The key Dimensions of Balanced Score Card in the Selected Branches of Pasargad Bank

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ABSTRACT

This research is done to recognize the key dimensions of balanced score card in the selected branches of Pasargad Bank in Tehran. This research considers criteria such as customer satisfaction, internal processes, growth and learning, and financial criteria as independent variables, and performance as dependent variable. This research uses a descriptive method and its statistical society include all staff and managers of Pasargad Bank in Tehran, which has been determined by limited-volume sampling method (n=384). A questionnaire was used to gather data, which its reliability was 85%, according to performance measurement of this bank by balanced score card model. Data was analyzed by SPSS, compared and ranked by Friedman Test, and the relation between variables was measured by correlation and regression tests. By Friedman Test, internal processes are on the first priority and the rest are growth and learning, customer satisfaction, and financial criteria. Also, the results showed that all assumptions were confirmed, so it can be said that there is a significant relation between customer satisfaction, internal processes, growth and learning, and financial criteria in Pasargad Bank.

INTRODUCTION

In today’s global economic literature, the roles and importance of financial system, capital market, and in turn, financial and credit institutions as the executive arms of this system are tangible, so that economic development is not possible without development of financial markets. Thus, financial and credit institutions play an important role in this era [3]. Development of bank services through IT networks, development of banks and virtual and semi-virtual financial institutions, and emergence of private banking created a high competition in banking industry. Competition, survival, new services, continuous change of needs of customers encouraged banks to redirect their strategies to either preserve their current customers or attract new customers by offering more desirable services. Therefore, performance of organizations must be evaluated by a performance evaluation system to provide a comprehensive view of businesses [12]. A “performance management system” directs activities along the strategic goals and is an effective guide for decision-making in human resources area (e.g. payroll, promotion, maintenance, and reward) by recognition of fortes and foibles of staff and organization, recognizes talents, identifies training needs, and provides valuable documents for reevaluation of criteria and tools [7].

In its specific case, the important results of a performance management system for staff include:

1. Human resources planning system
2. Human resources selection system
3. Human resources training system
4. Human resources development
5. Job path and Human resources subrogation system
6. Human resources payroll system
7. Human resources reward system

All executive organization and systems with any kind of mission, goals, and perspective act in a national or international territory and they require responding their customers, clienteles and beneficiaries. A company that
its goal is obtaining profit and customer satisfaction, or an organization that its goal is complete and precise execution of legal duties and R&D, must be responsible. Therefore, study of performance results is a strategic process for responding. Management quality, efficacy and performance are vital factors to accomplish development and welfare programs in a society.

Applied researches are problem-oriented; namely, all research process, from the first to the last step must turn around one or many problem. This is one of the most essential steps in an applied-scientific research. If the problem is not clear, all remaining steps of research process, including data gathering and conclusion, will be defective due to ambiguity. Therefore, it is not an overstatement when researchers believe a clear problem is a half of a research activity [11].

Study of performance of an organization is very important, so that management scholars believe that what is not measurable is not manageable. All private and public organizations need a performance evaluation system for their growth and development to measure their efficiency. Efficient organizations do not suffice data gathering and analyzing, but they use the data to improve their organization and to accomplish their missions and strategies. In other words, they manage their performances instead of evaluating them.

A larger organization needs a duplicate control system. Managers of these organizations encounter higher mental and nervous pressures; they are ambiguous and they don’t know how to direct their subordinates and to monitor which department. The main subject in many administrations, especially those with many branches, is that there is no logical and proper method for their performance evaluation. If there was a good index, they could direct their forces better toward their strategic goals.

Score card method is anticipated to create these measures and indices. Balanced score card model is one of the modern methods which evaluates performance of an organization by four financial, customer, internal, and growth and learning (creativity) views. As aforementioned, study of performances of banks accepted in Tehran Stock Exchange (selected branches of Pasargad Bank in Tehran) by balanced score card model is adjustable. This research evaluated performances of banks accepted in Tehran Stock Exchange by balanced score card model in the selected branches of Pasargad Bank in Tehran. So, the main question of this research is “How do we can evaluate performances of banks accepted in Tehran Stock Exchange by balanced score card model in the selected branches of Pasargad Bank in Tehran?

