

## EVALUATION OF THE PERFORMANCE AND RANKING OF PARSEIAN INSURANCE COMPANY IN MAZANDARAN BY USING COMBINED MODEL BSC AND DEA

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### ABSTRACT

In this paper we will study the Performance of Parseian Insurance Company in Mazandaran according to Balance Score Card(BSC) and Ranking using Data Envelopment Analysis (DEA) techniques. The statistical communities covering 230 employees of the Parseian Insurance Company in Mazandaran, of those were selected with randomized cluster sampling. This study gauges included the questionnaire and company documents. For the analysis of the data, we use the inferential statistics (Binomial test) With Spss software and DEA. Binomial test results indicated that Parseian Insurance Company has adequate performance status in Mazandaran. Status of customer, financial, internal processes and learning and growth in the company is suitable. However, The Data DEA results based on the CCR model indicates that the only functional unit is Sari. Data Envelopment Analysis results based on BSC in branches of Babol, Behshahr, Chalos, Amol and Qaemshahr were non-functional but were functional in sari, Tonekabon, Ramsar, Babolsar and Nor branches.

**KEYWORDS:**Balance score card; Evaluation of the performance; Insurance Company

Traditional methods of performance evaluations that are based primarily on financial measures such as earnings per share, return on assets rates and...,ignores many qualitative measures of customer satisfaction. The limitations of financial measures to evaluate the performance create a new method that meanwhile according to financial measures, uses the other measures to evaluate the performance. For this purpose, Kaplan and Norton (1996) introduced the performance evaluation method. In this method also attended the customer satisfaction, internal processes and constant learning and growth of employees, In addition to financial analysis. Possible limitations of traditional methods of performance evaluation on the one hand and new perspectives to the economic organization or firm on the other, Led to a change of attitude on how to evaluate performance. One of these new approaches which are considered as mentioned the theory of contracts. In the contract theory, the organizations are seen as a collection of beneficiary groups and persons, that all benefit through an implicit or explicit agreement of the organization. These stakeh older groups including owners, customers, employees, raw material suppliers and community, determined Organizational goals (Tabari&Araste 2000). A fundamental issue in applying of models BSC, Determine the baseline model that will measure the

organization's performance. Without this standardized baseline, assessment is impossible. When you set a baseline for evaluation, Evaluation of the model and target designs will be done, While Set of standards is difficult and often misleading. To solve this problem, is suggested Balanced Scorecard combines model and dataenvelopment analysis (Eilatet all 2008). DEA is a linear programming method for evaluating the performance of decision making units. Farrell (1957) Using a similar method such as measure performance in engineering, applied the performance measures for the manufacturing unit. The case that Farrell consider for measure of efficiency, Includes an input and an output (Kordetall 2011). Since the DEA, based on comparative analysis, Decision units, are evaluated against each other; thus, using a combination of BSC and DEA, has been overcome on the major barrier to the balanced scorecard, namely need to determine baseline standards (Eilatetall 2008). In this paper we compute rate of Parseian insurance subsidiaries in the cities of Mazandaran, Using the balanced score card as a tool for design, evaluation and performance measurement indicators from four perspectives: customer, Inter-organizational process, learning, and innovation and financial affairs. Then performance of these branches, will be measured ranked through Conceptual model BSC by using DEA.

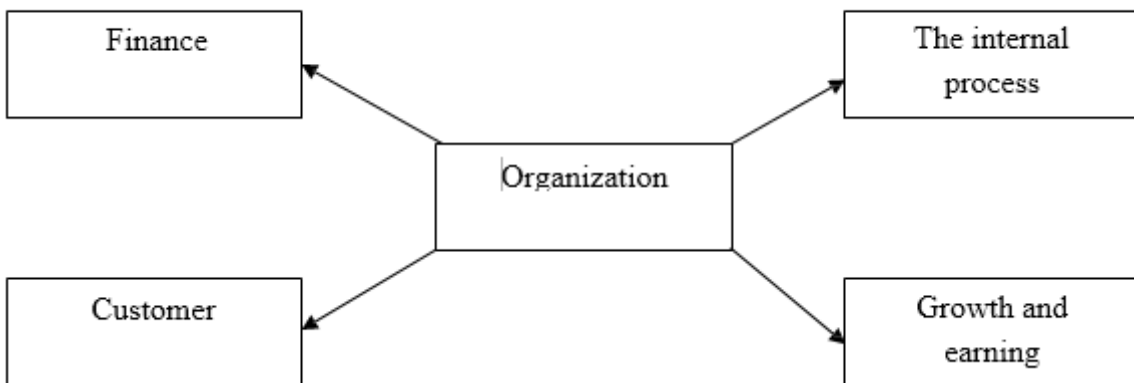
**History Review**

Pattern scorecards are one of the successful models used in the field of performance evaluation. This method that proposed in the early 1990s by Robert Kaplan and David Norton enables managers to having a comprehensive framework; Company's strategic objectives convert to a set of performance criteria related each other. This means that, successful companies to evaluate their performance solely do not rely on financial measures. But rather evaluate his performance from another perspective namely customer, internal processes, and learning and growth. However, to conduct a comprehensive assessment of organization performance, this function should be evaluated from four point of view or perspectives:

