



PERCEPTION OF COMPETITIVENESS OF INSURANCE COMPANIES IN THE SLOVAK REPUBLIC BASED ON SETTLEMENT AND COMPARISON OF COMPETITIVENESS INDEXES

Elena ŠIRÁ

Faculty of Management
University of Prešov
Prešov, Slovak Republic
elena.siraj@gmail.com

Abstract

This article deals with competitiveness of insurance companies in Slovak Republic. The main goal of this article is to define the competitiveness factors of insurance companies and based on this to set the index of competitiveness for commercial insurance companies (IKPOI). At the end, there were defined 2 competitiveness indexes, competitiveness index declared by insurance companies (IKPOIp) and competitiveness index declared by population (IKPOIo). Mentioned 2 indexes were tested on conformance of the middle values.

Keywords: competitiveness, insurance companies, index of competitiveness of insurance companies (IKPOI), KAM methodology

JEL classification: G22, O16

1. INTRODUCTION

In the market economy the competitiveness affects all activities associated with man and society. Definition of the term is derived from the customer's freedom to decide what to buy and from whom. This fact leads to competition among potential suppliers to convince customer to purchase the right product that best meets the customers' needs.

Insurance market is the place, bringing together supply and demand in insurance. This includes all relationships among sellers and buyers who use the exchange as a subject for concluding their insurance policies. The basic entities of the insurance market are insurance companies, brokers, reinsurance companies, clients and institutions performing supervision over insurance market. Insurance services, i. e. insurance protection, are specific products made for the insurance market (Kafková, 2004; Čejková, 2002; Daňhel, 2005; Rejda, 2005; Majtánová, 2006; and Ducháčková, 2005). Insurance coverage as the need arises in every society on the basis of the various risks. It constitutes a system for the various market instruments and regulatory measures ensuring the flow of funds and insurance services among the parties of the insurance market on the principle of conditional return and nonequivalence.

2. SOME DEFINITIONS OF COMPETITIVENESS

The definition of competitiveness by Borovský is given in the introduction. We have chosen this definition because it contains many aspects of competitiveness, and secondly, because aspects of competitiveness defined by the author are suitable for application of specific conditions of the insurance market.

Borovský (2009) defines competitiveness as: "The ability of the company to offer the same or better conditions to the customer." It highlights that not all factors of competitiveness are objective in nature and often not even measurable. In a broader sense, competitiveness is superposition of the following factors:

- product and portfolio of offers,
- communication skills in relation to customer,
- responsiveness to customer requirements,
- overall performance of the company,
- the ability to create strategic alliance relationships with suppliers and with customers,
- capital strength,
- facilities and conditions of the region (country), in which the enterprise operates.

Borovský perceives the competitiveness as a result of several factors affecting the company. The product is the main source of competitiveness in the insurance market. The product in this case, is a special service, which is partly the same for all clients, but a part of it can be tailored to individual client's needs. The product is therefore a flexible element in commercial insurance company. When comparing the competitiveness of commercial insurance businesses, the first place is devoted to assessment of product portfolios. Product portfolio is often the most decisive factor in choosing a particular commercial insurance.

Another important factor in the competitiveness of commercial insurance companies is communication with existing and potential clients. The accurate, appropriate time scheduled and addressed communication facilitates the sale of insurance products. Due to specific elements of insurance industry not all potential clients are aware of their need in the form of insurance protection the insurance company should attract clients by their products via efficient communication.

In general, all businesses, including commercial insurance must sufficiently and in the right time adapt their offer to client needs. Insurance products have specific advantage in creating dynamic and adaptable product reflecting the individual needs of a client.

Borovský includes in his definition also other factors of competitiveness such as complex business activity and capital strength. The performance of commercial insurance companies on the market is mainly observed by clients by means of annual assessment of the best commercial insurance companies in Trend magazine and by the evaluation of product quality in various national competitions and awards. In the case of commercial insurance business, their goodwill is a very important aspect influencing customers when choosing commercial insurance company.

Last but not least important aspects of competitiveness are the conditions of the country where commercial insurance company operates. An important indicator of the performance of insurance industry and economic level of the country is the indicator of written premiums to gross domestic product ratio.

"The competitiveness can be understood as the ability of a company, sector or country to succeed in domestic the competition, as well as in foreign competition among the leading companies or countries and to ensure at least a mid-term prosperity, while the target is a

long-term sustainable prosperity." (Štefko, 2001, p. 9) In this definition, the author emphasizes mostly the future of the company, i.e. medium, or respectively long-term sustainable prosperity as a result of gaining the leading position of the business entity in competition.

In the Slovak insurance industry, the number of commercial insurance companies in the market has been stabilized in recent years and these commercial insurance companies have been currently active in the market for several years (Širá, 2009).

