A Review on the Effect of BSC Performance Evaluation Factors of Iranian Selected Companies by FUZZY DEMETEL

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Abstract. This study was an attempt to review the effect of BSC performance evaluation factors. For this purpose, performance factors were identified. After identifying these factors, screening was conducted by the Delphi method. Finally, the impact and influence of each factor on each other were determined by the fuzzy DEMETEL method.

In this study, population included consultants and experts in the field of strategic management consulting. Furthermore, data were collected through questionnaire for assessment and measurement of research variables. Twenty people were selected as the experts according to the sampling method which was purposeful and indicators to define the expertise of the respondents.

In this study, quantitative approach and survey method were used.

Keywords: Strategic management; performance evaluation of organization; Fuzzy DEMETEL; Fuzzy ANP

1. INTRODUCTION

From the beginning of the emergence of strategic management literature in the business scene it was always the promise of achieving competitive advantage and success for the organization. The history of this science dates back to 1954-1961. U.S. department of defense established this science and it entered the business world in 1962. Experts such as Chandler studied the concepts related to this science in 1960s to determine objectives, identify actions, and allocate resources in order to achieve the objectives (Chandler A, 1962).

By studying the literature on strategic management, it is found that there is no fixed and absolute way to perform and inject it into the organization. This way varies from organization to organization, and is needed to achieve a deeper vision and call for an increased focus on conditions and various factors (Mintzberge, Ahlstrand, and Lampel, 1998; Bryson, 2004).

Fundamental research questions are raised by stating what, why and how. What questions consider descriptive nature of the phenomenon. Why questions look for cause and effect after describing and how questions provide a mechanism for why. In this study, how and why questions are raised. So, the main question to which this study is intended to respond appropriately includes:

- What are BSC performance evaluation factors in Iranian organizations?

2. RESEARCH FRAMEWORK AND LITERATURE

Environmental changes and a change in policies, attitudes, and structures result in a change in the organization's goals and objectives. Traditional planning is based on determining goals and objectives but strategic planning is based on defining and formulating strategy (Shaani, 2004). Planning provides...
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a way to design a desirable plan for the future and how to achieve it. The purpose of planning is to improve the organization's systems and functions. Managers should improve, evaluate, and monitor the effectiveness of the planning process as one of their main tasks to have a plan for achieving the planning objective (Philips & Moutinho, 1999).

a. Strategic management

Strategic management is the science of formulation, implementation and evaluation of multitasking decisions control and enables the organization to achieve its long term goals (David, 2012, p. 24). It is a reasonable, objective and systematic way to make major decisions in the organization.

b. Balanced Scorecard (BSC) Model

Balanced scorecard (BSC) model is one of the most complete and comprehensive methods to evaluate the organization. This method is based on the organization's strategy. It monitors moment by moment current status of performance then measures and evaluates strategic objectives and plans. BSC evaluates the organization through four main axis including customer, finance, process and learning.

The balanced scorecard was first introduced by Kaplan and Norton. It is a new concept that allows managers to monitor and control managerial processes. This card consists of four perspectives to track the organization's financial situation and acquire intangible assets of the organization. Financial perspective addresses the final results of the business which leads to financial profit (Kordnaeij and Mohabatian, 2008). Four-dimensional framework demonstrates that how organizations create values for their shareholders by excellence in internal processes and improving customer relationship and provide continuous improvement processes by aligning employees, systems and internal culture (Lin, 2008).

i. Definitions of the balanced scorecard

Various definitions of the balanced scorecard have been presented by scholars and researchers. Some of the most important and comprehensive definitions are presented below:

Technical balanced assessment model changes formulated strategies to implemented ones developed. This model receives vision, mission, strategy and prospects of the organization and helps them to be implemented by modeling (Kaplan and Norton, 2012, p. 128).

The balanced scorecard model demonstrates how organizations create values for their shareholders by excellence in internal processes and improving customer relationship and provide continuous improvement processes by aligning employees, systems and internal culture (Khadjivro et al., 2007).

The balanced scorecard balances the past, present and future measurement and on the other hand establishes a balance between external and internal measurement. It also balances outputs and performance incentives. The balanced scorecard represents the information, skills and systems required for employees to innovate and create strategic capabilities and productivity. This card provides more value to the market which subsequently creates additional value for stakeholders (Jafari, 2007).

