

PROVIDE A MODEL TO EVALUATE THE PERFORMANCE USING THE BSC AND EFQM LINE OF MODELS (CASE STUDY: CEMENT INDUSTRY GUILAN PROVINCE)

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Abstract: *Age do many activities with limited resources and time, improving productivity, despite a poor performance evaluation system can be a major failure. In order to assess and improve the management and performance results have the appropriate tools can be utilized so that the organization's resources and the results of their efforts in the assessment and prioritization. In this regard, the present study aims to provide a model to evaluate the performance using the BSC and EFQM Aligning and a case study in the cement industry this province has accepted that the purpose and the method of data collection study considered descriptive.*

In order to answer the research questions and the pursuit of the perfect combination, to identify strategic goals with BSC and determined in accordance with the vision of two questionnaires (with validity and reliability) are used and to determine cause and effect relationships and goals combined model, Matrix Quality Function Deployment Results: The study shows that the BSC and EFQM model in combination, can provide a useful framework for evaluating the performance, because it successfully Gilan coloring in the cement industry and has shown that the implementation of continuous improvement and increased productivity in the industry will follow.

Keywords: *Balanced Scorecard model, EFQM, performance evaluation, quality performance metrics.*

1. INTRODUCTION

Experts and researchers believe that performance evaluation is a central theme in all indicators of organizational analyzes and organizational perspective, which includes evaluation and performance measurement, is virtually impossible to appear (Grafton *et al.*, 690: 2010). Therefore, management practices and tools should be used to assess and improve performance results so that the resources can be business or organization in question is the result of their efforts to assess and

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prioritize the (Moline 2007). The most important step to effectiveness and efficiency of the performance appraisal system selection criteria, techniques and comprehensive ways to achieve this is important. Evaluate performance, it is a complex, multifaceted phenomenon that is because elements of it may distinguish priorities for management decision making and may even make them incompatible contradiction (Vrons *et al.* 2011).

The study of a special place in the cement industry, cement production plants are today one hundred fifty countries, with about 60 percent of which is produced in Asia. The importance of research and development in the industry has increased to such an extent that most companies have R & D unit to do much research on the reduction of cost and the product quality covers (DEHGHAN, 1997).

Among the patterns in evaluating the performance of two of the BSC and the EFQM model, organizations have been accepted more.

Each of these models has unique capabilities that can be provided consistent with the conditions and characteristics of organizations through which the selection of the right and of the organization on the path to excellence provide (Aqajani and jmshydy, 1997). In this regard, the present study is to model for the assessment of performance using the BSC and EFQM and Aligning with the aim of improving the effectiveness of the industry and the provinces to get them on the path of excellence by leveraging and integrating new models of the performance management.

2. THEORETICAL AND LITERATURE

2.1. Performance Evaluation

Performance evaluation assessment process and in terms of performance such as efficiency, effectiveness, empowerment, accountability capabilities in the framework of the principles and concepts for the realization of the objectives and tasks of the organizational, structural, long-term development program and performance evaluation refers organization (Sohrab Khan Mohammadi, 6: 1997).

Holton and Bates stated that “performance is a multidimensional constructs that assessment, depending on a variety of different factors.” Bernardine and his colleagues believe that “performance should be defined as work, because the results of the strongest relationship with its strategic objectives, customer satisfaction and economic role, is” (Salehinejad, 57: 2012).

2.2. Scorecard

BSC is a strategic planning approach and management system that is widely used in the commercial, industrial, governmental and non-profit worldwide, used by

businesses and organizations with a view to their strategy on a so put, organizations improve internal and external communications, and monitor organization performance compared with its strategic objectives (Gereger and Dyaus et al., 2012)

2.2.1. Dimensions of the balanced scorecard

In general, the BSC as a performance evaluation system, evaluation system and a communication strategy will be considered at the same time by four distinct visions defined below.

