

Ranking of insurance company according to BSC procedure by AHP

Dr. Abolghasem Masih Abadi

Department Of Accounting, Sabzevar Branch, Islamic Azad University, Sabzevar, Iran

Abstract: Insurance industry is one of the industries that have special importance and validity in modern economy, domestic and foreign trade. Performance evaluation and grading the insurance company in addition to determining the general position of agency in industry, market and informing the beneficiaries, cause increase in competition, dynamism in industry, and development in community. On the other hand, organization strategic performance evaluation is always one the first and most basic prerequisites for compiling improvement programs in organizations and it has a high importance. One of the strategic efficient models in this aspect is BSC that equally analyses all aspects of organization. The statistical population in this research is consists of four governmental insurance (Iran, Asia, Dana and Alborz). For collecting data, haphazard sampling procedure was used. Study tool is questionnaire whose reliability was measured by consistency ratio and whose validity was measured by content-construct method by acquiring the opinions of experts and some managers in this field of study; and the results showed appropriate reliability and validity. In analysis data section, the group integrative procedures AHP and BSC were used. The results showed that the D insurance company had the higher final score than the other companies. After that the C, A and B insurance companies were respectively.

Key Words: Insurance, BSC, AHP

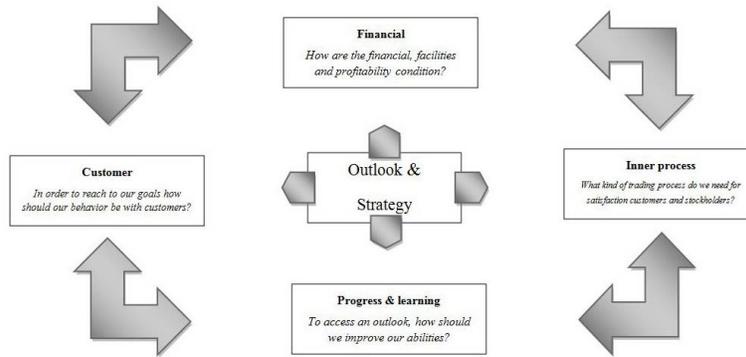
INTRODUCTION

One of the most valuable industries in every society that we can discuss is insurance industry which causes development in that society. Nowadays, in all development-oriented societies, insurance is known as an important factor in developing of the county. Because they believe that insurance in improvement of different parts of economy has notable role and by covering the damages that resulting from economic activities and community development, will increase the motivation of investment [6]. Meanwhile, one of the efficient strategic models is BSC that equally analyzes all financial aspects of organization. In this research with considering to the potency points of BSC in strategic performance evaluation with combination to AHP technique was used to evaluate and grad in four governmental insurance (Iran, Asia, Dana and Alborz).

Research theological principals

BSC

The balanced scorecard (BSC) is one of the most highly accepted performance management tools today, [23, 3 ,22].The Balanced Scorecard Approach has been developed at Harvard Business School by Kaplan and Norton since the early 1990s. It is a beneficial multi-dimensional approach to performance measurement and management that is linked deliberately to organizational strategies [18] and a large number of organizations are extensively using it [22].In this model suggests that as well as financial measures of performance, attention should be paid to the requirements of progress and learning, Inner processes and customer [9, 12]. Balanced scored card has been used in different research filed such as strategies evaluation [19], librarianship [20,21], financial performance analyzing [7], pathology in information technology [16], companies' effectiveness evaluation [15], performance evaluation in information technology [13], performance measurement in knowledge management [4] and extraction of performance evaluation indices in universities and higher education institutes[5, 12]. BSC's purpose is preparation of the trading key successful elements for managers and making connection between general performance and strategy in organization Norton and Kaplan claimed that BSC provides an organization guidance factor for competition [1]. The organizations that use BSC, should coordinate it with their special situation and their internal procedures. These aspects are show in Figure1 [8].



Source: Kaplan & Norton (1996)

Figure1: Aspects of BSC

BSC is used in productive organizations and services, governmental and nonprofit organizations. Although BSC is well applied in industry and there are a lot of documents in this case but a few researches were done for applying and correspondence BSC in service sector, especially in insurance industry [10].

AHP

Analytic Hierarchical Process is one of the most used methods in decision making when decision makers come across quality measures. This method was introduced in 1980's [2]. In this process, problem is analyzed into smaller parts understandable for decision maker and alternatives are compared by pair-wise comparison matrix and numbers between 1/9 to 9 are attributed to them according to individual preferences [25].

Analytic Hierarchical Process has three steps as follow:

First step

Defining hierarchy structure. A complicated problem can be stated by dividing it to hierarchically considered subsets. The highest level is goal and the elements of the lowest level are alternatives. The elements of middle levels are criteria or sub-criteria related to assessing alternatives.

Second step

Measuring weight. In this step, elements of each step are compared pair wisely with their related elements in the higher level and their weights are established. Then, the final weight of every alternative is established by aggregating relative weights.

Third step

Consistency test. Calculations of analytic hierarchical process are done by primary judgment of decision maker which is presented in the form of pair wise comparative matrix. Every error in comparing or defining the priorities of alternatives can be detrimental to the final result. Consistency rate is a tool which shows how much the priorities resulted from pair wise comparisons can be relied on. Experience has shown that if consistency rate is less than 0.10, consistency of comparisons is acceptable; unless, those comparisons should be revised [17]. As it was said in first step, the highest level is goal and the elements of the lowest level are alternatives. The elements of the middle levels are criteria or sub-criteria. Although, it should be considered that this study aims at establishing the weight of every criterion in relation to its criterion in the higher level. We don't aim at selecting one alternative among all, so we don't assess the alternatives. In this study, group AHP approach is used to prioritization of the various aspects of BSC [11].

