Performance Assessment of the Food Industry of Tehran Stock Exchange Based on Balanced Score Card (BSC) Technique

Dr. Morteza Asadi
Asistant Professor, Faculty of Economic, University of Economic Sciences, Tehran, Iran

Dr. Javad Mehrabi
Department of Management, Qazvin Branch, Islamic Azad University, Qazvin, Iran
E-Mail: Mehrabijavad@Qiau.Ac.ir

Saharnaz Mohseni
Master Student of Science and Research Branch, Islamic Azad University, Kermanshah

Mohammad Hasan Tanhaei
Department of Management and Accounting, NajafAbad Branch, Islamic Azad University
Isfahan, Iran

Abstract

Major objective of the present paper was to study the role of balanced score card regarding performance assessment of companies listed in food and beverage industry in the stock exchange. This survey is descriptive and is regarded as a quasi-experimental research plan (Ex-Post design). The statistical population included 200 managers and research sample consisted of 99 persons based on Cochran formula. Questionnaire was used for data collection. Frequency tables and appropriate diagrams were applied to describe data and inferential statistics methods such as student's t-test were used to confirm or reject hypotheses. Variance analysis and t-test for two independent samples were used to study the impact of personal characteristics on responding to the hypotheses. Ranking of improvement degree of indexes for realization of purposes and determining rank of each factor was studied using Friedman test. Results of testing hypotheses reveal it is necessary for organizations to emphasize internal processes more given that planning and implementing efficient and suitable processes in the organization is led to offering appropriate services. About growth and learning scope it is notable that since employees are major capitals of the organization, special attention must be paid to this sector in order to satisfy employees and provide long-term benefits of the organization.

Keywords: balanced approach, performance assessment, food and beverages industry
Introduction

Organizations need a system which creates a kind of balance between historical precision of financial digits and numbers and incentives of future performance and assists organizations in implementing their distinct strategy in order to confront with problems and obstacles of developing performance assessment systems.

Balanced approach is a tool which eliminates the above two challenges. It converts strategy into action from theory. This method is not only an assessment system but is a directing tool which changes strategy into action at all organizational levels. Indeed it is one of the principles of motivational action that causes individuals and groups who work in the organization to be aware of their activities daily in order to reinforce organizational strategy.

Traditional performance assessment systems mainly relied on financial meters and such assessments were accomplished by financial affairs of companies (Benker & Chung, 2004, p 423). Financial standards were good indexes to measure status of companies in the industrial economy age, since competitive advantages of that period were mostly based on reduction of the cost price due to economies of scale and mass production. Complication of economic relations and business tools at the beginning of 21st century, reliance of companies on financial meters on the basis of performance assessment, existence of their strengths and weaknesses and ignoring inadequacy of pure financial sectors were revealed more than ever. Traditional methods of performance assessment which were mainly relied on financial meters had no efficiency to reflect success or failure reasons of companies completely and also they did not make a reasonable and causal relationship among stimulant factors of success and the resultant achievements. Therefore, they did not have the capability to support management programs especially strategic programs of the organization (Kaplan & Norton, 2005, p 11-14).

Research literature

Kaplan and Norton represented the new and developed model of balanced score card as a strategy management system in 1996. They stated: "traditional management systems have no capability to make a relationship among long-term strategies of the organization and its short-term activities but managers who use balanced score card are not forced to use short-term financial meters as exclusive standards of performance assessment (Kaplan & Norton, 1996).

Balanced score card has been recognized as a comprehensive performance assessment method by considering tangible and intangible assets and their impact on each other. Capability of the company to exploit intangible assets is more important than managing physical and tangible assets. Balanced approach is one of the most important and modern techniques of performance assessment in organizations which could evaluate managers' performance from four aspects as a framework for strategic management of organizational changes. These four aspects are as below:
A) Customers: how do customers see us?

This aspect explains customers' view and shows the status of strategy and performance of the company in creating value-added for customers. Cases such as customer satisfaction, opinions of customers, attracting new customers, response time to expectations, market share and profitability of each customer are examples of assessment standards in this aspect (Namazi & Ramezani, 2004).

B) Internal aspect and production processes: in which dimensions should we look for superiority?

This aspect emphasizes performance of internal processes in the organization and explains required actions to perform effective works in the organization. Basic effective processes on creating comparative advantage to perform operations and methods so that satisfies customers' expectations are identified and measured in this aspect.

Implementing and improving administrative and financial issues and processes of human resources, improvement of quality and decreasing time cycle of production, reduction of wastages and reworking, on-time preparing of software and hardware programs, maintenance operations and on-going improvement of operations and regulations of information systems are examples of measurement standards in this aspect (Namazi & Ramezani, 2004).

C) Learning, growth and innovation aspects: is it possible to continue improvement and value creation as before?