1. **Customer:** the proposed value that business organizations are adopting in order to satisfy our customers. Michael Porter argues that the lack of focus on certain segments of customers (beneficiaries) and the value it brings to organizations is usually the strategic implications of operational excellence and product leadership, a choice (Salehinezhad, 60: 13,2012)
2. **Internal process:** internal business processes that offer value to customers and to provide them (Gereger and Dyaus et al., 2012). In terms of internal processes, organizations must determine processes that excelling in creating value for customers and, ultimately, they can continue their shareholders (Daneshfard *et al.*, 2010).
3. **Growth and learning:** intangible assets to internal skills and abilities that are necessary to support the internal process of value creation (Gereger and Dyaus *et al.*, 2012), an organization's ability to innovate, improve and learn directly with value as a node of the estuary.

2.3. EFQM

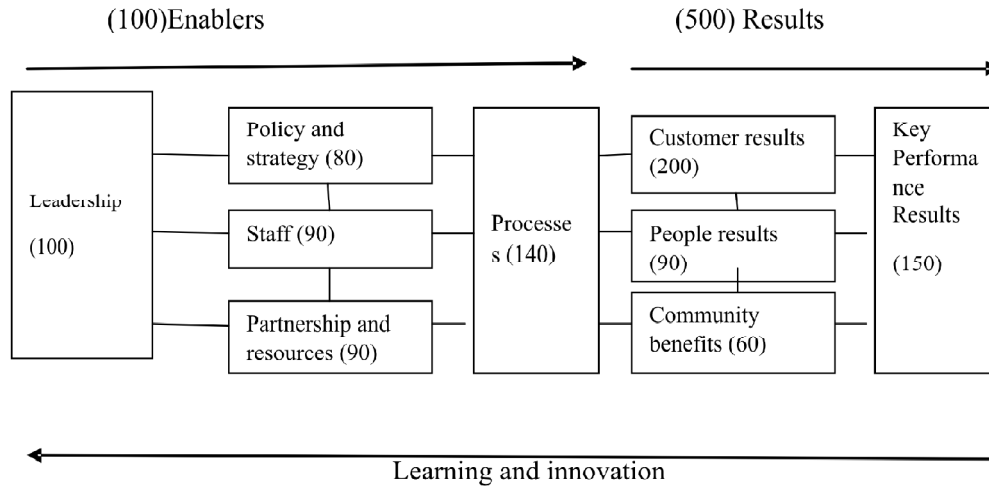
According To Mullin (2007) Excellence Model to improve performance management approach that identifies the activities and focusing on organizational structures and processes and to communicate to the ring with employees, customers, stakeholders and society, each of them provides satisfaction. So, the key message Excellence Model is based on the answers to two questions how this model as a suitable management structure and logic, and who can identify the chain of communication and interaction, play a major role (Mullen, 2007)

This model consists of nine criteria, five enablers criteria: leadership, policy and strategy, people, partnerships and resources, processes and four criteria Results: customers, employees results, society results and key performance results is that as Figure 1.

3. METHODOLOGY

Since this study is to provide a model to evaluate the performance using Aligning models of BSC and EFQM has, in terms of purpose, functional and descriptive, is, and since the questionnaires used, so as investigators Athletics deal.

Figure 1: The distribution of scores within the EFQM model EDPGI



3.1. Population and sampling

Population examined in this study included all executives and industry experts cement Gilan province and 100 people, 67 of them randomly as samples have been studied.

3.2. Measurement instruments and statistical techniques

In this study, the questionnaire is used. A questionnaire development and the establishment of causal relations strategy map has been prepared. In this regard, using matrix methodology QFD house of quality in the development of cause and effect relationships between strategic goals has been the scorecard. Namely, the financial terms of the goals of this perspective in the What (above) and other targets in the How matrix and so on for other landscapes have been placed, then the research subjects were asked to matrices formed to 10 "," 7.5 "is that this number is rounded up and the number 8.) As a known cause-effect relationship and other variables of the model have been removed.