Competitiveness can be seen as the ability of entrepreneurs to explore different ways (options) to increase market share and adapt to conditions of uncertainty. Generally it has two aspects, namely the ability to face the influx of competitors and the ability to manage the offensive strategy toward competitors. (Benešová, 2008) The author highlights the personality of the entrepreneur as the main creator of competitiveness in an enterprise. The following definition adds, beside the personality of the entrepreneur, the capital as an inevitable component of establishing competitiveness. Competitiveness according to Šrédľ (Rajčaniová, 2006) means particularly optimal utilization of human and capital resources.

In the insurance industry, the major competitive player is not exclusively the owner, respectively manager, but the staff and insurance intermediaries, as they are the intermediary between insurance products and client needs. The commercial insurance products may be on the market, but when the clients are not informed and cannot define their needs in relation to risk and its subsequent transfer to the insurance company, therefore it is not possible for insurance company to perform in such market.

Competitiveness explained by Slaný (2006, p. 23) is: "The ability of the company to succeed in competition with other companies." The result of this competition is successful establishment displayed by economic performance and financial indicators. In this case, it is competitiveness in the market of products and services, where the companies compete for potential customers.

Measuring of competitiveness via financial indicators is one of the first precise evaluations of the current financial situation and its competitiveness. In financial assessment of the commercial insurance companies, there are used special indicators displaying the financial situation of insurance company. These indicators reflect the unique features of insurance, as well as its performance on investment [1] and on real insurance market [2].

The former definitions explain the competitiveness according to several features and as a source of competitiveness are considered a variety of stimuli. Most comprehensive definition of competitiveness is the definition of Borovský, which contains the group of seven factors affecting competitiveness; some of them were already mentioned in definitions of above mentioned authors as the main source of competitiveness.

Štefko and Slaný as a source of competitiveness comprehend the ability to maintain in competition. The only author, Štefko, included in his definition of competitiveness the factors of future, where the emphasis is mainly on the medium, resp. long-term sustainable prosperity as a result of enforcement of the enterprise in competition. Personality of the entrepreneur or the human resources are identified in definitions of the two authors, Benešová and Šrédľ, who introduces another factor – capital as the main factors of competitiveness.

As described above, the definition of competitiveness varies in many ways, especially in the key factors determining competitiveness. But, on the other hand, the above definitions contain some common features, as mentioned by the authors.

Professional literature describes the competitiveness of businesses performing services mostly verbally, i.e. it describes its various characteristics. As a basis for establishing competitive model, which will serve as a starting point for the index of competitiveness, the

individual factors that affect competitiveness have had to be defined. In the specification of factors affecting competitiveness, we were inspired by the methodology KAM (Knowledge Assessment Methodology).

The KAM methodology is based on 4 key areas, and the results observed in these areas determine the indices of competitiveness. Although it is aimed at assessment of different countries, we were inspired to design the competitiveness indices for different commercial insurance companies in one country. The competitiveness assessment of commercial insurance businesses does not exist either in the literature in Slovakia nor in the neighbouring countries. We can conclude that the indices of competitiveness are not discussed in any professional books in our country. This paper is unique in bringing together the two important areas, namely competitiveness and insurance industry and makes them overlap, and also quantifies the level of competitiveness through the proposed Competitiveness Index.

2.1. KAM Methodology

To facilitate the transition process to knowledge economy, the World Bank has developed the Knowledge Assessment Methodology (KAM). This methodology is based on the 4 pillars of the Knowledge Economy framework. They are:

- Economic Incentive and Institutional Regime,
- The Innovation System,
- Education and Human Resources,
- Information and Communication Technology (Chen - Dahlman, 2005).

Countries and companies need to understand their strengths and weaknesses to be better than the others. This methodology is based on comparison through 109 structural and qualitative indicators, which represents the four pillars of knowledge economy (Chen - Dahlman, 2005). Every pillar is represented by 3 variables, so globally, there are 12 knowledge indicators and 2 indicators are dedicated to global performance of economy. (KAM Working Paper, 2010) KAM is useful for identifying the problems and opportunities, which countries or companies may face. This methodology uses the scale (0-10) to evaluate the indicators, where 0 is the weakest value and 10 the strongest value (KAM Working Paper, 2010).

3. AIMS AND METHODOLOGY

The subject matter of the research is competitiveness of insurance companies. The objects of research are the commercial insurance companies operating in Slovakia. The legal form of commercial insurance companies is a public limited company (plc). 22 insurance companies operated on the Slovak insurance market by 31/05/2009. These firms can be divided into universal insurance companies, offering products of the life and general insurance at the same time, then the insurance companies offering life insurance and insurance companies offering non-life insurance.

Based on the current situation in competitiveness in the Slovak Republic, as well as on analyses of foreign authors who deal with competitiveness we have set the following goal: to define the competitiveness factors of insurance companies and based on this to set the index of competitiveness for commercial insurance companies.

Partial objectives are:

- to determine factors the competitiveness of insurance companies,

- to identify perception of competitiveness of insurance companies by customers and potential customers via questionnaire – the size of the sample was 105 respondents. Respondents were chosen via stratified random selection according to their age. We asked more respondents, but only 105 questionnaires were returned to us and correctly filled out, so that we can evaluate,
- to determine the index of competitiveness for commercial insurance companies.

