



The possibility of performing the balanced scorecard in the nutritional companies of the country

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ABSTRACT: The aim of this study is to investigate the possibility of the application of "the balanced scorecard technique" in measuring the function of the nutritional companies of the country. The balanced scorecard is one of the techniques of the accounting of management. It was presented by Robert Kaplan and David Norton for the first time in 1992. The balanced scorecard has been organized based on four various views that are as follows: Financial, customer, internal processes, learning and growth. In this study, four views which are concerned with the balanced scorecard entitled the financial frameworks, customer, inter-organizational processes and learning and growth have been investigated in the form of a main hypothesis and four subordinate ones. The results showed that index making in the four views makes the balanced scorecard possible in the nutritional companies of the country. However, the prerequisites and necessary thoughts for performing these techniques in the companies of nutritional industries of the country haven't been well created. Investigating more, it became obvious that the internal process, financial, learning and growth views have been respectively considered as later ranks.

Keywords: balanced score card, function evaluation, strategy, nutritional industries.

Introduction

In regard with the expansion of the worldwide competition and the increase in customer demands, organizations should try to improve production and to offer services and processes based on the customer tastes. It is more obvious that the modern customer asks for the qualified production having suitable price. Having close relationship with customers and recognizing the internal processes of the organization adequately is essential. The function evaluation is a means which is able to recognize the internal operation of an organization totally and correctly and to offer a favorable feedback of the employees performances. According to the increasing variations and changes in the surrounding and effective factors on the organizations, the evaluation systems of performance can be effective with which an organization is evaluated extensively. In addition to the financial criteria, the non-financial criteria are included in evaluation, too. Nowadays, the organization face several basic issues concerning business. Four extensive issues which affect on business units are undoubtedly as follows:

Depending on the traditional financial criteria,

Increasing the invisible possessions,

The danger of losing fame

Performing strategy (Niven, 2005:2)

The nutritional industry companies are extensive parts of the producing organizations which are in need of extensive function evaluating system consistently in order for their various non-financial criteria to

be evaluated in addition to the maintenance of financial ones; although they possess numerous non-financial criteria.

With regard to the weakness of the present systems of performance evaluation, most of the pioneer organizations have designed and established more comprehensive systems which have bonded the organizational tasks with the strategic aims and directed the organizational activities towards the customers 'need and willing offering an equal collection of financial and non-financial criteria. The new method applied by such companies for performing their strategies successfully is the balanced scorecard (Peni, 2001:58).

Scientific bases and the research background

The balanced scorecard approach was introduced and fulfilled for the first time in 1990 following a one-year study done by Kaplan and Norton companies as a means of performance management. The aim of the balanced scorecard was to show a useful summary of the basic standard of the performance of a business unit to managers. On the other side, it facilitates the equilibrium between the operation and the total strategy of the organization. Kaplan and Norton were looking for a means to change the perspective of the company into a series of clear aims. These aims must be converted to an evaluation system of performance which are related to the organization in general effectively, powerfully stressing the future (Fernandez and associates 2006:624).

The fact that the companies determine a restricted and defective image of their own performances using financial accounting criteria such as (ROI and returning period) motivated Kaplan and Norton more. They suggested that the financial criteria are completed by extra standards which meet the customer satisfactions reflect the internal business process and the ability of learning and growth. The balanced scorecard was designed to complete the financial criteria for the past performance with the motivating criteria of the following performance (Kaplan and Norton, 1996:77).

Nowadays, the producers who produce without regarding the customer needs and willings can't continue their activities easily. The basic of each organization activity is producing for the customers. The growing and changing requirements and necessities ask for a new method of managing in order to provide the efficiency of activities, to review the strategy and to be able to do each strategy task of each part of the organization well.

Balanced scorecard as a means of presenting an obvious image of various parts of the organization activities and it will also present exact information regarding the observed issues for the attendants of the organization. Considering this aim, the balanced scorecard uses a cohesive system of financial and non-financial criteria for determining the organization situation and rank (Michalska , 2005:752).