3.3. Validity and reliability study

To determine the validity of the questionnaire targeted the 20 cement industry executives were certified and evaluated using structural equation that results is as Table 1.

As we all AVE values for all variables is greater than 0.5, thus we can say that is good convergent validity of the questionnaire. Cronbach's alpha value 0.87 has been present in the questionnaire, so the questionnaire also had the necessary reliability.

Table 1
Narrative Structures

<i>Structures</i>	<i>Narrative structures</i> <i>The average variance extracted AVE</i>
Beneficiaries	0.764
Internal processes	0.843
Growth and learning	0.885
Finance and Budget	0.732

4. FINDINGS

This research is descriptive information below.

Table 2
Descriptive information statistical population

<i>Sex contributors</i>	<i>14.93 percent and 85.07percent male female</i>
Education	6% of diploma, associate's degree in 59.9 percent, 23.8percent of bachelor's, 8.9 percent master's, and 1.4 percent Ph.D.
job experience	Under 5 years old 7.4%, 7.4%, 5 to 10 years, 18.0% of 10 to 15 years, 47.8% of 15 to 20 years and 4.19percent 20 years

Table 3
Matrix cause and effect relationships between the financial perspective and other sights

	<i>Perspective</i>	<i>Increase research funding Financial</i>	<i>The allocation of bonuses to employees</i>	<i>Increasing the budget for staff training</i>	<i>Development of modern equipment and technologies appropriate to the resources of the world</i>
		<i>Financial</i>	<i>Financial</i>	<i>Financial</i>	<i>Financial</i>
Increasing the value of asset owners and shareholders	Stakeholders	3.2	7.6	8.7	7.5
Increasing the value of shareholder profits	Stakeholders	6.4	6.2	7.3	7.4
Customer satisfaction from quality products	Stakeholders	2.3	4.6	5.4	3.2
Customer satisfaction with the quality of service	Stakeholders	4.2	5.4	2.3	1.2

contd. table

Creating more job opportunities in the community	Stakeholders	1.2	2.4	3.2	1.4
Public satisfaction with the quality of products	Stakeholders	1.5	3.6	3.7	3.4
Taking advantage of innovations, inventions	The process	6.7	4.3	5.2	9.2
See the process for consultation by industry experts	The process	6.5	2.3	4.5	4.3
In-service training courses	The process	2.3	4.7	2.1	7.8
Alignment capability at all levels of the organization coordinating the strategy motives	Growth	7.6	7.5	6.8	7.8
Potential leadership ability and motivation to mobilize organizations to access and manage their outlook change	Growth	6.5	6.2	6.5	7.2
internal awareness of the mission, vision and values are fundamental at all levels of the organization	Growth	7.3	6.4	6.5	7.2
Improve IT infrastructure	Growth	5.4	4.5	3.2	7.6
Improved database and design flexible and integrated software system	Growth	2.3	4.5	6.7	7.9
Sharing knowledge with staff and activities to create folders letter from experience	Growth	4.2	7.6	5.8	7.8
Educated labor force and efficient	Growth	2.3	6.4	4.2	4.3
Nurturing environment to absorb new ideas and talent development	Growth	2.1	6.7	2.1	7.3
Model ethics and promote a culture of teamwork	Growth	2.4	9.3	2.3	2.1

As seen in the table: A sample of three criteria: financial perspective (development of modern equipment and technology tailored to the features of the world), (increase budget, staff training) and (allocation of bonuses to employees), respectively through three methods (use of innovations, inventions and inventions), (increasing the value of asset owners and shareholders) and (model ethics and improve the culture of teamwork) are achievable.