**Financial aspects: Financial measures are important**

Components of the Balanced Scorecard system. We can spend all our effort on improving customer satisfaction, improving quality and reducing time to deliver our products and services, but will barely value, if these measures do not lead to concrete result our financial reporting (Kaplan & Norton 2009).Customer aspects: According to this view, Managers should interpret of their mission statement on customer, on specific measures that really related to the customer. For examples, customer satisfaction measures or number of complaints filed by customers

(Valmohamadi&Firoozeh 2008).The internal process aspects: According to this view, Organizations should determine on what processes and competencies are superior to continue value creation for its customer and abide by their shareholders and their measures for the measures determine so based on that, managers able to judge easily. There are related between internal processes and competencies and the importance of operational staff to meet organizational goals (Valmohamadi&Firoozeh 2008).Growth and Learning aspects: This view has direct attentionto the future success of individuals and organization infrastructure. Including measures in this respect can be pointed to intellectual property, employee satisfaction, market innovation and skills development (Shahroudi&Asimi 2010).Research findings of Danshfrd et al (2010) show that In Parseian Telecommunication Industry Co. Implementing the Balanced Scorecard is based on four main key: customer, internal process, learning and growth and financial that Has led to improve organization performance. Zafar Ahmed, et al, (2010), has performed Research on Commercial Banks in Pakistan between2009 and 2010 and its results lead to increased investment returns, revenue and profit growth and each account number, increase customer satisfaction, gaining new customers, increase employee satisfaction, increased productivity and numbers of trained staff. In the following, conceptual model is presented according to the above description.



Balanced Scorecard method as a Strategic Management System (kaplan and Norton (1996))

According to the conceptual model, the following questions have been suggested:

**Main Question**

How are the Performance and rankings of Parseian Insurance Company in Mazandaran based on data envelopment analysis (DEA) and the balanced scorecard (BSC)?

**Secondary Question**

1. How is the performance of Parseian Insurance Company in Mazandaran from the financial prospective?
2. How is the performance of Parseian Insurance Company in Mazandaran from the customer prospective?
3. How is the performance of Parseian Insurance Company in Mazandaran from the the internal process prospective?
4. How is the performance of Parseian Insurance Company in Mazandaran from the growth and learning prospective?
5. How is the ranking of Parseian insurance companies based on BSC model using DEA?

**RESEARCH METHODS**

The nature of the studied subject and the desired goals caused that for this research is selected Descriptive - survey and analysis method as a Research Methods. In this paper, target population includes employees of the Parseian Insurance Company in Mazandaran. Sampling in this study is cluster randomized and Sample volume,

using Morgan table estimated 144 people. In this paper, according to the research objectives, t tools to gather the information needed to assess performance; Likert questionnaire consisting of 26 questions was used. The reliability of the questionnaire, using Cronbach's Alpha 0/832 and Validity of the questionnaire has been approved by academic scholars. As well as for the ranking, have been used the documents in the Parseian Insurance Company. In this study variables, number of personnel, the average number and the average insurance premium amount as input and Variables, the average number of claims and the average amount of damages, have been selected as the output branches.

**RESULTS**

For statistical testing of the research questions, Binomial test, employed by using Spss software version 20. Also, the software DEA-Solution is used for ranking of the Parseian insurance companies. Statistical testing of research questions: To check the status of the Parseian insurance companies, the binomial test was used which results are presented in Table 1.

**Table1: consideration of performance of Parseian insurance companies**

| variable             | mean | sig    | result |
|----------------------|------|--------|--------|
| financial            | 3/29 | 0/0006 | proper |
| customer             | 3/03 | 0/0008 | proper |
| the internal process | 3/22 | 0/0001 | proper |
| growth and learning  | 3/27 | 0/0005 | proper |
| total                | 3/22 | 0/0001 | proper |

As we can see in Table 1, considering those significant levels of

financial less than 0/05, financial performance of Parseian insurance company is suitable.