The necessity for the existence of the Equal evaluation:

The continuous improvement has been stressed in the balanced scorecard method. In most organization, the continuous is a crucial issue and if an organization isn't improved continuously, it will eventually be exited from competition (Garrison and et al 2006:697).

In order to achieve a rank in the continuous improvement, the ability of disciplined and continuous measurement of the performance of basic processes of a business unit is considered as a crucial element (Braam and Nijssen:2004).

Many organizations have discovered the importance of the continuous measurement of operation including applying different policies of year several performance evaluation. Nowadays, it is essential for the organization to review their performance processes and to investigate their supply chain performance due to the universality of business units and also to parallel these processes with the organization's strategic aims (Fernandez 2006:693).

Anyway, the recent information shows that only 5 percent of employees are aware of their organization strategy and only 25 percent of managers are motivated to communicate with the organization strategy and 60percent of organization haven't even related their budgets with the strategy and 85 percent of the executives spend just an hour a month speaking about the strategy (Kaplan and associates, 2001).
Four perspectives in balanced score card:

Balanced scorecard consists of extensive group of criteria and measurements which have been classified in a vast performance groups. Classifying the subsets of the balanced scorecard measurements as a part of performance groups is an important aspect in designing the evaluation system (Kaplan and Winsor, 2009:38).

On the other hand, the balanced scorecard for communicating among the related and multiple aims which are earnest for competing based on abilities and innovations.

The balanced scorecard changes the main aim and company strategy into the organized aims and criteria in the form of four views: financial, customer, the inner process of organization and learning and growth (Kaplan and Atkinson, 2007:369).

The financial perspective

The financial criteria evaluate the economic and measurable results of the operation previously done. The financial performance criteria determine whether the company strategy is implemented or improved for the company benefit or not? The financial criteria is often related and measured with the company ability to create interest. For instance, the operational benefit, the capital output, the quick growth of selling, creating cash currents and recently economic value added are of the financial criteria (Kaplan and Atkinson, 2007:368).

The customer perspective

The customer perspective consists of several main or general criteria of the successful results which have been well formulated and conducted. In this perspective of the balanced score card, the managers of some parts of market and customer in which the company will compete are identified and the criteria of their performance are recognized. The main performance criteria are as follows: the customer satisfaction, maintaining customers, attracting the new customers, interest making by customers and the market share. (The same :369)

Inter-organizational perspective

Due to the false strategy, the companies rarely fail. However, the reason for their failure is the lack of methods of achieving techniques surrounding a strategy. The internal view remind us of the task backgrounds directed by the final aim necessary for the financial aims and customer ones to be achieved. (Nair,2004:49,50)

Learning and growth perspective

The fourth view of the balanced scorecard is Learning and growth which creates a foundation for long-term growing and improving. Inter-organizational and customer process view identify really important factors for the current and future success of the organization. It is unlikely the organizations are able to achieve their long-term aims regarding the customers and inter-organizational processes using the current technologies and capabilities (Kaplan and Atkinson, 2007:374).

The criteria of the balanced score card

Each commercial unit or organization develops its special criteria of the balanced scorecard to reflect its aims and strategies. Of course, it is possible for some of these criteria to be included in all public units or subsets. (Kaplan and Norton, 1996:44)

Generally, the characteristics of criteria must be as follows:

To be related: They must be related to the strategic aims of the company

Controller: This issue makes the influence on criteria value possible

They must be directed in the form of activities: The innovations in the development develop the efficiency.

To be simple: The calculation rules must be simple and understandable.

To be sure: They mustn't be changed and deviated.

They must be generalized: they must be interpreted in various levels of the organization.

They must be calculated: they must be shown in the forms of numbers without spending much expenses. (Michaleska,2005:754)

The balanced scorecard introduces four management processes. These processes relate the long-term strategic aims of the company with the operational ones separately or in relation with each other. These four processes are as follows:

The evolution of strategy and the company outlook: This process helps the managers create unanimity of votes toward the organization strategy and outlook.

