Arsenal Strahovanie’, ‘Alpha Insurance’ since they have their own pages on Facebook, Twitter, Telegram, Viber, Instagram,
YouTube, and Tiktok. That is why ‘ARX’ has record insurance premiums and pays attention to the number of solvent subscribers on Facebook and increases its presence in other social networks.

The obtained results of the integrated indicator of competitive advantages of insurance companies in Ukraine are given in Table 9. The table also contains the values of five groups of indicators, the weighted sum of which forms an integrated indicator. They are the reliability of an IC, the quality of services, competitiveness, the market position in the insurance market, and social activity. The coefficients of importance in the above calculations are equal to 1. However, if necessary, their value can be changed using the method of expert assessments.

### Table 8: Indicators of social activity of insurance companies in Ukraine in 2020

| Company name                  | Facebook | Social networks | Google search queries | Mentioned in the media | Social activity |
|-------------------------------|----------|-----------------|-----------------------|-------------------------|-----------------|
| ARX                           | 1.00     | 1.00            | .52                   | .02                     | 2.54            |
| Arsenal Strahovanie           | .26      | .43             | 1.00                  | .66                     | 2.35            |
| Alpha insurance               | .10      | .29             | .65                   | 1.00                    | 2.05            |
| Uniqa                         | .72      | .43             | .02                   | .10                     | 1.27            |
| PZU Ukraine                   | .84      | .29             | .02                   | .04                     | 1.19            |
| IG TAS                        | .95      | .14             | .02                   | .04                     | 1.16            |
| Ingo                          | .42      | .57             | .03                   | .04                     | 1.06            |
| Insurance company UPSK        | .32      | .43             | .03                   | .00                     | .79             |
| VUSO                          | .33      | .29             | .02                   | .00                     | .64             |
| Euroins Ukraine               | .15      | .43             | .03                   | .02                     | .62             |
| European Insurance Alliance   | .29      | .14             | .04                   | .10                     | .56             |
| Universalna                   | .27      | .14             | .09                   | .06                     | .55             |
| Colonnade Ukraine             | .10      | .43             | .00                   | .00                     | .53             |
| Kniazha VIG                   | .20      | .29             | .02                   | .01                     | .52             |
| CI USI                        | .20      | .14             | .08                   | .01                     | .44             |
| Oranta                        | .00      | .29             | .05                   | .04                     | .38             |
| ASKA                          | .18      | .14             | .03                   | .01                     | .36             |
| Ukrainian insurance group     | .03      | .14             | .01                   | .05                     | .23             |
| Krayina                       | .00      | .00             | .03                   | .01                     | .23             |

Source: completed by the authors based on social media data

### Table 9: An integrated indicator of competitive advantages of Ukrainian insurance companies in 2020

| Company name                  | Reliability of Insurance Company | Quality of services | Competitiveness | Position in the insurance market | Social activity | An integrated indicator of competitive advantages |
|-------------------------------|----------------------------------|---------------------|-----------------|----------------------------------|-----------------|-----------------------------------------------|
| ARX                           | 2.70                             | 3.58                | 2.54            | 2.29                             | 2.54            | 13.65                                         |
| IG TAS                        | 2.27                             | 3.86                | 2.07            | 2.26                             | 1.16            | 11.62                                         |
| Alpha insurance               | 2.86                             | 2.56                | 2.43            | 2.39                             | 1.27            | 11.50                                         |
| Uniqa                         | 3.04                             | 2.61                | 2.29            | 2.34                             | 1.06            | 11.35                                         |
| Ingo                          | 2.78                             | 2.67                | 2.12            | 1.12                             | 2.35            | 11.04                                         |
| Arsenal Strahovanie           | 2.87                             | 3.59                | 2.40            | 1.91                             | 0.23            | 11.00                                         |
| PZU Ukraine                   | 2.36                             | 2.68                | 2.08            | 2.25                             | 1.19            | 10.56                                         |
| Alpha insurance               | 2.32                             | 2.50                | 1.64            | 2.06                             | 2.03            | 10.56                                         |
| VUSO                          | 2.64                             | 3.68                | 1.68            | 1.48                             | 0.64            | 10.12                                         |
| Kniazha VIG                   | 2.83                             | 2.89                | 1.54            | 2.26                             | 0.52            | 10.05                                         |
| ASKA                          | 3.18                             | 2.52                | 2.00            | 1.68                             | 0.36            | 9.74                                          |
| Oranta                        | 1.91                             | 2.79                | 2.42            | 2.17                             | 0.38            | 9.68                                          |
| Universalna                   | 2.76                             | 2.72                | 1.88            | 1.50                             | 0.55            | 9.42                                          |
| Euroins Ukraine               | 2.22                             | 2.86                | 1.19            | 2.31                             | 0.62            | 9.20                                          |
| Insurance company UPSK        | 2.03                             | 2.90                | 1.43            | 1.94                             | 0.79            | 9.08                                          |
| European Insurance Alliance   | 2.74                             | 2.50                | 1.13            | 1.95                             | 0.56            | 8.89                                          |
| Colonnade Ukraine             | 1.89                             | 1.50                | 1.38            | 2.14                             | 0.53            | 7.45                                          |
| Krayina                       | 2.30                             | 2.72                | 1.14            | 1.12                             | 0.03            | 7.31                                          |
| CI USI                        | 2.41                             | 1.72                | 1.08            | 0.55                             | 0.44            | 6.20                                          |

Source: completed by the authors based on Tab. 2, 5-8.
Thus, the insurance company ARX has the greatest competitive advantages. Its competitive advantages include compliance of the authorized capital with legal norms; availability of a well-thought-out system of discounts; balanced pricing policy (according to the results of 2020, the company collected the largest number of insurance premiums); developed office network; presence in all possible social networks; the largest number of followers on Facebook. And although ‘ARX’ was the leader in only 2 of the 5 blocks of the analysis, it was confident in the top five.