This aspect explains direction of motivational purposes and success manner of the organization and is focused on individuals' capabilities based on future success of the organization and its structure. It pays direct attention to principles of future success of individuals and infrastructures of the organization. Key standards for assessment in this aspect include intellectual assets, employees' satisfaction, retaining employees and their productivity as well as instruction times and learning for human forces and developing their skills (Azar & Afsar, 2006).

D) Financial aspect: how do we consider shareholders?

Financial standards which consider responding to shareholders' expectations are the most important standards and improvement of internal processes is the standard of final results in other aspects of customers which reflects enhancement of the organization in the framework of obtained economic results. Financial aspect indicates whether strategy and operations of the company create value-added for shareholders or not. This aspect includes standards to evaluate profitability such as operational profit, sales growth, circulating capital return, return on equity and growth of economic value-added (Namazi & Ramezani, 2004).
The issue that is often considered in balanced approach is "assessment" but indeed what is very important is direction and motivation of individuals and working groups in the organization and it is highly important to the extent that big companies believe in assessment only as a motivational tool (Nier, 2004).

Research background

Studying accomplished researches in this regard could be a guide to conduct more studies. For this reason, some of these researches will be mentioned in this section.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Research Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaplan and Norton</td>
<td>Studying relationship among aspects of balanced assessment system. They showed in their research that there is a positive and significant relationship between market share and profitability of the company.</td>
</tr>
<tr>
<td>(2001)</td>
<td>Inventors of balanced approach introduce this performance assessment method as a strategic (communications) management system. Here managers do not have to rely on short-term financial standards as the only indicator of financial performance of the company. They indicate any operational unit in the organization has a score card for itself that is proportional to its strategy and purposes. Therefore, similar organizational units have some common standards and some specific standards for their operations and strategy. They conclude that companies could improve their strategy using balanced approach and managers ensure that the organization has perceived the long-term strategy.</td>
</tr>
<tr>
<td>Ittner and Larcher</td>
<td>Studying relationship among aspects of balanced assessment system. They confirmed existence of a positive relationship between customer satisfaction and stock return.</td>
</tr>
<tr>
<td>(1996)</td>
<td></td>
</tr>
<tr>
<td>Ittner and Larcher</td>
<td>Studying relationship among aspects of balanced assessment system. They showed a positive relationship among quality of service offering to customers, financial indexes and other aspects in balanced assessment system.</td>
</tr>
<tr>
<td>(1998)</td>
<td></td>
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</tbody>
</table>

Performance assessment of food and beverage industry in the stock exchange was the major objective of this survey. For this purpose, importance of four aspects of balanced approach was studied as financial structures, customer, internal processes of the organization and learning and growth through six hypotheses.
Methodology

This survey is descriptive and is regarded as a quasi-experimental research plan (Ex-Post design). Survey research method was used for data collection in order to test hypotheses. Sales and after-sales managers, senior managers, management accounting managers and financial managers constituted statistical population who were equal to two-hundred (200). Sample number was equal to 99 persons based on Cochran formula. Questionnaire was main tool of data collection that was in person for financial managers and heads of accounting selected among the statistical population (companies listed in Tehran Stock Exchange) or was posted to companies. Completed questionnaires were returned after a pre-determined time interval. It included 30 questions and amount of Cronbach alpha was equal to 0.96 which showed high reliability of the questionnaire.

Descriptive statistics methods such as frequency tables and appropriate diagrams as well as inferential statistics methods such as student's t-test were used to confirm or reject hypotheses. Ranking of improvement degree of indexes to realize purposes and determine rank of each factor was studied using Friedman test.

Data analysis

The first hypothesis indicates whether applying balanced score card is effective on performance assessment or not.

Null hypothesis: applying balanced score card is not effective on assessment of performance indexes of manufacturing units.

Alternative hypothesis: applying balanced score card is effective on assessment of performance indexes of manufacturing units.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying balanced score card to evaluate performance indexes of manufacturing units.</td>
<td>99</td>
<td>3.85</td>
<td>0.98</td>
<td>8.59</td>
<td>98</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Given to obtained results in the above table, null hypothesis is rejected at significance level 95%. Therefore, applying balanced score card is effective on assessment of performance indexes of manufacturing units.

The second hypothesis indicates whether all performance units have a similar role in obtaining the purposes. In other words, role of indexes in realization of purposes is ranked. Given that
responses are interdependent, Friedman test is the most appropriate test to compare impact
degree of factors.

Null hypothesis: all performance units do not have a similar role in obtaining the purposes.

Alternative hypothesis: all performance units have a similar role in obtaining the purposes.