In this research, we used two questionnaires as a source of information.

- Questionnaire 1 was designed and distributed to the entire file, i.e. to all 22 commercial insurers operating in the Slovak insurance market by 31.5.2009. In this questionnaire, we examined the perception of competitiveness by the insurance companies.
- Questionnaire 2 was applied on the research group (selected citizens), which choice was conducted by a random selection method. We approached randomly selected respondents through personal and e-mail communication. We tried to focus on the population in the age group 19-59 years to ensure the validity of the sample, because this age group has most experiences with insurance services and insurance companies. Respondents falling outside this age range were excluded from the sample examined. Since we have contacted respondents personally, their common characteristic is belonging to a particular region. We tried to limit this effect, but even though our sample included respondents from 1 / 3 of the SR territory. All of respondents were randomly selected and in addition to common regional background had no other common characteristics.

Questionnaire 2 was designed to clients and potential clients of insurance companies. In it, we examined in detailed how people perceive the competitiveness of the given insurance company, what factors affect them in the choice of insurance companies. The research group was divided according to the age. We focused on the age group of 19-59 years, which was further divided into subgroups 19-29 years and 30-59 years, as described further on. There are also mentioned other age groups which were not included in the research.

Age group of 0-18 years consists of children and the youth, who do not work but are actively preparing for their future careers. Occasional income from voluntary works of 16-18 year olds in this case is not taken into account as an income, since this money is mostly used to purchase consumer goods. This age group has got in most cases life insurance in insurance policies of their parents, which usually lasts until the 18 to 25 years of age. Usually, they do not make an agreement with insurance companies.

Age group of 19-29. This group is the target of our research. It is a key category for insurance companies, and therefore, they devote their attention to them. These are young people just entering the labour market. They begin to furnish their homes, to acquire higher value material things, to set up a family. This age group is most suitable for taking out an insurance policy - life insurance policy in respect to appropriate duration, as well as other insurance contracts, because they have regular income to invest into a property and tangible things of higher value such as cars, apartments, real estate, etc.

Age group of 30-59 years is important for our research. It means productive age group with majority already working. They have had work experience, some income and their own property. We assume that most insurance contracts have been concluded. If they intend to sign new insurance policy, they largely make decision about the company due to their own experience and satisfaction with the previous contracts.

Age group of 60 years and more - in this group we assume, that they are mostly already retired with the pension as their income. Insurance contracts have been signed for a long time. If necessary, they do not seek renewal of policies in other commercial insurance companies offering better benefits but are loyal to their insurance company. In this age group, the life insurance policies mature.

3.1. Model of competitiveness of commercial insurance companies

Knowledge, nowadays, is a significant competitive advantage. Businesses, industries, and regions, which are building knowledge management system have gained significant competitive advantage over their competitors. Therefore, we consider this methodology as an appropriate tool to identify competitive advantages for businesses.

We have mentioned above the definition of competitiveness by Borovský, where we can see some common features with the pillars of knowledge economy defined by methodology KAM. Indicators set by Borovský are listed first, similar indicators identified in the pillars of knowledge economy are given in brackets. Common features of Borovský and KAM:

- Capital strength (economic incentives),
- Communication skills (information infrastructure),
- Response to customer requirements (innovation system).

Based on these findings, we have built a model of competitiveness of insurance companies on these four bases:

- financial situation,
- human resources,
- innovation system,
- information infrastructure.

Questionnaires covered all 4 defined areas of competitiveness. From the financial situation, we focused only on the financial stability evaluation. Questionnaire research is not considered a suitable tool for detecting information concerning the financial situation and this is why we paid the slightest attention to this area, which is later reflected in the weight of this area compared to the remaining three areas.

In the field of human resources we have focused on quality of insurance workers' preparedness and evaluation of their activities. Data on these characteristics were drawn from the questionnaire sent to commercial insurance companies. In this area we have studied the behaviour, expertise, goodwill, ethics, the ways of informing about products by insurance policy conclusion and the number of sellers of insurance products from the perspective of clients. Basis for information about these attributes was the questionnaire sent to sample group of citizens.

In the section of innovative system, we discussed product innovation and the implementation of new forms of sales in insurance companies (the possibility of insurance policy conclusion on-line via the internet). We used data from the questionnaire for commercial insurance companies for this section. The questionnaire for the sample group of citizens served as a source of information to find out whether the product offer and the way of selling were adapted to the requirements of citizens.

We examined the influence of insurance companies on their clients through advertising, the forms and methods of informing customers about new products in the section of information infrastructure. Also in this case, we have received the answers to our questions

covering these areas from the questionnaire 1. The data about the way of presenting insurance company externally to clients, total awareness of insurance products, availability, transparency and clarity of information, use of the Web site to promote insurance company and insurance products as well as the effectiveness of advertising to influence by decision making about the selection of insurance company were elaborated from the questionnaire 2.