The group of leaders in the insurance market also included 8 more companies, which took places from 2 to 9 (Tab. 9). It should be emphasized that ‘ARX’, ‘IG TAS’, ‘Uniqa’, ‘Ingo’, which took the first four positions, have high values of reliability and quality of insurance services.

Analyzing the competitive advantages of the companies, we can say that the key to success is customer focus. It is not only about attracting new customers, but also retaining existing ones. An example is the experience of the insurer ARX in introducing a whole system of discounts to encourage the renewal of contracts.

In general, the key to gaining a competitive advantage by any company is stable development in all areas of expertise simultaneously.

For comparison, the rating of insurance companies by value of assets and collected insurance premiums was also calculated (Tab. 10). This table illustrates that the ratings of the IC on competitive advantages and insurance premiums are quite close.

**Table 10:** Comparison of ratings of insurance companies in Ukraine

| Company name            | Competitive advantage rating | Asset rating | Insurance premium rating |
|-------------------------|------------------------------|--------------|--------------------------|
| ARX                     | 1                            | 2            | 1                        |
| IG TAS                  | 2                            | 5            | 3                        |
| Uniqa                   | 3                            | 4            | 2                        |
| Ingo                    | 4                            | 6            | 6                        |
| Arsenal Strahovanie     | 5                            | 7            | 5                        |
| Ukrainian insurance group | 6                            | 1            | 4                        |
| PZU Ukraine             | 7                            | 3            | 7                        |
| Alpha insurance         | 8                            | 12           | 9                        |
| VUSO                    | 9                            | 11           | 8                        |
| Kniaż ORAZA VIG         | 10                           | 8            | 13                       |
| ASKA                    | 11                           | 13           | 12                       |
| Oranta                  | 12                           | 10           | 10                       |
| Universalina            | 13                           | 9            | 11                       |
| Euroins Ukraine         | 14                           | 17           | 17                       |
| Insurance company UPSK  | 15                           | 14           | 14                       |
| European Insurance Alliance | 16                        | 19           | 18                       |
| Colonnade Ukraine       | 17                           | 16           | 19                       |
| Krayina                 | 18                           | 18           | 15                       |
| CI USI                  | 19                           | 15           | 16                       |

**Source:** completed and calculated by the authors

The correlation between competitive advantage and premiums, estimated by the correlation coefficient, is 0.94, which indicates a very high dependence. Thus, the presence of competitive advantages significantly affects the collected insurance premiums, and this requires constant development and high value for the consumer.

### 6. Conclusion

The results of the study allow us to draw the following conclusions. The insurance market in Ukraine is developing dynamically. At the same time, there is a need for further concentration of this market. This is due to the large number of small insurance companies. Such companies are not always able to provide quality and reliable services. Traditional insurance companies already operating in the market find it increasingly difficult to remain competitive against new trends, technologies and relatively low insurance premiums.

Insurance companies do not sufficiently innovate insurance products and introduce new services that cover new markets and risks. For example, the company ‘Hiscox’, based in Bermuda, has recently announced that it offers a new type of cyber insurance. It not only provides protection against cyber attacks, but also offers cybersecurity seminars and training modules designed to reduce the risks of future attacks.

Not all companies provide customers with a transparent calculation of insurance rates. Most policyholders would like their insurer to perform actuarial calculations to determine a more accurate premium. It is worth noting that the level of customer service, as well as online programs for calculating the cost of the policy are provided by all companies, so it is no longer a significant competitive advantage. Insurers’ feedback needs to be improved by having, for example, chatbots that can answer questions instead of support.

The companies’ strategy is mainly aimed at attracting new customers. The issue of improving the quality of service to existing customers is not always a priority. What is the incentive for loyal customers to remain customers of an insurance company that gives priority to new customers at their expense? Companies need to pay attention to discounts and promotional offers, which were found in only 5 of the 19 analyzed entities. Insurers need to constantly think about what additional benefits they can offer their regular customers. This is not necessarily a cheaper insurance premium. For example, the insurance company Vitality offers its customers discounts on Starbucks drinks and vouchers for going to the cinema.

Domestic companies do not use all the benefits of scientific and technological progress. For example, the insurance company Lapetus uses customer identification technology and predicts the likelihood of future health problems. This means fewer administrative tasks and reduced costs. It is also possible to create chatbots and automated processing of customer requests. This will allow insurers to offer faster and more efficient interactions on the right channel at the right time.

An urgent issue is the creation of an optimal office network of the company, which is a certain attraction for consumers of insurance services. For a national company, branches must be located in each regional center. However, an excessive number of offices can also be a weak point for the company itself.

Often companies do not pay attention to the possibilities of optimal use of customer base data. It must be available and applied at all times. If, for example, the insurer knows that the customer does not respond to emails, but often interacts with messengers, these benefits should be considered for feedback.

Some insurance companies have not yet realized the fact that in order to strengthen competitive advantages, it is necessary to constantly monitor the ratio of certain assets and liabilities, comply with legislation on authorized capital and use the probability of bankruptcy as an indicator of urgent changes in financial management.

The greatest competitive advantages are received by those insurance companies that develop constantly in all directions simultaneously. By identifying their weaknesses and turning them into strengths, creating unique quality and (or) value propositions, companies significantly increase their attractiveness to consumers.
Increased amounts of insurance premiums become a fair reward for the acquired competitive advantages, which is insurers’ ultimate goal in the market.

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8. Competing interests

The authors declare that they have no competing interests.

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