Table 4
Matrix cause and effect relationships between the customer perspective (beneficiaries) and growth perspective and a process perspective

		<i>Increase the value of the asset owners</i>	<i>Increase the value of the benefit shareholders</i>	<i>Business customers quality products</i>	<i>Customer satisfaction with the quality of services</i>	<i>Create job opportunities in the community</i>	<i>Public satisfaction with the quality of products</i>
	<i>Perspective</i>	<i>Stakeholders</i>	<i>Stakeholders</i>	<i>Stakeholders</i>	<i>Stakeholders</i>	<i>Stakeholders</i>	<i>Stakeholders</i>
Taking advantage of innovations, inventions	The process	7.3	7.6	7.5	7.9	6.5	7.6
See the process for consultation by industry experts	The process	3.2	3.4	7.2	9.2	1.2	7.8
In-service training courses	The process	1.2	2.4	6.7	7.5	1.2	6.8
Alignment, motivation and the ability to coordinate strategy targets all levels of the organization	Growth	8.3	7.6	7.9	7.5	7.6	7.9
Leadership capability: the ability to access the motivation and mobilization of landscape change management	Growth	7.4	6.9	7.3	7.3	6.5	6.2
Awareness and internalization of the mission, vision and values	Growth	6.5	4.3	3.2	7.6	7.4	7.5

contd. table

	<i>Perspec- tive</i>	<i>Stakehol- ders</i>	<i>Stakehol- ders</i>	<i>Stakehol- ders</i>	<i>Stakehol- ders</i>	<i>Stakehol- ders</i>	<i>Stakehol- ders</i>
fundamental to all levels of the organization							
Improve IT infrastructure	Growth	6.5	5.4	4.3	2.1	6	7.3
Improved database and design flexible and integrated software system	Growth	7.4	6.3	5.7	8.9	7.3	6.2
Sharing knowledge and experience of staff by creating a folder	Growth	3.2	6.3	7.6	7.5	6.7	7.6
Educated labor force and efficient	Growth	6.3	5.6	5.4	5.7	6.7	7.1
Nurturing environment to absorb new ideas and talent development	Growth	6.5	4.5	3.2	5.7	5.3	5.2
Model ethics and promote a culture of teamwork	Growth	4.2	2.1	3.5	3.7	5.7	7.4
Taking advantage of innovations, inventions	The process	4.3	2.1	8.9	3.2	6.7	7.1
See the process for consultation by industry experts	The process	3.1	2.5	2.1	7.3	7.6	6.2

As seen in the table: From the perspective of the three categories of beneficiaries sample (increasing the value of asset owners), (business customer satisfaction with quality products and 'business customer satisfaction with the quality of service) each way, through three methods (alignment capability harmony with the goals and motivations strategy at all levels of the organization), (benefiting from innovations, inventions) and (see the process for consultation by industry experts) is achievable.

Table 5
Matrix causal relationship between growth and process perspective

	<i>Perspective</i>	<i>Benefiting from innovation, innovations and inventions</i>	<i>Provides a process for consultation by industry experts</i>	<i>In-service training courses</i>
		<i>The process</i>	<i>The process</i>	<i>The process</i>
Leadership ability, the ability to mobilize the creation of incentives for access to the prospect of change management	Growth	7.3	6.4	3.6
Knowledge and within the Mission Statement fundamental values at all levels of the organization	Growth	5.4	2.2	3.4
Improve IT infrastructure	Growth	9.3	5.6	3.2
Flexible and integrated software system designed to improve database	Growth	7.6	9.7	4.3
Knowledge sharing activities by creating folders letter from the experience of employees	Growth	6.9	7.7	8.6
Attract educated work force and efficient	Growth	5.1	4.1	6.7
Nurturing environment to absorb new ideas and talent development	Growth	6.3	7.2	7.4
Model good behavior and promote a culture of teamwork	Growth	7.1	5.3	2.2

As seen in the table: From the perspective of three criteria sample of internal processes (use of innovations, inventions), (see the process for consultation by industry experts' and in-service training courses) each way, through three methods (improve the IT infrastructure), (improving database and software system design and integration flexibility) and (sharing knowledge and experience with creating electronic directory of employees) is achievable.