**History:**

Abdollahzadeh [1], in his research titled “the role of performance evaluation by balanced score card model to improve performance”, concluded that performance evaluation affected innovation and creativity of staff, recognition of effective staff, and increased need for training, directed organization toward management-orientation, increased usage of financial performance information, and created a positive and significant relation between performance evaluation and financial performance of organization.

Rangraz *et al.* [14] offered a model by combination of balanced score card model, as a strategic planning method and 6-sigma projects, as a program for implementation of strategies. They commenced with environment analysis and strategy redaction and defined and executed 6-sigma projects by identification of organization processes and connection of their indices to the performance and strategic indices.

Pendarian [13], in a research titled “study of the role of performance management systems in improvement of organizations by balance score card model”, concluded that financial promotion index of company increased by performance management approach; there was a positive and significant relation between performance management and tendency for effective use of financial reports; there was a positive relation between organizational response and performance management; and there was a significant relation between customer-orientation and tendency to use performance management systems.

Momeni *et al.* [12] studied performance evaluation of private banks accepted in Tehran Stock Exchange by a combinational fuzzy multi-criterion decision making and balanced score card approach. They first designed four BSC aspects to evaluate performance by missions, goals, solutions, and literature review. Then they used experts in banking field to determine criteria. In this research, Parsian Bank was at the first rank, and Eghtesad Novin Bank and Karafarin Bank were at the second and third ranks, respectively.

Davis & Albright [2] did a research titled “the effect of implementation of balanced evaluation on companies in an American bank”. They implemented balance evaluation in four branches of a bank and compared the indices with those of four branches with traditional performance evaluation methods after two years. They found that there was a significant relation between implementation of balanced evaluation and performance improvement in these branches.

Hoque & James [4] did a research in the production companies in Australia and studied application of balanced evaluation criteria in these companies. The goal of this research was study of relation of application of balanced evaluation with organization size, product life cycle, market authority, and organizational performance. Their results indicated that there was a positive relation between application of common criteria for balanced evaluation and better performance. But, in this research, non-financial performance criteria had a larger role in improvement of companies.
Malina & Selto [10] studied efficacy of balanced evaluation in transfer of strategic goals. According to this study, use of balanced score card led to performance improvement of organizations.

Ittner et al. [6] claimed that there was a negative relation between use of balanced evaluation and financial performance. This was a study on financial services industry. They also found that 75% of companies announced they didn’t trust non-financial evaluation models.

**Assumptions:**

The following assumptions have been designed to approach the goals:

- **Assumption 1:** There is significant relation between customer satisfaction criterion and performance of selected branches of Pasargad Bank.
- **Assumption 2:** There is significant relation between financial criterion and performance of selected branches of Pasargad Bank.
- **Assumption 3:** There is significant relation between internal processes criterion and performance of selected branches of Pasargad Bank.
- **Assumption 4:** There is significant relation between growth and learning criterion and performance of selected branches of Pasargad Bank.

**Methodology:**

This is an applied research by goal, a descriptive-correlational one by nature, a documentary one by data, and a post-event one by execution. The goal of this research is study of performances of selected branches of Pasargad Bank by balanced score card model. Linear regression and correlation coefficient were used to study the relation between the variables. The assumptions were examined by 95% confidence level. Non-linear test was also conducted between the variables, but, by value of F statistic and significance level, it was found that linear regression provided the best fit for the variables.

**Data gathering:**

Each phenomenon has quantitative a qualitative features. These phenomena change like variables over time. The goal of each research is attaining information about these changes. Finding a suitable solution for a certain problem in each research requires attaining data to test the assumptions that were considered as probable and temporary answers of research problem [8].

The following methods were used to gather data:
1. Study of related books and theses;
2. Study of related internal and external papers;
3. Using questionnaire as the most important tool.

**Conceptual model of research:**

Regarding to the title of this research and findings from related literature for performance evaluation by balanced score card model, the theoretical framework of this research was prepared so that to guide the researcher to gather and analyze data. This framework is shown in fig. 1. It should be said that there are other factors affecting the research variables, as noisy variables, but they assumed constant in this research.