The balanced scorecard consists of indicators which evaluate the past, present and future performance of the organization and put financial and non-financial criteria together. What happens inside and outside the organization leads to creating a comprehensive insight in the organization's managers (Abdolahi, 2007)?

ii. Balanced scorecard for performance evaluation or a strategic management tool

Balanced scorecard is used in various fields, including performance management, human resource management, strategic management, value engineering, and knowledge management and... . If you take a deep look, you will find out BSC is appropriate for evaluating the performance of the organization and management of its strategies.
An article in FORTUNE magazine in 1999 showed that the reason for 70% of the failure of senior executives in America is because of the failure in the implementation of strategies rather than weaknesses in formulating strategies (Kaplan and Norton, 2012, p. 123).

Balanced scorecard model is a new model for implementation of the strategy in the organization and seeks measurements of the motivations in the organization. Balanced score card model focuses on two concepts:

1. Emphasis on the process of formulating the strategy and goal setting at all levels.
2. Evaluation of the organization's success in achieving the formulated goals (Kaplan and Norton, 2012, p. 140).

iii. Four dimensions of balanced scorecard

Kaplan-Norton defined the following four dimensions for the balanced scorecard:

- **Financial**: how can we keep current service levels at the budget level and use opportunities to make profits?
- **Customer**: who are our customers? What products and services should be designed for customers? What are our proposed values for them?
- **Internal processes**: what processes should be optimally designed or modified to achieve customer satisfaction?
- **Growth and learning**: What training should be implemented in the organization to improve it provide and achieve objectives?

What distinguishes traditional accounting from the balanced scorecard is that traditional accounting gives a special attention to financial indicators, while the balanced scorecard gives a special attention not only to financial indicators but also to the other three factors which lead to the organization’s success intangibly. These three factors are almost equivalent to the intellectual capital and include human capital, structural capital, and customer capital. The stated factors are desirable for evaluating (Jafari, 2007). Each of these dimensions will be discussed below:

1. **Customer**

Customer is someone whom the organization wants to create value that affects his behavior (Irannejad, 1999, p.42). Customers are people or operations that consume the product or the results of performance or need them and benefit from them (Khodabakhsh Gorgani, 2010, p. 31).

Organizations resort to the following factors to clarify contents of this dimension:

- **Operational excellence**: organizations which choose this strategy as their main strategy focus on reducing the cost of promoting the use of the product, and ease of use of products and services.
- **Product leadership**: organizations which resort to this strategy place great emphasis on continuous innovation and provide the best product or service in the market.
- **Customer intimacy**: The action criterion is to fulfill the demands and needs of our customers and building long term relationship with them. So, this is a win-win relationship with customers to solve their problems.

Some criteria have been considered for evaluation in this dimension including:

- **Customer satisfaction**: Customer satisfaction is an important factor so that all activities of the organization to increase customer satisfaction are concerned. Satisfaction can be defined as follows:

  It is a person’s pleasant or unpleasant feelings resulted from the compression of mental performance with his/her expectations.
 Basically satisfaction is a function of mental performance and expectations. In the other words, if performance is lower than expectations, the customer will be unsatisfied. If the performance is the same with the expectations, the customer will be satisfied. Finally, if the performance exceeds the expectations, the customer will be very satisfied and pleased (Cutler, 2012, p. 78).

Other factors related to this evaluation are as follows:

Market share rate: The firm share to the market share is usually expressed as a percentage of the total market during a period (Zahedi, 2009, p. 230). The performance of the organization compared with competitors can be measured by the market share which the organization can gain. A segment of the market which the organization possesses is called market share (Sutherland and Cannula, 2011, p. 223).

Customer retention rate: it indicates the rate of customers who left the company. The organization doubles its annual growth is by reducing the number of lost customers. Given that acquiring a new customer costs five times more than retaining existing customers, customer defection rate will become more important for the organization day after day. Nevertheless, the vast majority of organizations do not know their customer defection rate (Sutherland and Cannula, 2011, p. 93).

Customer growth rate: Attempts to increase the number of customers and the development of their relations with the company. This part of the strategy is medium term in terms of length of time and focuses on the processes such as the development of the capacity to provide the solution to customers during sales, and to deepen relationships with them (Kaplan and Norton, 2012, p. 158).

Profit per the customer: Profit is the excess of revenues to expenditures for a given period, which represents a net increase in shareholders’ equity and is resulted from continuing profit operations of the economic unit, subsidiary operations, random events, other events, operations, and circumstances that affect the economic unit (Moridi, 2002, p. 343).