The explanation of aims and strategic criteria and their relationship with the management systems: This process makes streaming strategy possible in the whole organization. The balanced scorecard ensures the strategy to be realized in all organization levels and the part duties and aims and the labor forces are related to it.

Planning, recognizing the aims and identifying the strategic innovations: This process makes combining the strategic planning of the company with budget process possible.

Modifying the review systems of implementing strategy and training regarding the organization: This process provides the training conditions of so-called strategy for the company. The information system and the supervising system on strategy fulfillment existing in the company control the main management of the company and the managers of parts and the employees who know the financial aims of their performance. The balanced scorecard can be reviewed the short-term results in the form of three extra views.

The previous researches

Kaplan and Norton (1993) investigated the application of the balanced scorecard in three companies: Rock water, Apple computer, and a companies making too small advanced equipments. These three companies use scoring card for the performance evaluation and establishing strategy.

Many managers consider performance evaluation; but they rarely declare the performance evaluation as their essential part of strategy. The balanced scorecard technique can't be generally applied as a unique pattern in the commercial units or even in industry level. Different scoring cards must be applied in different market situation, production strategies and various competitive environment. The commercial units design and execute the scoring cards based on their main aim, strategy, technology and culture. The scoring card is successfully acted when it is consisted of 15 to 20 scoring criteria and the competitive strategy of the commercial unit must be identified in the card. The experiences of these three companies and others specified that the balanced scorecard will be successful most when it is adoptable with the change processes. For instance, the Rockwater company was created by merging two different companies. The employees of this company possess various cultures, languages, operation experiences and background. The management of this company could achieve the aims of the company by stressing on operation investigation, the employees 'motivations and transferring customers' feedback to the operation. It could also be pioneer.

The commercial units and different units of a commercial one gain a correct understanding of their own strategy using the scoring card. If the scoring card has a vlear view towards the company strategy, the information and even the used criteria will be important data for rivals. (Kaplan and Norton, 1993)

Martinsons and associates (1999) introduced four structures for evaluating the activity of data systems using the balanced scorecard framework in an article called "the equal evaluation": a foundation for the strategic management of data systems: the business value the user orientation, the internal process and future readiness. They state that the balanced scorecard was created as a back up means to decide in the level of strategic management. Nowadays, many commercial leaders evaluate their company performance using the financial accounting data along with customer structures, inter-organizational processes and learning and growth. The balanced scorecard can help the managers conduct the commercial duties, organizational units and special projects. The financial and intellectual investments have been applied for gathering, processing, saving and distributing data. The studies show that the issues such as the evaluation of data technology value and the evaluation of the performance of data systems are so important for managers. Investigating the reliability and validity of the balanced scorecard and it's related criteria.

Boulianne (2006) concluded that the balanced scorecard of a performance evaluation model is reliable and valid.

Chen et al (2006) investigated the determining factors in executing the equal evaluation. They concluded that the participation of the financial senior managers, the participation of different administrative manager, supporting the supreme manager of the organization and the organization size are importantly consolidated with the trends of executing the equal evaluation.

They also showed that these factors change with the trends of executing the equal evaluation. Bhagwat and sharma (2007) investigated the performance evaluation of supply chains managements in small and medium companies of India using the equal evaluation. They suggested several criteria in the scoring card to evaluate the performance of supply chains and analyzing supply chains. The performance evaluation is an essential factor of planning and effective control for decision making. The results of supply chains evaluation, the effects of strategies and potential opportunities in management reveal the supply chains. Some suitable criteria of evaluating the performance of supply chain are as follows:

The criteria for evaluating the performance of planned methods:

The method of registering the order

The method of doing the order

The method of customer ordering

Cooperating in supply chains and related scales

Evaluating services and customer satisfaction

Flexibility

The time for finding customer
Criteria and scales of production levels
The surrounding for offering services and productions
The used practical capacity
The efficiency of timing techniques
The criteria for evaluating delivery performance
Financing the supply chains and expenses of providing and distributing
The expenses related to finances and investment output.
The expenses of a collection of item inventory

In the evaluation of supply chains attempts are done to minimize the budget deviation.