3.2. Thesis

We try to solve the problem, if competitiveness of insurance companies declared by insurance companies is on the same level as competitiveness declared by people.

Hypothesis: We suggest that there is a statistically significant difference between the level of competitiveness declared by insurance companies and the level of competitiveness perceived by the population in chosen region. .

On the basis of surveys among commercial insurance companies and the inhabitants of chosen region of Slovakia and the subsequent determination of indexes of competitiveness, we try to verify the hypothesis that there is a statistically significant difference between the level of competitiveness declared by insurance companies and the level of competitiveness perceived by the population in region.

Variables:

- level of competition declared by insurance companies (Insurance Competitiveness Index measured by the perception of insurance companies - IKPOIp)
- level of competition perceived by people (Insurance Competitiveness Index measured by the perception of the population - IKPOIo)

This hypothesis will be confirmed or rejected by the statistical hypothesis testing. Hypothesis will be tested at the significance level $\alpha = 0.05$. We test the null hypothesis against the alternative hypothesis:

- H_0 : the level of competition declared by insurance companies = residents perceived level of competitiveness
- H_1 : the level of competition declared by insurance companies \neq residents perceived level of competitiveness

Detection of variables:

The level of competition is expressed through insurance Competitiveness Index (IKPOI), which we obtained by examining the various factors that characterize competitiveness. Examination of these factors was realized by:

- the questions concerning the qualification of human resources (vendors) and training system,
- the questions about the products and their adaptation to market requirements, the use of new forms of sales of selected insurance products,
- the questions about methods and forms of product information publication, advertising and media selection for advertising,
- the financial situation detection,
- the evaluation of individual attributes,
- the calculation of the indices of insurance companies competitiveness (IKPOIp, IKPOIo)..

Verification of the relationship among variables:

- calculation and comparison of the competitiveness index values,

- compliance testing of the middle values from selected groups.

4. INDICES OF COMPETITIVENESS OF INSURANCE COMPANIES

Based on questionnaire investigation carried out among commercial insurance companies operating on 31 May 2009 on the Slovak insurance market and the inhabitants of chosen region of Slovakia and on the evaluation and scoring of respondents' answers, the competitive indices of insurance companies (IKPOI) were determined. We calculated two indices, namely IKPOIp measured by perception of insurance companies and IKPOIo measured by the perception of people.

Questions in the questionnaires were made up to cover all four thematic areas of competitive model, which we set above. We scored the answers to questions according to our subjective consideration in each area and calculated totals. Individual issues could achieve such scores:

- the scaled questions are usually scored by values 0-3, a value of 0 was assigned to a negative answer and a score of 3 was for the best response of a positive nature. Answer "do not know" was excluded from the calculation of indices. We usually use the scale of 5 possibilities. Negative answer was assigned to 0, less negative answer obtained 1 point, answer "do not know" was excluded, less positive answer obtained 2 points and positive answer obtained 3 points. Our scale was from 0 to 3 according to positive or negative answer. The negative and positive types of answer you can see in appendices.
- we assigned half of the points to some scaled questions in case it was a supplementary question to the questions already responded. So, in this case negative answer was assigned by 0, less negative answer obtained 0.5 point, answer "do not know" was excluded, less positive answer obtained 1 point and positive answer obtained 1,5 points.
- in semi-closed questions with the possibility of self-evaluation, there were mostly assigned points ranging from 0 to 4 points, where the rating of 0 represented the answers with very low impact and 1 point for answers with low impact on our question, the value of 2 for answers with less positive impact, 3 with positive impact and 4 points received strong positive impact responses according our subjective consideration.

Questions in questionnaire were divided into 4 areas. All questions dealing with one area were scored according to above mentioned key and all possible points were calculated. In the area of financial situation, there was 1 question in questionnaire 1 and 1 question in questionnaire 2. In the area of human resources, there were 5 questions in questionnaire 1 and 7 questions in questionnaire 2. In the area of innovation system, there were 6 questions in questionnaire 1 and 5 questions in questionnaire 2. In the area of information infrastructure, there were 6 questions in questionnaire 1 and 9 questions in questionnaire 2. We scored these question by values 0-3 or 0-1.5 according to question type as was mentioned above. So each of the surveyed areas connected with the index of competitiveness could achieve such limits according to answers from questionnaire:

- Financial situation (FIN) - min - max values <0-2>,
- Human Resources (HR) - min - max values <0-17>,
- Innovation system (INOV) - min - max values <0-15>,
- Information Infrastructure (INF) - min - max values <0-18>.

For the area of financial situation, a minimum number of points was assigned because this area is researched by a range of financial analyses. Even though it is one of the areas of competitiveness, the questionnaire is not an appropriate tool to obtain conclusions from this area. Therefore even the maximum number of points received in this area was the lowest.