All criteria discussed in this dimension refer to attracting and retaining the customer and trying to make the customer loyalty. Customer loyalty has become as a significant factor in business success of an insurance company. We know very well there is no guarantee that satisfied customers purchase again. That's the reason that today customer loyalty in the business success of a company is significantly more important than customer satisfaction. Loyal customers provide the amazing marketing workforce through word of mouth advertising and recommending goods and services to other acquaintances (Ndubisi, 2007). According to the researchers, loyalty represents a commitment to the brand that may not be reflected in the measurement of repetitive behaviors. More specifically, the standards of behavior to justify why and how to create brand loyalty are not enough (Khorshidi and Kardgar, 2009). Customer loyalty contains the customer’s behavior and attitudes. Components or elements of the customer attitudes represent his ideas for repurchasing, intention to buy other goods and services from the same company, and the desire to introduce the company to others (Akbar, Norjahan, 2009).

According to the definition of Jacoby and Kyner in 1973, the most famous acceptable definition for loyalty is as below:

Loyalty is as a prejudice to the brand and the behavioral response over time. The person prefers a specific brand to other brands and decides as a mental commitment to it (Haghighi Kafash, 2011).

Pearson has defined customer loyalty as the mid set of the customers who hold favorable attitudes towards a company, commit a repurchase the company’s product or service, and recommend the product or service to others (Akbar, Norjahan, 2009).

2. Internal business processes

This dimension represents the processes in the organization that must be reviewed or redesigned. Organizations should identify processes and provide value creation for customers and, ultimately, shareholders by transcending each one of them. Achieving each of the objectives from the perspective of the customer requires one or more effective and efficient operational process. These processes should be defined in terms of internal processes and measurement are described to evaluate and monitor each
process so that their progress can be assessed. As mentioned, the current process should be reviewed and improved or new processes are designed and implemented to meet the needs of stakeholders.

The criteria which should be considered include:

- **Effective interaction:** Effectiveness in strategic management refers to the plans, projects, and tasks which the corresponding performance indicators have been formulated. Effectiveness is measured by determining the reliable quantitative and qualitative results and their nature. In simpler words, effectiveness means the proper performance of a task or mission. Effective interaction refers to a situation that interactions between processes are effective and there is no effect to achieve goals (Sutherland and Cannula, 2011, p. 117).

- **Customer complaints:** Responding to customers is an indicator for the organization’s ability to identify and fulfill needs and demands of its customers. Various reports suggest that about 40 percent of organizations fail in response to demands and needs of customers. If there is no response and fulfill the customer’s needs wrongly, the complaints and dissatisfaction increase and the willingness of customers to use the company's products and services decreases (Sutherland and Cannula, 2011, p. 95).

- **Reasonable processes and forms:** Organizations should pay special attention to some cases such as: the process of inputs to the final product through activities such as design, assembly, molding, testing and ..., creating appropriate processes, mechanisms, and forms (Harrison and John, 2007, p. 293).

- **Sales performance:** Performance means the end result of the activity (Khodadad, 2008, p. 214). The achievement or non-achievement of specific results which are realizable (Stone, 2006, p. 236). Sales means the transfer of ownership of one or more items or agreement for certain services in exchange for cash or payment in the future (Moridi, 2002, p. 418). Sales performance refers to the result of activities due to product sales or customer service.

- **Performance management:** It refers to how management is performed during the specified time. Managers who are responsible for all or part of success of the company (Ansf, 2001, p. 286) managers who have the ability to communicate with others and focus on commitment (Lund, 2007, p. 91).

3. **Growth and learning**

This dimension serves as an enabler of three other dimensions. They are the foundation and infrastructure for creating balanced evaluation system. When organizations determine measurements based on customer’s perspectives and internal processes, they notice a gap between the skills and abilities of the employees and levels of performance. The distance between the information technology and information systems appears and the designed measurements in terms of growth and learning should fill this gap and vacuum. Organizations must design and implementation of measurements and increase levels of education and skills of their employees to reach the required level in the previous dimensions. It always should be noted that training for each employee should be tailored to the needs of the post and the strategic need and needs assessment should be done with tact. On the other hand, the information needs and information systems to assist in this process should be well planned and appropriately analyzed and identify these gaps to remove them by a proper plan.

This dimension includes the following measurements:

- **Responding to customer service:** As stated, responding to customers is the indicator of the organization’s ability to identify and fulfill needs and demands of its customers (Sutherland and Cannula, 2011, p. 95).