Literature Review

Wegmann in France represented a research with this title "balanced evaluation as a device for management cognition in French insurance companies." In this research, at first the relationship between balanced evaluation aspects then condition of balanced evaluation in French insurance companies were discussed, at the end concluded that managers think that balanced evaluation is a proper management device for leading and accessing to institutes goals[26].

Merl performed a research about applying the balanced evaluation model as a device for strategic control in insurance companies then concluded that the balanced evaluation model provides suitable information for management that emphasizes on both financial and nonfinancial aspects (costumer, inner procedures and education)[14].

Kiarazm (and et al) in their research with this title "Performance evaluation in higher education institutes with the use of combinative model AHP and BSC", by using AHP model gave priority to higher university in Khorasan province[12].

In Tasdighi et al. study as "A Performance Assessment Model Using Balanced Scorecard and Taxonomy Analysis" have find that to improve the performance of branches of Medical Services Insurance Organization in different towns, analysis and optimization of medical expenses, increasing income and customer satisfaction have particular importance[24].

In Field (2001) study as " Full Measure " have shown that almost 50 percent of Fortune 1000 companies in North America and 40 percent in Europe uses a version of the BSC [22].

MATERIALS AND METHODS

In this research, in order to recognition and definition the related indices to each of four BSC aspects, insurance industry statistical yearbooks and articles, questionnaires and interviews have been used. Table 1 represents the applied BSC in this research.

Table1: Analyzed variables in BSC aspects

Aspect	Variable
Financial	The percentage of changing in insurance right
	Current ratio
	Quick ratio
	Debt ratio
	Average age of receivable
	Profit to sale ratio
	Return on total assets
	Income increase before taxes discount
	Return of perfect investment
	Customer
The percentage of the branches number to the whole country insurance branches	
Growth number of customers	
Growth number of representations	
Growth the number of branches	
Inner process	Share in the insurance industry
	The ratio of net profit to the number of personnel
	Growth official and personnel costs
Progress and learning	The ratio of official costs to earned insurance right
	The index of staffs' education
	Increased staffing
	The rate of investment

As is seen in this model to evaluate the four aspects of BSC has been focused on the improvement in variables and structures in every direction. These variables are represented according to the past researches that became correction and localization, according to the exports ideas. Gathering data has been made of four separate sections: 1.customer opinion polling questionnaire, 2.staffers opinion polling questionnaire, 3. insurance companies' information and statistics, 4.specialists opinion polling questionnaire .Customers and staffers questionnaires have been collected data by Likert pentad spectrum and specialists' questionnaires by comparing duality. For specialists' permanency evaluation, Consistency rate was calculated by Expert Choice software and because 0.07 was obtained (less than 0.1) so it is consistency. For customers and staffers permanency evaluation, Kronbakh Alfa coefficient was calculated by SPSS software that 0.73 and 0.81 was obtained respectively.

Statistical community in this research consists of four governmental insurance¹. For collecting data accidental sampling model was used. According to be unequal the accumulate data scale (as pointed some variables were calculated by actual data), for adaptability, different data was normalized. So the scores were distributed from 1 to 100 proportionally. And also in order to determine the importance of each aspect, AHP technique was used. Data was analyzed by Expert Choice software.

Research Findings

In order to determine the importance of each aspect, AHP technique was used. According to this, a questionnaire was designed that consisted of 6 duality comparing questions in 4 aspects. This questionnaire was completed by 18 specialists in study field. In this method, duality comparison matrix elements were obtained from geometrical mean of elements corresponding to every decision-makers duality comparisons matrix. Data analysis was done by Expert Choice software. The importance amount of every aspect was represented in table 2.

Table2: The important amount of every aspect of BSC according to specialists' opinion

Aspect	Financial	customer	Inner process	Progress and learning
Importance	0.2346	0.4672	0.1247	0.1735

Variables average amount related to every BSC aspect made its score. The scores that related to every aspect after normalization has been represented in table 3.

Table3: The score related to every aspect of BSC for every insurance company

BSC aspect	company score A	company score B	company score C	company score D
Financial	54.98	64.16	74.23	69.62
Customer	71.05	63.92	83.11	90.01
Inner process	82.08	81.16	76.27	85.38
Progress and learning	55.93	53.45	64.12	82.24

The insurance company total score has been obtained from the sum of scores product of every aspect in its weight. Also, the rank of every insurance company according to its performance, based on AHP and BSC integration model has been shown in table 4.

Table4: Total score every insurance company

Insurance company	A	B	C	D
Total score	66.0319	64.3094	76.8788	83.3008
Rank	3	4	2	1

CONCLUSION

Nowadays insurance industry is one of the important economic organs in every country and if is the most powerful and most important supportive organ among the other economic units, so the performance evaluation of these agencies is one of the most important subjects that gets the managers' attention to itself. According to the data in table 2, observed that customer aspect the field study specialists' point of view has more important in evaluation performance and after that financial, learning and progress and finally inner processes are important respectively. According to the data in table 3 and 4 observed that insurance company D in four aspects of BSC model has considerable relative performance the causes this insurance company places higher than the other insurance companies in total score. Because insurance company C in three aspects of customer, financial, progress and learning got the highest score among two other insurance companies A and B, (according to the importance of costumer and financial aspects in experts' view), this insurance company placed at second performance evaluation position. Also, according to the superiority of insurance company A to insurance company B in three aspects of costumer, inner process, progress and learning, placed in third position. Finally insurance company B, in spite of its relative proper condition in financial aspect and inner process, placed in forth position because of its weakness in customer aspect in comparing with other and high value of this aspect in experts' view.

¹ Because of author's obligation to studied insurance companies, mentioning their names have been avoided in research findings and conclusions.

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