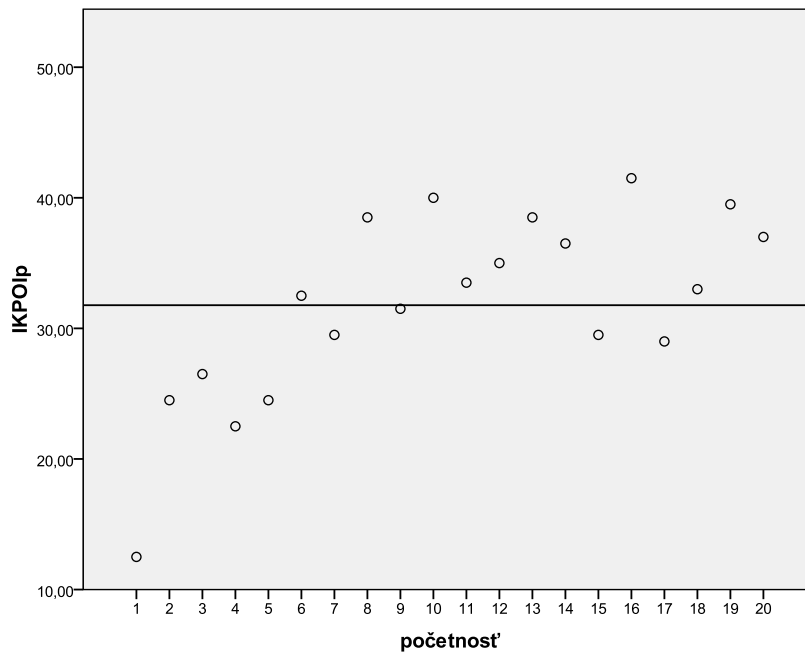
Index of competitiveness of insurance companies was calculated as follows:

$$IKPOI = FIN + HR + INOV + INF$$

Overall competitiveness indices can reach values in the interval <0-52> according to lowest and highest values of particular areas of index. Overall competitiveness index contains 4 areas in which every area can obtain some minimum and maximum values, such as mentioned before. When we calculate the lowest and highest values from every area, which create index of competitiveness, we obtain the interval <0-52>. This interval was divided into three equal parts (1 part = 17 points). The marginal values, however, were not obtained from any of respondents. Competitiveness Index values were then marked as low, average and high level of competitiveness:

- low level of competitiveness <0-17>,
- average level of competitiveness of <17.5 to 34.5>,
- high level of competitiveness of <35-52>.

Index values achieved by individual respondents - insurance companies are displayed in Figure 1.



Početnosť - number of responses

Source: [own research elaboration]

Figure no. 1 Gained values of IKPOp

Table no. 1 Achieved marginal levels of IKPOIp

Statistics

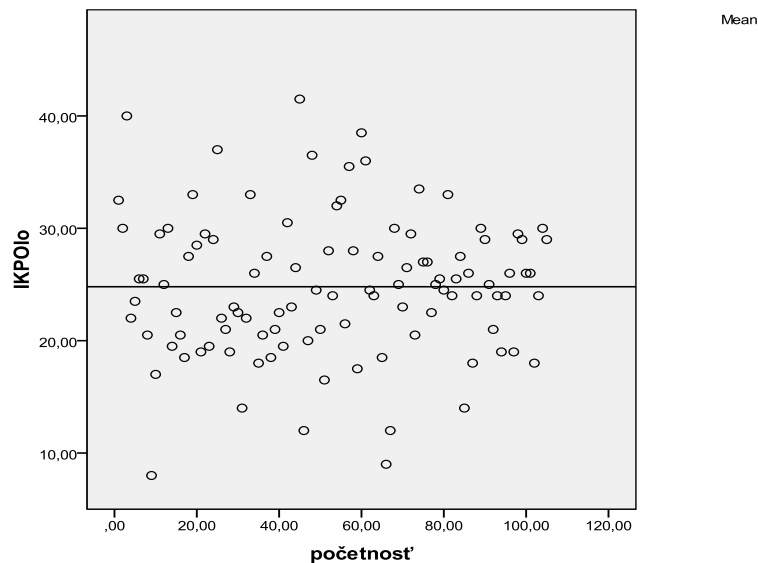
IKPOIp

| | | |
|---------|---------|---------|
| N | Valid | 20 |
| | Missing | 0 |
| Mean | | 31.7750 |
| Minimum | | 12.50 |
| Maximum | | 41.50 |

Source: [own calculations]

Figure 1 shows that 9 of insurance companies reached an index value below the average level of competitiveness and value of the 11 insurance companies was above the average value. Low level of competitiveness reached by IKPOIp only one insurance company, 11 insurance companies reached an average level and 8 insurance companies achieved the high level of competitiveness. The lowest index value was 12.50 and the highest value was 41.50 in IKPOIp.

Different situation can be seen when looking at the competitiveness indices calculated on the basis of views and experiences of citizens (IKPOIo). The average level of IKPOIo displayed by Fig. 2 and Table no. 2 stood at 24.8 and was lower than average IKPOIp of 31.775. The lowest value in IKPOIo was 8.0 and was also lower than in IKPOIp. The achieved highest index value in IKPOIo was the same as in IKPOIp, and 41.50.