- **Professional training:** Create a good standard of performance or behavior through guidance and action. A part of human resources management which focuses on the efficient use of human resources in the organization and emphasizes on the training and skills necessary for their jobs (Stone, 2006, p. 338).
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- Staff stability: Human resource management seeks to attract, develop and retain competent workforces; so that, the capable workforces lead the organization to achieve its goals (Farhangi, Safarzadeh, 2007, p. 179).
- Employee satisfaction: Human resource management is now largely seen as the main task of general management. Human resources are known as the main assets of the company’s intellectual and social capital. Creating areas to increase their satisfaction and motivation is one of the main tasks of organizations (Hay and Williamson, 1391, p. 155).
- Organizational competence: It is almost resulted from the experience and represents a set of learning over time for obtaining real competencies and skills. Qualifications must be consciously created and developed (Kia Kojoori, Hoseinzadeh, 2012, p. 143).

4. Financial

Financial dimension is one of the key elements of the balanced scorecard especially in nonprofit organizations. This dimension demonstrates that what financial results and achievement activities in three previous dimensions have finally achieved. Organizations can devote all their efforts to increase customer satisfaction, product quality, reduce the delivery time, and improve their processes and ... but if all these efforts fail to produce tangible results in financial reports, they will have little value. Classic function indicators are usually shown in the financial dimension. Organizations devote all their activities and appropriate actions to enhance the level of services and products for their customers and stakeholders and finally reach their ultimate goal which is reflected in the financial indicators. Financial indicators of organizations are so important that many organizations have given a special attention to them and performance evaluation is done by the evaluation of these indicators.

The measurements for this dimension include:

- Tax revenue: Direct tax can be called income tax, profit or wealth tax and so on. The tax is collected directly from the income or assets of real and legal people (Wikipedia, 2013).
- Debt rate: It is amount of expected debt (Wikipedia, 2013).
- Return on Assets (ROA): The amount of assets that we expect to be returned at a specified time interval (Wikipedia, 2013).
- Earnings per Share (EPS): It is the portion of a company's earnings, net of taxes and preferred stock dividends, that is allocated to each share of common stock (Wikipedia, 2013).
- Profit margin: It is the difference between the sale price of equipment and products or services to the third-party and the costs associated with their production (Sutherland and Cannula, 2001, p. 300).
- Profit margin: It is the ratio by which profitability of every dollar (or every rial) to sales is calculated, so that the amount of profit after tax deduction is divided by net sales (Wikipedia, 2013).
- Return on investment (ROI): One of the standard methods of evaluation of economic projects in engineering economic is return on investment. The criterion for evaluation of the project is the long term and short term of return on investment. Return on investment is to measure, per period, rates of return on money invested in an economic entity. Projects with the short term of return on investment are more attractive than projects with long term of return on investment. This method is particularly useful when comparing two or more projects together. (Wikipedia, 2013).

3. METHODOLOGY

In this study, quantitative approach and survey method were used. Data were collected through the questionnaire. The population included strategic consultants of Iranian companies and organizations. Twenty people were selected as the experts according to the sampling method which was purposeful and indicators to define the expertise of the respondents.

Expert selection criteria included theoretical mastery, practical experience, willingness and ability to participate in research, and access. These criteria are determined by the following four indicators:
• Indicator 1: Passing education courses to receive formal certification (more than 30 hours), passing a course of strategic management and implementation of strategic plans at the master's and doctoral-level of university as well as having experience of at least implementation of ten strategic projects in Iranian organizations and companies.
• Indicator 2: Having experience in the design of methodology of strategic planning projects.
• Indicator 3: Availability (the questionnaire must be completed in person).
•Indicator 4: Willingness to participate in research.

Literature and information resources related to strategic planning were studied to determine questions of the questionnaire. Data analysis was done by the method of decision analysis. Therefore, the fuzzy DEMATEL method was selected. First, indicators related to the problem were identified through articles, books, interviews and other resources. Then indicators were screened by the Delphi method and the experts. The desired criteria were distributed among the experts for three rounds. Finally, the criteria with acceptance of more than 70% were extracted as the research criteria. Then, the effectiveness of any criterion on each other was determined by the fuzzy DEMATEL method.

4. VALIDITY AND RELIABILITY OF RESEARCH

Experts and professors with expertise in strategic management consulting including 5 people were asked to determine validity of the questionnaire. Cronbach’s alpha was used to determine reliability of the questionnaire. Cronbach's alpha coefficient for distribution and collection of ten questionnaires was 0.864. It reflects high reliability of the questionnaire in this study.