Namazi (2006) has investigated Benker and associates'(2004) article critically investigating the importance of strategy in the equal evaluation. Three main problems existing in Benker and associate's (2004) article are as follows:

In this study, no exact definition and also no criteria properties related or not related to the strategy haven't been identified. The distinction between related and unrelated to strategy is contrary to the principles of equal evaluation; because one basic and primary hypothesis of the balanced scorecard is that the criteria for scoring card should be related to the company strategy. If a criteria isn't related to the company strategy, it shouldn't be selected since it doesn't lead to optimization and doesn't make it possible for the company goals to be achieved.

In this study, the hypothesis haven't been correctly stated and applying one-sided statistical tests isn't suitable.

In this study, the sampling method used and done for selecting MBA students isn't suitable and the relevant and better criteria can be used.

The exact definition of key strategies will lead to the increase in financial success in applying the balanced scorecard for evaluation the function and other applications.

The study hypotheses

The main hypotheses of the study

It is possible for the balanced scorecard to be performed in nutrition industry companies.

The subset hypotheses of the study :

It is possible for standardization in the financial perspective of the equal evaluation.

It is possible for standardization in the customer perspective of the equal evaluation.

It is possible for standardization in the internal process perspective of the equal evaluation.

It is possible for standardization in the learning and growth perspective of the equal evaluation.

Research methodology

The present study is the measuring one and the subjects of this study are the financial managers and supervisors of nutritional industry companies active in the stock. In order of the first and second type errors to be decreased and also for increasing the test power with regard to this fact that the balanced scorecard technique is new in Iran. No sampling has been done; but all nutritional industry companies active in the Iranian stock have been investigated.

68 questionnaires out of 75 were gathered out of which 61 questionnaires were filled fully and were usable in the study. The questionnaire is measuring means in this study. The research hypotheses through the gathered written questionnaires were the necessary information for testing the possibility of performing the balanced scorecard in the nutritional industry companies of the country. The questionnaires were distributed by the researcher personally. The questionnaire consists of 60 questions. Questions number 1 to 24 are related to pre-requisites and the thoughts required for performing the equal evaluation. The questions number 25 to 31 are related to the first main hypothesis of the research; that is, the possibility of standardization in the financial perspective. The questions 32 to 39 are related to the second subset hypothesis of the study; that is, the possibility of standardization in the customer perspective. The questions 40 to 50 consider and investigate the third main hypothesis of the study; that is, standardization in inter-organizational processes perspective which include the questions such as strategies and criteria to support the new programs, innovation, production developments and special strategy to decrease the administrative processes for customers. Eventually, the questions 51 to 60 investigate the fourth main hypothesis of the study; that is, the possibility for standardization in learning and growth perspective. In this study, the hypotheses of the research are tested using QP tests in certainly level of 95 and error percentage of 5. The mann-whitney U test and kruskal-wallis H test were used in order for a meaningful relationship between the general questions of the questionnaire and research hypotheses to be determined.

Results and analysis of research findings

The main hypotheses of the research were analyzed in two aspects. For this purpose, the question 1 to 60 are investigated first as the possibility of standardization of performing the equal evaluation. Then, the question 1 to 24 were studied and tested as the intellectual and executive pre-requisites necessary for performing the equal evaluation.

Performing the hypothesis test based on questions 1 to 60 of the study

As seen in figure 1, 45 cases out of 61 (74 percent) have been bigger than the average. So, it is expected for the zero hypothesis to be rejected. According to $-p$, the amount which is equal to 0.004 in 0.01 level the main hypothesis is accepted.

Performing the hypothesis test based on questions 1 to 24 of the research

As viewed and considered, 42 cases out of 61 (68 percent) have been smaller or equal to the average and 19 cases are bigger than the average. According to $-p$ the amount which is equal to 0.002 in 0.05 level the zero hypothesis is rejected. Consequently, the main hypothesis (The question 1 to 60)in 0.05 level are confirmed. Thus, with regard to the results of the two tests done in relationship with the main hypothesis of the study, we can conclude that: It is possible for the balanced scorecard in the nutritional industry companies to be performed.