Početnost' - number of responses

Source: [own calculations]

Figure no. 2 Levels of IKPOIo

Table no. 2 Marginal levels of IKPOIo

Statistics

IKPOIo

| | | |
|---------|---------|---------|
| N | Valid | 105 |
| | Missing | 0 |
| Mean | | 24.8000 |
| Minimum | | 8.00 |
| Maximum | | 41.50 |

Source: [own calculations]

Low level of competitiveness measured in IKPOIo was declared in 8 cases, the average level in 90 cases and the high level of competitiveness based on calculated indices was in 7 cases. For comparison, index values are given in Table no. 3.

Table no. 3 Number of index values of competitiveness divided according to each level

| | Low level | Medium level | High level |
|------------------------|-----------|--------------|------------|
| IKPOIp - number | 1 | 11 | 8 |
| % | 5.00% | 55.00% | 40.00% |
| IKPOIo - number | 8 | 90 | 7 |
| % | 7.62% | 85.71% | 6.67% |

Source: [own calculations]

The low level of competitiveness was declared on the basis of the questionnaires and subsequent determination of the competitiveness indices in 5% of insurance companies. From the perspective of people and their experience with insurance companies more than 7% of insurance companies reached this value. The average level of competitiveness was proved in 55% of insurance companies and in more than 85% of the population. The most significant differences between the insurers and the insured were in a high level of competitiveness. 40% of insurance companies were put into this level by insurance company survey, but only 6% more than based on the perception of people.

4.1. Evaluation of thesis

On the basis of surveys among commercial insurance companies and the inhabitants of choosen region of Slovakia and the subsequent determination of indices of competitiveness, we have verified the hypothesis whether there is a statistically significant difference between the level of competitiveness declared by insurance companies and the level of competitiveness perceived by the population.

Calculated values of indices of competitiveness are first subjected to normality testing using file sharing Shapiro - Wilk W test. Test results are shown in Table no. 4.

Table no. 4 Results of normality test

Tests of Normality

| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|--------|---------------------------------|----|-------|--------------|----|------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| IKPOIo | ,084 | 20 | ,200* | ,979 | 20 | ,917 |
| IKPOIp | ,100 | 20 | ,200* | ,936 | 20 | ,204 |

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Source: [own calculations]

From the above we can see that the significance of IKPOIp and IKPOIo is greater than 0.05, therefore we cannot reject the hypothesis that both samples do not have normal distribution. Based on these findings, we have chosen T test for 2 independent selections in order to examine the hypothesis. The outputs of this test are listed below.

Table no. 5 Results of Leven test

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | |
|-------|-----------------------------|---|-------|------------------------------|--------|
| | | F | Sig. | t | df |
| IKPOI | Equal variances assumed | 0.633 | 0.428 | 4.461 | 123 |
| | Equal variances not assumed | | | 4.048 | 24.745 |

Source: [own calculations]

Table no. 6 Results of T test for 2 independent selections

Independent Samples Test

| | | t-test for Equality of Means | | |
|-------|-----------------------------|------------------------------|-----------------|-----------------------|
| | | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| IKPOI | Equal variances assumed | 0.000 | 6.97500 | 1.56352 |
| | Equal variances not assumed | 0.000 | 6.97500 | 1.72305 |

Source: [own calculations]

First, we tested compliance variances. As seen from Table no. 5, Levene's test confirmed compliance variances in selected sets (p-value is 0.428). Compliance testing of mean values led to rejection of the null hypothesis of conformity of mean values (p-value less than 0.001). With the high reliability, therefore, we can claim that there is statistically significant difference in the medium values of both indices of competitiveness. Based on the findings and displayed results in Tables no. 4 to 6, we note that there is a statistically significant difference between the level of competitiveness declared by insurance companies and residents perceived level of competitiveness, and therefore, we accept the hypothesis.

The own assessment of competitiveness provided by commercial insurance companies is higher than those made by inhabitants in the region. The opinion of inhabitants is crucial for commercial insurance companies, giving them feedback in the perception of clients.

4.2. The importance of competitiveness indices

These indices are used for easier identification of current levels of competitiveness. Their use enables us to compare the level of competitiveness of any insurance company with other operating on commercial insurance market. Thus we can say that IKPOI can be used in practice as a tool of competitiveness management. The proposal, how to implement this index into the managerial practice of commercial insurance companies is mentioned below. Model of competitiveness of insurance companies is built on these four bases:

- The financial situation,
- Human Resources,
- Innovation system,
- Information Infrastructure.

To determine the current state of competitiveness of the financial situation, it is appropriate to use one of the approaches of financial analysis taking into account the specifics of insurance business, for example indicators of financial analysis by rating agency Standard & Poor's. Since all commercial insurance companies operating on the Slovak insurance market have been operating as the joint-stock companies, their annual reports are freely available. Therefore, there is no problem for managers to find out the current financial situation of all commercial insurance companies. They can compare the calculated parameters of the financial analysis of insurance company with the recommended values of Standard & Poor's. Then they assign points to commercial insurance companies with the best and worst results.