5. FINDINGS

The research model is demonstrated below. Effective factors in the evaluation organizational performance were measured. The effectiveness of each of these factors on each other was evaluated. Graphical model is displayed for more understanding of the research model.
As stated, the problem solving method was based on MCDM methods. These methods emphasize on pairwise comparisons and selecting the expert sample for responding to the research question. Forasmuch as this study reviews the impact and influence of performance factors, the fuzzy DEMATEL method was selected. The reason for choosing fuzzy is to consider the comments carefully and obtain a more appropriate result.
Step One: Identifying and selecting experts, the criteria and indicators.

Step Two: Identifying the research criteria and indicators.

Criteria and indicators were extracted by library and field studies.

Step Three: criteria screening

Identified criteria and indicators were screened by five experts. They were asked to give their opinion on the comprehensiveness of the measured criteria. These criteria were screened as displayed in the following figure. The criteria were distributed among experts for three rounds. Finally, the criteria with acceptance of more than 70% were extracted as the research criteria.

![Image of screened criteria]

Figure 2. The screened criteria.

6. FUZZY DEMATEL METHOD

The fuzzy DEMATEL method has been used in various fields such as aviation safety (Liou et al, 2008), Agriculture ((Kim, 2006), decision (Hajime & Kenichi, 2007; Lin & Wu, 2008; Tseng, 2009), knowledge management (Shi, Peng, Kou, & Chen, 2005) Business (Wu & Lee, 2007) and ...

Step One: Designing fuzzy linguistic criteria

After identifying and providing the desired criteria, linguistic criteria were determined to review and comment on the impact of criteria on each other based on fuzzy values. The desired criteria with the linguistic criteria were given the decision maker to compare them and resolve uncertainty (Reyes et al., 2011).

For this purpose, the table below is presented including linguistic variables.
Table 1. Linguistic variables.

<table>
<thead>
<tr>
<th>Linguistic criteria</th>
<th>Symbol</th>
<th>Fuzzy values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-impact</td>
<td>1</td>
<td>(1,1,1,)</td>
</tr>
<tr>
<td>Low impact</td>
<td>2</td>
<td>(2,3,4,)</td>
</tr>
<tr>
<td>Moderate impact</td>
<td>3</td>
<td>(4,5,6,)</td>
</tr>
<tr>
<td>High impact</td>
<td>4</td>
<td>(6,7,8,)</td>
</tr>
<tr>
<td>Very high impact</td>
<td>5</td>
<td>(8,9,9,)</td>
</tr>
</tbody>
</table>

Step Two: Asking survey respondents

In this step, any respondent was asked to determine the impact of criteria on each other according to

\[ D = [d_{ij}] \]

where

\[ d_{ij} = (d_{ij}^l \cdot d_{ij}^m \cdot d_{ij}^r) \]

this symbol represents the respondent’s comment about the effect of the factor I on the factor j (Quan Z Huang Weilai, Zhang Y, 2011).

Nine factors of success represent a nine-by-nine matrix and ten performance evaluation factors represent a ten-by-ten matrix. Each one of the matrices was structured for each respondent separately.

Step Three: making the initial decision-making matrix \( D \)

The initial decision-making matrix was extracted by the simple average of every one’s comments. In this matrix,

\[ d_{ij} = (d_{ij}^l \cdot d_{ij}^m \cdot d_{ij}^r) \]

is triangular fuzzy numbers (Jassbimap et al, 2010).

Step Four: The calculation of the normalized matrix \( N \)

Formulas 10 and 11 were used obtain the normalized matrix (Quan & Zhang Y, 2011).

Formula 10: normalization

\[ N_h = k \times D_h \]

where

\[ h = l, m, r \]

Formula 11: K coefficient

\[ k = \min \left[ \frac{1}{\max \sum_{j=1}^{m} d_{ij}}, \frac{1}{\max \sum_{i=1}^{n} d_{ij}} \right] \]

\[ i, j \in \{1, 2, 3, ..., n\}, 1 \leq i \leq n, 1 \leq j \leq n \]

Step Five: Making matrix \( T \)

Matrix \( T \) is resulted from three matrix defining as

\[ T^l = [t_{ij}^l]_{m \times n} \prec T^m = [t_{ij}^m]_{m \times n} \prec T^r = [t_{ij}^r]_{m \times n} \]

where

\[ e_{ij}^l \prec e_{ij}^m \prec e_{ij}^r \]

and \( i, j \in \{1, 2, \cdots, n\} \).