![Conceptual model of research](image)

**Fig. 1:** Conceptual model of research.

**Society and sample:**

This research uses random sampling method. The members of the statistical society have equal chances to be selected. By this approach, it is probable the desired pattern is distributed as same as the selected elements.
Thus, this method has least bias and most extension. Generally, in this method, each member of society has an equal selection probability [15].

A random sampling has three conditions:
1. Equal selection probability for all members;
2. Fixed selection probability in all sampling stages;
3. Selection of each member does not affect the other (Khalili Shurini, 1996).

The Cochran Formula was used to determine the sample size:

\[
    n = \frac{z^2 pq}{d^2} = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 384
\]

(1)

In which,
- \( z \) = 95% confident coefficient equal to 1.96
- \( d \) = desirable precision (0.05)
- \( p \) = existence of desired feature (0.5)
- \( q \) = non-existence of desired feature (0.5)

Regarding to the sample size and by anticipation of non-completion of some questionnaires by staff, 390 questionnaires were distributed, which 350 questionnaires were returned, but 340 of them were analyzed.

**Findings and data analysis:**

**Test of assumption 1:**

The following hypotheses were tested by error level of 0.05:

- \( H_0 \): zero correlation coefficient for two variables
- \( H_1 \): non-zero correlation coefficient for two variables

**Table 1: Results of testing assumption 1.**

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Customer</th>
<th>Correlation Coefficient</th>
<th>Financial Performance</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Customer</td>
<td>Correlation Coefficient</td>
<td>.871**</td>
<td>.000</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
<td>Correlation Coefficient</td>
<td>.871**</td>
<td>.000</td>
<td>350</td>
<td>350</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

The results of correlation test for these two variables indicate the Spearman correlation coefficient with significance level of \( \alpha = 0.000 \) is \( R = 0.871 \). Since this is little than our desired significance level, \( H_0 \) is rejected. Thus, \( H_1 \) is accepted. Therefore, there is a positive and significant relation between customer and performance. The obtained correlation (\( R = 0.871 \)) shows a strong and direct correlation between two variables. Thus, “there is a strong and direct correlation between customer and performance.

**Test of assumption 2:**

- \( H_0 \): zero correlation coefficient for two variables
- \( H_1 \): non-zero correlation coefficient for two variables

**Table 2: Results of testing assumption 2.**

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Internal business processes</th>
<th>Correlation Coefficient</th>
<th>Financial Performance</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal business processes</td>
<td>Correlation Coefficient</td>
<td>.847**</td>
<td>.000</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
<td>Correlation Coefficient</td>
<td>.847**</td>
<td>.000</td>
<td>350</td>
<td>350</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

The results of correlation test for these two variables indicate the Spearman correlation coefficient with significance level of \( \alpha = 0.000 \) is \( R = 0.847 \). Since this is little than our desired significance level, \( H_0 \) is rejected. Thus, \( H_1 \) is accepted. Therefore, there is a positive and significant relation between internal processes and performance. The obtained correlation (\( R = 0.847 \)) shows a strong and direct correlation between two variables. Thus, “there is a strong and direct correlation between internal processes and performance.

**Test of assumption 3:**

- \( H_0 \): zero correlation coefficient for two variables
H1: non-zero correlation coefficient for two variables

Table 3: Results of testing assumption 3

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Learning and growth</th>
<th>Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>350</td>
</tr>
<tr>
<td>Performance</td>
<td>Correlation Coefficient</td>
<td>.833**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>350</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

The results of correlation test for these two variables indicate the Spearman correlation coefficient with significance level of \(\alpha=0.000\) is \(R=0.833\). Since this is little than our desired significance level, \(H_0\) is rejected. Thus, \(H_1\) is accepted. Therefore, there is a positive and significant relation between growth and learning and performance. The obtained correlation (\(R=0.833\)) shows a strong and direct correlation between two variables. Thus, “there is a strong and direct correlation between growth and learning and performance.