Information on the number of employees, the number and regional placement of branches and others are available in annual reports of commercial insurance companies. Advertising and information campaigns of all commercial insurance businesses are focused on a general effect on potential customers. Thus, such impact also includes executives of competing insurance companies. Therefore, managers can find data about competitors' information infrastructure by various methods, e.g. by observation or by reporting system. Consequently, they score the findings.

In the innovation system managers of insurance companies can compare and score the offer of commercial insurance products based on examined criteria of insurance companies. They can also monitor the development of product offerings in the individual insurance companies over certain period. The current product portfolio is presented by an insurance company on its website or in promotional leaflets. Total supply of product range of all insurance companies operating in the market is published by the Slovak Insurance Association on an annual basis as one of its appendices in comprehensive annual report.

Finally, the managers score individual examined areas and calculate total assessment. Subsequently they make the scale of insurance companies from the best to the worst and they can compare their position with the competitors. They can compare the total assessment as well as the individual indicators.

Index of competitiveness of insurance companies (IKPOI) will facilitate clarification and orientation of commercial insurance businesses in the issue of competitiveness. It represents a measurable indicator of competitiveness. Its creation expands theoretical approaches in a way of measuring competitiveness.

To calculate the index of competitiveness, we need to get information from people so we used the questionnaire 1 and 2. The empirical research via questionnaires was a specific research focusing on the issue, not the most examined one - the competitiveness of commercial insurance companies in Slovakia. It contributes to gain new knowledge and information necessary to calculate the indices of competitiveness of individual insurance companies and it offers the opinions of general population on their performance in the market, it leads to improvement of insurance enterprising in practice as well as it can support further research in this field.

Based on the statistical testing, we confirmed that there is a statistically significant difference between the level of competitiveness declared by insurance companies and the level perceived by the population. This finding represents a further contribution to the practice and can be the basis for further investigation and verification of the issue of competitiveness in practice.

5. CONCLUSION

This paper represents an intersection of two important and very specific areas, which are competitiveness and insurance enterprising. Both these areas show significant specific features, without knowing them it is not possible to properly comprehend these areas and to analyze them, therefore this field is not analysed in any specific books in our country.

According to settled partial objectives we determined factors the competitiveness of insurance companies. These factors are financial situation, human resources, innovation system and information infrastructure.

We describe the sequence of steps and methodology of setting the indices of competitiveness in detail. Via them we quantify the level of competitiveness of selected insurance businesses.

Our survey revealed that the level of competitiveness is perceived differently by insurers and by the inhabitants. Residents presented more critical assessment of competitiveness than commercial insurance company itself. Because of results of indices, we can say, that residents placed 6.67 % of all insurance companies operated in the Slovak insurance market to high level of competitiveness, but 40 % of insurance companies placed them to high level of competitiveness. This finding is very important for business practice. Because of more critical opinions of inhabitants on insurance companies, these results should be taken into account by insurance companies to improve their business, to improve their selling techniques, to be more active to attract more people and then sell more products.

The proposed indices of competitiveness after being implemented in business practice may serve as a management tool for managers. We have suggested a sequence, how managers can use the index of insurance commercial competitiveness in practice to determine their current position.

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Notes

1. Insurance works on the principle of the creation of reserves to eliminate the negative financial impact of randomness for the insured and insurers. These financial reserves are later used by insurance companies in undertaking their own investment policy.

2. On a real insurance market, the object of insurance enterprising is the commercial insurance, the reinsurance policy and other related activities

Appendix 1 Questionnaire 1 focused on finding factors of competitiveness in terms of commercial insurance business

1. Are you satisfied with the size of the portfolio?

- a) We are satisfied and do not try to attract the clients
- b) We try to attract new clients
- c) Other