Step Six: Matrix \( T \) was defuzzied by one of defuzzification methods including CFCS method (Opricovic & Tzeng,. 2003).

Step Seven: Calculating \( D_i - R_i \) and \( D_i + R_i \) which \( R_i \) and \( D_i \) are obtained by the sum of each row and column of matrix \( T \), respectively. After calculating \( D_i - R_i \) and \( D_i + R_i \), the diagram was drawn for the intensity of impact and influence. This diagram was the basis of decision (Jassbimap et al., 2010). \( D_i + R_i \) is on X axis and \( D_i - R_i \) is on Y axis. \( D_i + R_i \) values show the importance of any factor. More values the factor obtains, more important it will be (Shieh & Huang K, 2010).

The technique and the following method should be used for determination of the relation between factors (Lee et al., 2010).
1- If \( D_i - R_i < 0 \), \( D_i + R_i = \delta \) (\( \delta \) is a large number). So, the factor i is the main problem which should be solved.

2- If \( D_i - R_i > 0 \), \( D_i + R_i = \delta \) (\( \delta \) is a large number). So, the factor i solves the main problem and it should be prioritized.

3- If \( D_i - R_i < 0 \), \( D_i + R_i = \epsilon \) (\( \delta \) is a large number). So, the factor i is independent and affected by quantitative factors.

4- If \( D_i - R_i > 0 \), \( D_i + R_i = \epsilon \) (\( \delta \) is a large number). So, the factor i is independent and affects a few numbers of other factors.

After calculating \( D_i - R_i \) and \( D_i + R_i \), impact and influence criteria are defined as follows:

**Table 2. Impact and influence criteria for performance factors.**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1210</td>
<td>Reasonable processes and forms C3</td>
</tr>
<tr>
<td>0.6973</td>
<td>Employee satisfaction C6</td>
</tr>
<tr>
<td>0.7424</td>
<td>Management performance C4</td>
</tr>
<tr>
<td>0.5616</td>
<td>Organizational competence C7</td>
</tr>
<tr>
<td>0.3609</td>
<td>Customer satisfaction C1</td>
</tr>
<tr>
<td>-0.0929</td>
<td>Staff stability C5</td>
</tr>
<tr>
<td>-0.2967</td>
<td>Market share rate C2</td>
</tr>
<tr>
<td>-0.9708</td>
<td>Earnings per Share C8</td>
</tr>
<tr>
<td>-1.0192</td>
<td>Profit margin C9</td>
</tr>
<tr>
<td>-1.1036</td>
<td>Return on investment C10</td>
</tr>
</tbody>
</table>

For more transparency, the influence of factors on each other was calculated by the threshold value which is the average of elements in the matrix T.

These values represent the influence of the horizontal criterion on the vertical criterion. If these values are lower than the threshold value, it represents the impact of the values.

The related diagram is drawn for more understanding:

**Figure 3. Overview of impact and influence of performance factors.**

As seen, impact and influence criteria for performance factors were determined. Criteria with the most influence on the others were introduced as the most important criteria.
7. CONCLUSION

According to the findings, the criteria with the most influence on the others are considered as the best and most important criteria. Reasonable processes and forms were identified as the first criterion influencing on others. Processes and forms properly, correctly and consistently evaluate the company and are very important factors in determining the functional status. Employee satisfaction is the next factor which has become very challenging and important today. This means that all the activities of an organization depends on customer satisfaction and ultimately making profit is the result of customer satisfaction. Management performance was identified as an indicator to which paying attention is critical because employees and other stakeholders expect the managers and continuously monitor them. If managers can properly create incentives inside the environment and if they can play a very effective role among the partners and make profit for the company by preparing contracts, the performance of the company will be enhanced. On the other hand, earnings per share, profit margin, and return on investment are the crucial factors for organizational performance but have low influence and good performance of other factors influences on them. According to the business literature, this measurement is wise because financial factors are as a result of the performance of the company and demonstrated in the form of profit, return on investment, and so forth. Companies should be trying to enhance their performance by increasing the effective indicators which were mentioned above.

8. REFERENCES


[38] Qasemi javyd AR., and Aghdasi, M.,(2004). Model to measure the effectiveness of the strategic planning system based on Hvshyn Connery, Journal of Humanities teacher, 36.