Table 6
Matrix causal relationship between growth perspective, stakeholders and process

	<i>Perspec- tive</i>	<i>Align- ment</i>	<i>Leader- ship ability</i>	<i>And inter- nal aware- ness of</i>	<i>Improve IT infra- struc- ture</i>	<i>Impro- ved data base</i>	<i>Know- ledge Sharing</i>	<i>Recruit- ment</i>	<i>Environ- mental Educa- tion Suitable</i>	<i>Model behav- ior</i>
	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>	<i>Growth</i>
Increase the value of the asset owners and shareholders benefit	Stakeholders	3.2	4.7	6.4	3.2	6.4	6.2	7.3	7.4	6.4
Increase the value of the benefit shareholders	Stakeholders	1.4	4.2	1.4	7.3	4.6	5.4	4.6	3.2	4.7
Business customers quality products	Stakeholders	2.3	4.6	5.4	3.2	3.2	4.7	6.4	3.2	3.2
Customer satisfaction with the quality of services	Stakeholders	4.7	6.4	6.2	7.3	4.3	7.4	4.9	1.9	1.8
Create job opportunities in the community	Stakeholders	7.2	8.4	3.2	1.4	4.2	5.4	2.3	1.2	4.2
Public satisfaction with the quality of products	Stakeholders	1.5	3.6	3.7	3.4	6.5	2.3	8.5	4.3	6.5
Benefiting from innovation, innovations and inventions	The process	3.2	4.7	3.2	6.5	5.6	3.2	2.9	2.8	6.2
Provides a process for consultation by industry experts	The process	6.5	2.3	6.5	2.7	2.3	4.6	5.4	3.2	2.3
In-service training courses	The process	2.3	4.7	8.1	7.8	6.7	4.3	5.2	7.2	6.7

As seen in the table: From the perspective of growth and learning sample three criteria (leadership ability: the ability to mobilize and motivate the organization to access and change management perspective), (awareness and internalization of the mission, vision and fundamental values at all levels of the organization) and (absorption educated work force and efficient) each way, through three methods (create jobs in the community), (in-service training and 'public satisfaction with the quality of products) is achieved.

Table 7
Selected performance metrics to strategic objectives

<i>Perspective</i>	<i>Goals</i>	<i>Methods</i>
Financial	Development of modern equipment and technology tailored to the features of the world	Benefiting from innovation, innovations and inventions
	Increasing the budget for staff training	Increase the value of the asset owners and shareholders benefit
	The allocation of bonuses to employees	Model good behavior and promote a culture of teamwork
Stakeholders	Increase the value of the asset owners	Alignment, motivation and ability to coordinate the objectives of the strategy at all levels of the organization
	Business customers quality products Customer satisfaction with the quality of services	Benefiting from innovation, innovations and inventions Provides a process for consultation by industry experts
Internal process	Benefiting from innovation, innovations and inventions Provides a process for consultation by industry experts	Improve IT infrastructure Flexible and integrated system design database recovery software
	In-service training courses	Sharing knowledge and experience with creating electronic directory of employees
Learning and development	Leadership ability, the ability to mobilize and motivate the prospect to access and change management	Create job opportunities in the community
	And internal awareness of the mission, vision and values fundamental at all levels of the organization	In-service training courses
	Attract educated work force and efficient	Public satisfaction with the quality of products

Table 8
Alignment Balanced Scorecard and the EFQM model using matrix QFD House of Quality