Table 1. the test results related to the main hypothesis

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	16	0.26	0.5	0.004
Bigger than the average	45	0.74		
total	61	1.00		

Table 2. the test results related to the main hypothesis test (pre-requisites)

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	42	0.68	0.5	0.002
Bigger than the average	19	0.32		
total	61	1.00		

The first subset hypothesis test

The first subset hypothesis investigates the possibility of standardization in the financial perspective of the equal evaluation.

In figure 3 , the results related to the questions of the first subset hypothesis (questions 25 to 31) have been identified.

Thus, according to test results, we can conclude that it is possible for standardization financially in the nutritional industry companies.

Table 3.the test results related to the first subset hypothesis

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	19	0.30	0.5	0.001
Bigger than the average	42	0.70		
total	61	1.00		

The test related to the second subset hypothesis

This hypothesis is considered for investigating the possibility of standardization in the customer perspective. Thus, according to the test results, we can conclude that: It is possible for standardization from the customer perspective in the nutritional industry companies.

Table 4. the test results related to the second subset hypothesis

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	16	0.26	0.5	0.000
Bigger than the average	45	0.74		
total	61	1.00		

The test related to the third subset hypothesis

third subset hypothesis is related to the possibility of standardization in the internal process perspective. Thus, according to the test results we can conclude that: it is possible for standardization from the internal process perspective to be done in the nutritional industry companies.

Table 5. the test results related to the third subset hypothesis

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	17	0.28	0.5	0.000
Bigger than the average	44	0.72		
total	61	1.00		

The test related to the fourth subset hypothesis

The fourth subset hypothesis of the research has been considered to investigate the possibility for standardization from learning and growth perspective.

Thus, according to the test results we can conclude that it is possible for standardization in the nutritional industry companies from the learning and growth perspective.

As considered, according to the results of the fourth test of the subset hypothesis, the acquired results of the main hypothesis test are confirmed. On the other hand, it can be said that it is possible for standardization and performing in each four perspectives of the balanced scorecard in the nutritional industry companies.

Table 6. the test results related to the fourth subset hypothesis

Level	Number	The observed p (percentage)	p- test	p-value
Smaller or equal to average	22	0.32	0.5	0.017
Bigger than the average	39	0.68		
total	61	1.00		

The comparison the rank average between factors using friedman test:

Using this test the rank and the degrees of the strength of hypotheses can be compared. Figure 7,8 show the test results.

Table 7. the results of the test of comparing hypotheses rank using friedman test

Rank average	Comparing factors
3.79	The second hypotheses
3.31	The third hypotheses
2.99	The first hypotheses
2.54	The fourth hypotheses

Table 8. the test statistics and amount of the meaningful level of friedman test for comparing the rank

meaningful level	Freedom degree	statistics amount	number
0.000	4	55.633	61

Because p is equal to zero and this amount is smaller than 0.01; thus, it can be concluded out of zero hypotheses that the validity level 99 percent of H0 is rejected. So, as observed the rejected H0; that is, the average of hypotheses rank isn't identical. Using this test, various hypotheses can be performed (for instance, the possibility of standardization from various perspectives can be compared and more probable hypotheses can be found). Based on this research and friedman test, it was observed that the possibility of standardization is more from the customer perspective.

Conclusion and discussion

Eventually, based on QP test (the average test) all the hypotheses of the research are confirmed; that is:

It is possible for the standardization in the financial perspective of the balanced scorecard to be conducted.

It is possible for the standardization in the customer perspective of the balanced scorecard to be performed.

It is possible for the standardization in the internal processes of the balanced scorecard to be conducted.

It is possible for the standardization of in the learning and growth perspective of the balanced scorecard to be performed.

At last, the main hypotheses is also confirmed; so it is possible for performing the balanced scorecard in the nutritional industry companies.

The main principle in performing the balanced scorecard is that the function evaluation criteria are related to the strategy. According to the gained results, it can be said that the nutritional industry companies have found and discovered the importance of the non-financial criteria in the performance evaluation; but they don't use the balanced scorecard effectively.

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