In the internal processes considering that significant level is less than 0/05, In terms of the internal processes, performance of Parseian Insurance Company in Mazandaran is suitable. In the term of learning and innovation, considering that significant level is less than 0/05, Performance from the perspective of learning and innovation of Parseian insurance company in Mazandaran is suitable. In the customer perspective, considering that significant level is less than 0/05, the customer performance of Parseian insurance company is suitable. Mathematical model of data envelopment analysis

determine the scale and technical efficiency of decision making units which this model has been used to solve the following inputs and outputs. After entering the information into the CCR and BCC model, efficacy of each of the branches is determined.

Analysis of data using a model of CCR:

As in Table 2 is shown, only one of the 10 units has been effective. Well as average efficiency of total branches is 74%, the standard deviation is 0/21, Minimum efficiency of Nor branch is about 23%. According to the reference unit of Sari, Chalos, Qaemshahr, Tonekabon, Ramsar and Noor are inefficient. It is important to note that for each inefficient unit, the virtual equivalent units with respect to the reference group to be established to the

extent necessary adjustments is determined in the input.

**Table2: efficacy of each of the branches using a model of CCR**

|            |      |       |          |        |      |           |           |
|------------|------|-------|----------|--------|------|-----------|-----------|
| branches   | Sari | Babol | Behshahr | Chalos | Amol | Qaemshahr | Tonekabon |
| efficiency | 100% | 68%   | 86%      | 77%    | 55%  | 76%       | 89%       |

Analysis of data using a model of BBC:

As is shown in Table 3, according to the BCC model, 5branches of 10branches of Parseian insurance company in Mazandaran Known as efficient, that is 50% of all branches of Parseian insurance company in Mazandaran. Well as average efficiency of branches is 91% and the standard deviation is 0/11 and MinimumEfficiency of Amol branch is about

65%. Babol branch is more deficient than the Reference units of Sari, Tonekabon and Ramsar, Behshahr branch is more deficient than the Reference units of Sari, Tonekabon and Noor,Chalos branch is more deficient than the Reference unit Ramsar, Amol branch is more deficient than the Reference units of Sari and Noor,Qaemshahr branch is more deficient than the Reference units of TonekabonandNoor.

**Table3: efficacy of each of the branches using a model of BBC**

|            |      |       |          |        |      |           |           |        |          |      |
|------------|------|-------|----------|--------|------|-----------|-----------|--------|----------|------|
| branches   | Sari | Babol | Behshahr | Chalos | Amol | Qaemshahr | Tonekabon | Ramsar | Babolsar | Noor |
| efficiency | 100% | 72%   | 97%      | 91%    | 65%  | 85%       | 100%      | 100%   | 100%     | 100% |

Modeling of efficient unit, as a reference unit were able to achieve a desired performance level. For example, insurance branches of Babol with modeling of performance and how to combine inputs and outputs of Sari, Tonekabon and Ramsar, increased the extent of its performance optimization, achieve the desired level of efficiency.

Standardization of equipment needed in branches and performing tasks using modern technologies, Can help to provide better service and improve organizational performance.

**Concluding Remarks**

This paper is performed aimed at evaluating and ranking the Parseian Insurance Company in Mazandaran Using the combined model BSC and DEA. In relation to the first question, was found that Parseian Insurance Company has adequate financial aspect. We suggested that Rewarding, encouragement, financial support andshould Commensurate with the efforts of the staff in order to increase motivation and improve the performance of employees. In relation to the second question, it is clear that State of ParseiInsurance Company in the development and learning is suitable. We suggested that revised its organizational structure and move towards decentralization and Staff informed about decisions and necessary authority to carry out the tasks assigned to staff. For this purpose, managers should be hold informal meetings between employees and managers and encourage them to awareness of the day issues, commenting on matters that they think are useful for the organization. In relation to the third question, it was clear that the situation of Parseian Insurance Company is the appropriate in internal processes. So we suggested that by compiling and providing features and new technologies,

In relation to the forth question, it was clear that Situation of customer in Parseian Insurance Company is suitable. To improve the organization of in this sector, with cordiality and appropriate staff to respond to customers Timely service to customer and needed advice, helping solve customer problems caused that Positive mentality towards insurance services branch target is created. This suitable is Proportional with National results (2009), Tabari&Araste (2008), Daneshfardet all (2010) As well as DEA results based on the CCR model shows that Sari is only a single efficient unit. The results of DEA based on BCC model, branches of Babol, Behshahr, Qaemshahr, Chalos and Amol are inefficient and branches of Sari, Tonekabon, Ramsar, Babolsar and Noor are efficient.

**For Future Research**

1. Evaluation of organizational performance using the balanced scorecard in other insurance companies and Compare the results with the present study.
2. Evaluation of combined organizational performance with a balanced scorecard approach and other modelsOrganizational Excellence Model, FDEA and... and Compares its results.

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