2. How much does the offer of products influence potential customers?

does not affect rather does not affect I do not know rather affects affects

3. How much do the bonuses and incentives influence potential customers?

does not affect rather does not affect I do not know rather affects affects

- 4. How much does the branch network influence potential customers?**
 does not affect rather does not affect I do not know rather affects affects
- 5. Do you use advertising to promote your company?**
 no rather no I do not know rather yes yes
- 6. Does your insurance company promote its products on TV advertising?**
 Does not use rather not I do not know rather yes yes
- 7. Does your insurance company promote its products in other media (radio, print, ...)?**
 Does not use rather not I do not know rather yes yes
- 8. Does your insurance company promote its products through leaflets, billboards?**
 Does not use rather not I do not know rather yes yes
- 9. How often does your insurance company have TV spots?**
 a) In case of lot of potential clients consider purchase of a new insurance policy.
 b) When we launch new product or innovate existing one to a great extent.
 c) Regularly once per half of year
 d) Once a year
 e) Continuously several times a year
 f) Other.....
- 10. How does the insurance company inform its clients about new products?**
 a) By means of leaflets and brochures in its local branches
 b) By means of leaflets and brochures send home by post
 c) By means of their website
 d) By means of advert in media
 e) Other
- 11. Does your product portfolio fulfil market requirements sufficiently?**
 no rather no I do not know rather yes yes
- 12. Do you adapt your products according to customers' requirements?**
 no rather no I do not know rather yes yes
- 13. Do you offer or plan to introduce discount packages of products? (e.g. discount rate, if all household members conclude their life insurance in your company, ...)**
 no rather no I do not know rather yes yes
- 14. Can customers take out insurance policy for certain products on-line?**
 no rather no I do not know rather yes yes
- 15. Do you use services of insurance brokers to sell your products?**
 no rather no I do not know rather yes yes
- 16. Do you engage employees of other financial institutions (e.g. banks) to sell your products?**
 no rather no I do not know rather yes yes
- 17. How often do you run staff training?**
 a) after recruitment

- b) when launching new product
- c) more than once a year
- d) once a year
- e) other.....

18. Training in your insurance company is provided by:

- a) external consultant
- b) own teaching staff
- c) other

19. Staff training usually lasts:

- a) 1 day
- b) 2-3 days
- c) A week
- d) Other

20. How do you monitor sales activity in your company?

- a) sellers are controlled continuously by their superiors
- b) sellers send the reports to their superiors at specified intervals
- c) sellers are occasionally controlled
- d) other.....

21. What does your insurance company considered to be its greatest competitive advantage?

- a) product
- b) network of branches
- c) own sellers and company training scheme
- d) different forms of advertisement
- e) promotion on web site
- f) customer satisfaction
- g) Other.....

22. Does the solvency of your company present the competitive advantage?

no rather no I do not know rather yes yes

Appendix 2 Questionnaire 2 focused on finding factors of competitiveness in terms of population

Sex female male

Residence

- district [Bardejov](#) district [Humenné](#) district [Kežmarok](#)
 district [Levoča](#) district [Medzilaborce](#) district [Poprad](#)
 district [Prešov](#) district [Sabinov](#) district [Snina](#)
 district [Stará Ľubovňa](#) district [Stropkov](#) district [Svidník](#)
 district [Vranov nad Topľou](#) Other.....

Age

- 0 – 18 years 19 – 30 years 31 – 59 years over 60 years

Work position

- student / unemployed working less than 5 months
 retired person working more than 5 months
 on maternal leave

Achieved education level

- secondary education without A level
 A level secondary education
 university first level (Bachelor)
 university second level (Master)
 other

1. Have you ever closed any insurance policy? (If your answer is "no" or "I do not know", skip the following questions and go to question # 4.)

- yes no I don't know

2. How many insurance policies have you currently closed? (insert number)

3. What kind of insurance policy have you had?

- life insurance
 health insurance
 motor accidental insurance
 travel insurance
 property insurance
 liability insurance
 other.....

4. Are you thinking of concluding a new insurance policy in the near future (within 3 years)?

- yes no

5. Have you ever met insurance brokers?

- yes no

6. Who initiated the meeting?

- I contacted them they contacted me others

7. Have you ever experienced not being given overall and precise information about insurance policy wishing to conclude, respectively after concluding it?

- no rather no I do not know rather yes yes

- 8. Do you feel that the insurance brokers have concealed some information about the product?**
 no rather no I do not know rather yes yes
- 9. Have you obtained relevant information on insurance product after signing the contract and this was not communicated with you before concluding contract?**
 no rather no I do not know rather yes yes
- 10. In your opinion, do the sellers of insurance products know how to adequately inform clients about the conditions and requirements of insurance products and contracts?**
 no rather no I do not know rather yes yes
- 11. Is there enough insurance brokers in your region?**
 no rather no I do not know rather yes yes
- 12. Have you ever experienced that fact, that brokers did not respect your wishes?**
 no rather no I do not know rather yes yes
- 13. Was the seller willing to arrange meeting according to your schedule?**
 no rather no I do not know rather yes yes
- 14. Where did you meet your broker?**
 in insurance company
 at home
 other
- 15. Is the offer of insurance products sufficient?**
 no rather no I do not know rather yes yes
- 16. Did any product completely suit you?**
 no rather no I do not know rather yes yes
- 17. Did you experience that there was not insurance product you needed, respectively insurance company did not cover risk you needed?**
 no rather no I do not know rather yes yes
- 18. Is current way of contracting insurance policy suitable for you?**
 no rather no I do not know rather yes yes
- 19. Have you contracted your insurance online?**
 no rather no I do not know rather yes yes
- 20. What factor influenced you in selecting insurance company you bought your policy the most? (you can mark more possibilities)**
 product portfolio
 access to needed information on internet
 recommendations from friends
 previous experience
 accessibility of information in leaflets/brochures in insurance company
 TV spots
 adverts in other media
 insurance brokers
 image of insurance company
 possibility to conclude insurance policy online