Test of assumption 4:

\(H_0\): zero correlation coefficient for two variables

\(H_1\): non-zero correlation coefficient for two variables

Table 4: Results of testing assumption 4

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Financial</th>
<th>Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>350</td>
</tr>
<tr>
<td>Performance</td>
<td>Correlation Coefficient</td>
<td>.786**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>350</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

The results of correlation test for these two variables indicate the Spearman correlation coefficient with significance level of \(\alpha=0.000\) is \(R=0.786\). Since this is little than our desired significance level, \(H_0\) is rejected. Thus, \(H_1\) is accepted. Therefore, there is a positive and significant relation between financial criterion and performance. The obtained correlation (\(R=0.786\)) shows a strong and direct correlation between two variables. Thus, “there is a strong and direct correlation between financial criterion and performance.

Multiple variable regression analysis:

In the regression method, at first the significance of regression model must be tested, which is done by ANOVA table. Then significance of all coefficients of independent variable is examined, by coefficients table. Also the following conditions must be tested:

1. Average (expectation value) of errors (\(E(e_i)=0\))
2. Variance of errors, which must be constant (\(\text{var}(e_i)=\sigma^2\))
   - The assumptions (1) and (2) above require a normal distribution, so we must calculate standard errors. Then we must draw data distribution chart and normal curve and compare them.
3. If there is no correlation between the errors (\(\text{cov}(e_i,e_j)=0\)), which is done by Durbin-Watson Test;
4. If dependent variable has a normal distribution;
5. If there is no correlation between independent variables, which is done by collinear test.

Table 5: Brief of regression model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00a</td>
<td>1.00</td>
<td>1.00</td>
<td>.00286</td>
<td>2.063</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Financial, Learning and growth, Customer, Internal business processes
b. Dependent Variable: Financial Performance

Durbin-Watson statistic is between 1.5 and 2.5, then the errors are independent (assumption 3).
Table 6: Variance analysis.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>66.807</td>
<td>4</td>
<td>16.702</td>
<td>20488.33105</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>.003</td>
<td>345</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66.810</td>
<td>349</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Financial, Learning and growth, Customer, Internal business processes
b. Dependent Variable: Financial Performance

Sig is less than 0.05, and there is linear relation between variables (significance of regression).

Table 7: Regression model coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Co linearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.002</td>
<td>.001</td>
<td>1.591</td>
<td>.112</td>
<td></td>
</tr>
<tr>
<td>Customer</td>
<td>.263</td>
<td>.000</td>
<td>.323</td>
<td>.623</td>
<td>506</td>
</tr>
<tr>
<td>Internal business processes</td>
<td>.261</td>
<td>.001</td>
<td>.279</td>
<td>472</td>
<td>771</td>
</tr>
<tr>
<td>Learning and growth</td>
<td>.261</td>
<td>.001</td>
<td>.292</td>
<td>521</td>
<td>633</td>
</tr>
<tr>
<td>Financial</td>
<td>.215</td>
<td>.000</td>
<td>.301</td>
<td>713</td>
<td>048</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance

Since sig for all variables is less than 0.05, then all coefficients are significant and should not be exited from regression.

The regression model is:

Financial Performance = 0.002 + 0.263(Customer) + 0.261(Internal business processes) + 0.261(Learning and growth) + 0.215(Financial)

Discussion and conclusion:

1. This research studied relation of variables of balanced score card model for performances of selected branches of Pasargad Bank. The results show that internal processes criterion is on the highest level and financial criterion is on the lowest level. Thereafter, there are growth & learning and customer satisfaction criteria. This is compatible with the results of Pendarian.

2. There is a strong correlation between variables of balanced score card and performance, and all assumptions were confirmed. Since there was no certain pattern in this regard and regarding to the ranking of this research, it seems that the most effective criterion for performance of staff of Pasargad Bank is internal processes, and the other criteria are growth & learning, customer satisfaction, and financial criterion, respectively. This means internal processes are at the base and financial criterion is on the top of a pyramid if the base is the most effective and the top is the less effective performance criteria.

3. As aforementioned, many previous researches, such as Pendarian [13], Ajami et al. (2008), Rangraz et al. [14], Davis and Albert [2] and Ittner et al. [6] emphasized evaluation based on balanced score card model in different areas. Regarding to the results, the criteria of this research as an effective set are able to cover a high percentage of effective factors on organizational performance. Therefore, there are many other factors affecting performance including structure, obligation, leadership, management styles, reward and punishment systems, job analysis processes, major and partial goals, society, etc. However, these four criteria can justify a large part of the effective factors on performance.

REFERENCES