View balanced Scorecard	Strategic Goals	Leadership	Policy and strategy	Employee benefits and participation	processes	Customer results	Employee results	Community benefits	Key Performance Results	Score	Percentage	The overall percentage terms
Financial	Development of modern equipment and technology tailored to the features of the world	9	8	3	8	6	9	3	7	55	8.19	
Financial	Increase staff training budget	7	7	9	7	3	9	3	3	54	8.04	
Financial	The allocation of bonuses to employees	6	6	9	7	2	3	7	6	59	8.79	25.02
Customer	Increase the value of the property	9	8	5	8	3	6	3	8	51	7.60	
Customer	Customer satisfaction from quality products	8	3	2	5	9	5	5	8	54	8.04	
Customer	Customer satisfaction with the quality of service	7	6	3	5	9	5	4	4	46	6.85	22.49
Internal process	Taking advantage of innovations, inventions	9	7	3	5	3	8	3	7	47	7.00	
Internal process	See the process for consultation by industry experts	4	9	4	5	6	9	5	6	56	8.34	

contd. table 8

View balanced Scorecard	Strategic Goals	Leadership	Policy and strategy	Employee benefits and participation	Customer results	Employee results	Community benefits	Key Performance Results	Score	Percentage	The overall percentage terms		
Internal process	In-service training courses	2	6	9	5	3	7	6	8	8	57	8.49	23.83
Learning and development	Leadership capability: the ability to mobilize and motivate the prospect to access and change management	9	9	7	5	6	8	6	9	9	68	10.13	
Learning and Growth	Awareness and internalization of the mission, vision and fundamental values at all levels of the organization	9	8	8	9	7	9	6	8	8	72	10.73	
Learning and Growth	Educated labor force and efficient	5	4	6	5	4	8	7	6	7	52	7.49	28.35
Total Point		84	81	68	75	69	73	87	64	81	671		
Percentage points		12.51	12.07	10.13	11.17	10.28	10.87	11.32	95.3	12.07		100	100

As seen in the table: At this point, based on what was observed previously, the remaining objectives and methodology (score above 8) for use in aligning the pattern shown.

After placing strategic objectives (goals in the perspectives of the balanced scorecard) what criteria in the EFQM model on how the matrix points to the relationship between each of the strategic objectives and criteria of the EFQM model is given. Points scoring mechanism according to methodology proposed by Lee *et al.* (2009) was conducted, so that the greatest possible respect to the relationship between the average score of 9 to 3 and the weak relationship between the 1 and 0 is assigned if no relation score. Table 8 shows the output matrix.

How to interpret the numbers from Table 8 as follows:

- Percentages at the bottom of each column represents a standard of its corresponding column in the cement industry strategy. The matrix also points EFQM model criteria against industry strategy, this model has been compared with standard rates. It is seen largely as the rates are close together, which means overlapping criteria in order to achieve organizational goals.
- In the last column of the concessions made to the terms of the goals of a balanced scorecard which shows the percentage of the total given its importance to the criteria of the EFQM model
- Percent at the end of each row represents a strategic objective of its corresponding row against the criteria of the EFQM model.