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>Number</th>
<th>Amount of chi-square</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>45.3</td>
<td>3</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Therefore, null hypothesis is rejected at significance level 95% because amount of chi-square is
equal to 45.3. It means that all performance units do not have a similar role in obtaining the
purposes. Improvement of indexes of financial and customer scopes have the highest role in
viewpoint of respondents. In the second place there are improvement of indexes of growth,
learning and managerial scope and internal processes scope.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Average Rating</th>
<th>Ratio Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement of indexes of financial scope</td>
<td>2/88</td>
<td>Maximum</td>
</tr>
<tr>
<td>Improvement of indexes of customer scope</td>
<td>2/85</td>
<td>Minimum</td>
</tr>
<tr>
<td>Improvement of indexes of growth and learning scope</td>
<td>2/24</td>
<td></td>
</tr>
<tr>
<td>Improvement of indexes of internal processes scope</td>
<td>2/03</td>
<td></td>
</tr>
</tbody>
</table>

Hence, it is concluded that food and beverages industry could be successful in attaining its purposes by applying its strategies in financial scope than other scopes.

The third hypothesis indicates whether indexes of customer scope have a similar role in realization of purposes. These indexes include education and information, customer satisfaction from quality and on-time delivery of services and service offering price. Student's t-test was used to answer this question.

Null hypothesis: indexes of customer scope do not have a similar role in realization of purposes.

Alternative hypothesis: indexes of customer scope have a similar role in realization of purposes.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>T</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement of indexes of customer scope has a similar role in realization of purposes</td>
<td>99</td>
<td>4.28</td>
<td>0.65</td>
<td>19.72</td>
<td>98</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Amount of test statistic is equal to 19.72, thus null hypothesis is rejected at significance level 95%. As a result, indexes of customer scope have a similar role in realization of purposes. Obtained results indicate respondents agree on similar importance of indexes of customer scope.

Hypothesis four studies indexes of internal processes scope that include participation degree of employees, complexity of the organization and degree of lack of concentration.
Null hypothesis: indexes of internal processes scope do not have a similar role in realization of purposes.

Alternative hypothesis: indexes of internal processes scope have a similar role in realization of purposes.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement of indexes of internal processes scope has a similar role in realization of purposes.</td>
<td>99</td>
<td>3.96</td>
<td>0.65</td>
<td>14.67</td>
<td>98</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Amount of test statistic is equal to 14.67, thus null hypothesis is rejected at significance level 95%. As a result, improvement of indexes of internal processes scope has a similar role in realization of purposes.

Hypothesis five indicates whether indexes of growth and learning scope, i.e. employees' satisfaction from team work, degree of using specialized individuals and creating a suitable environment for innovation and creativity have a similar role in realization of purposes.

Null hypothesis: indexes of growth and learning scope do not have a similar role in realization of purposes.

Alternative hypothesis: indexes of growth and learning scope have a similar role in realization of purposes.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement of indexes of growth and learning scope has a similar role in realization of purposes.</td>
<td>99</td>
<td>4.03</td>
<td>0.68</td>
<td>15.13</td>
<td>98</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Given to test statistic, null hypothesis is rejected at confidence level 95%; thus improvement of indexes of growth and learning scope has a similar role in realization of purposes.

The last hypothesis studies financial scope indexes that include investment return rate, ratio of current expenses and quick ratio.

Null hypothesis: financial scope indexes do not have a similar role in realization of purposes.
Alternative hypothesis: financial scope indexes have a similar role in realization of purposes.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t</th>
<th>Degree of freedom</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement of indexes of financial scope has a similar role in realization of purposes.</td>
<td>99</td>
<td>4.37</td>
<td>0.69</td>
<td>19.62</td>
<td>98</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Given to the above table, null hypothesis is rejected at confidence level 95%; thus improvement of indexes of financial scope has a similar role in realization of purposes.

Conclusion

Performance assessment systems following organizational management systems are affected by epistemological viewpoint of organizational managers and planners. Balanced approach is one of the recent phenomena of the 20th century in management accounting that its favorable impacts will have a considerable role in organizational purposes, planning, customer satisfaction, increased value of shareholders, increased satisfaction of suppliers, evaluation of managers and departments' operations, establishment of strategic information systems and inter-organizational strategic communications (Namazi, 2004).

Major objective of the present paper was to study the role of balanced score card regarding performance assessment of companies listed in food and beverage industry in the stock exchange. Therefore, performance of the organization was evaluated using the above model and appropriate indexes given to accomplished studies and the existing literature. Results of testing hypotheses reveal it is necessary for the organization to emphasize internal processes more given that planning and implementing efficient and suitable processes in the organization is led to offering appropriate services. About growth and learning scope it is notable that since employees are major capitals of the organization, special attention must be paid to this sector in order to satisfy employees and provide long-term benefits of the organization. Given that the issue of balanced performance assessment could affect managers’ decision-making and recognition of the internal environment as well as strengths and weaknesses of the organization if balanced assessment is conducted through practical implementation and scientific method, it could eliminate many problems of managers and employees in the food and beverage industry.

References