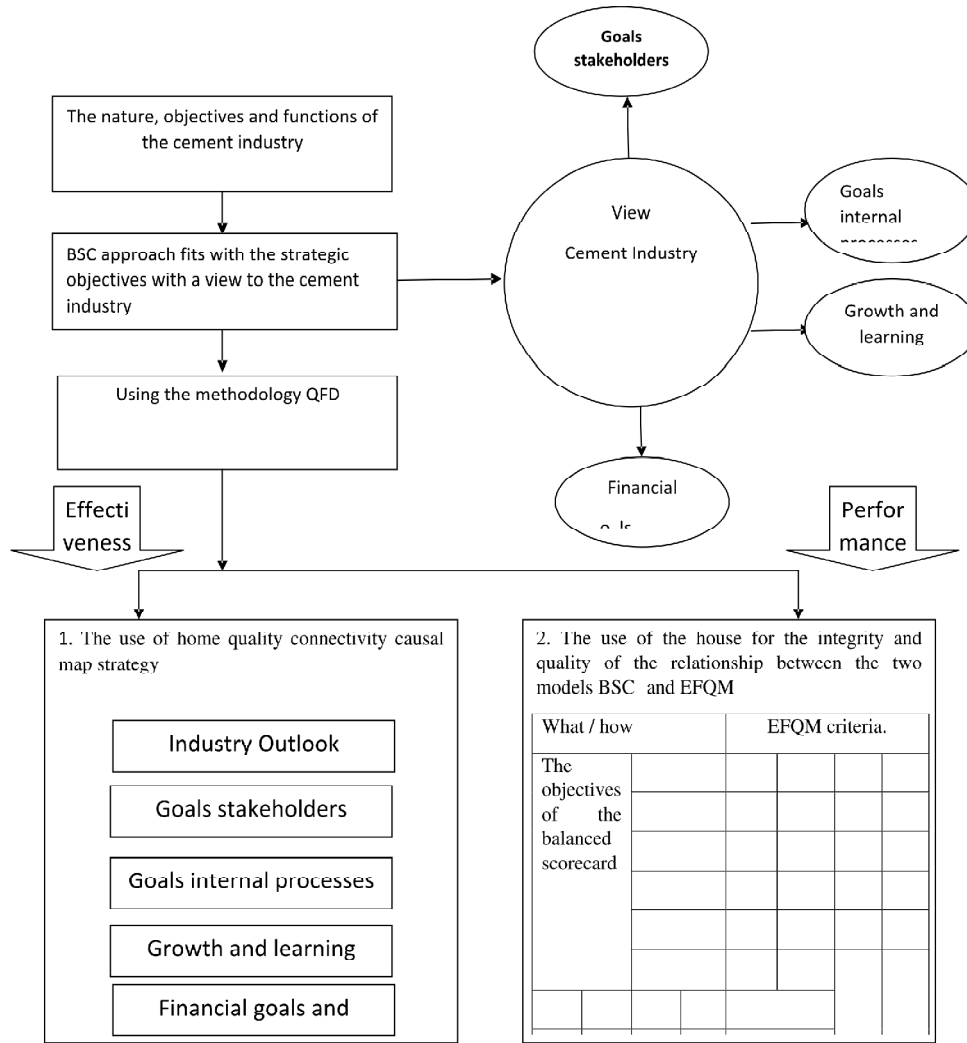
What was said in Figure 2, the operational model is shown.

5. CONCLUSIONS AND RECOMMENDATIONS

As the matrix line of the balanced scorecard and EFQM model using QFD House of Quality matrix is shown, each of the four perspectives of the balanced scorecard criteria EFQM model shows through which we can measure the amount of communication model EFQM against a balanced scorecard perspectives found. Thus, the EFQM criteria can be examined in the context of the balanced scorecard perspectives.

The results of research Ahmadvand *et al.* (2012) in one direction, the results of their research had shown that the Balanced Scorecard and Business Excellence models in combination, can be an appropriate framework for evaluating the performance Both aligning The two models can continuously improve and increase productivity in your organization followed the results of the studies as well as complementary Hijazi *et al.* (2013), which after examining and comparing the strengths and weaknesses of each, From the perspective of organizational excellence and performance measurement, concluded that both models from many of the same concept.

Figure 2: Aligning models using BSC and EFQM model for evaluating the performance



Gracious and colleagues also confirmed the results of this study, the advantages and shortcomings of both models compared with studies And finally have found that a new model of combining these two tools exist not only in conflict but through comprehensive coverage of all aspects of the organization, covering each other's weaknesses, possible further synergies for leadership and organization provides performance evaluation. Since previous studies combining these two models in various ways in various organizations, including the University (Ahmadvand *et al.*, 2012), municipalities (the good man *et al.*,2011), the regional electricity companies (Jafarnejad *et al.*2010) was carried out and conducted research in the cement industry can be inferred that the results are applicable to other types of

organizations, which is now worthy of further studies. In this regard, the following recommendations as follows:

- Targets should be based on consideration of their scores to achieve these goals with the organization's vision of achieving dignity.
- It is also recommended that the obtained relations between the criteria and objectives, and performance-based evaluation sub-criteria to be determined by the achievement of objectives should be determined.

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