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EVALUATION OPERATIONAL UNITS IN IRANIAN TELECOMMUNICATION COMPANY

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ABSTRACT
The present study aimed to evaluating the performance of operating units of Telecommunication Company in Bushehr province in Iran using an integration of Balanced Scorecard and Fuzzy Analytical Hierarchy Process is done. Indicators of performance evaluation of Telecommunication Company collected of the study background and for screening using of the company's experts. This study proposed a compilation approach of BSC-FAHP to improve operational units' performance evaluation of the telecommunications company in Bushehr Province. Research method is Applied-Research. So that examines relative performance of four operational units of Telecommunication Company in Bushehr Province in Iran. These units are mobile subscribers, landline subscribers, optical fiber and internet. The results showed that the unit of mobile subscribers having a relative weight 0.628 most important is in the studied units, and also in next ranks units of landline subscribers, optical fiber unit and internet unit were to weight respectively 0.143, 0.106 and 0.123.

Keywords: Organizational Performance Assessment, Balanced Scorecard, Telecommunication Company

INTRODUCTION
The complexity of business environment, competitive arena and the increase of customer expectations have necessitated the need for continuous improvement of productivity and recognition of organization's weaknesses and strengths more than ever. Having a proper perspective of the future, these organizations need a flexible succinct method in order to learn from their past mistakes.
Affairs and activities can be effectively managed using strategy-based performance evaluation system, and it will also make it possible to measure success level, output and work progress in achieving strategic objectives.
In today's unsteady environment, organizations attempt to gain competitive advantage over their rivals. Customers and sources are two factors leading to competitive advantage. Organizations compete with each other for achieving more customers and source. For gaining success and retaining it, the results of the decisions taken in the competition should be evaluated in one way or another. As we know, organizational performance is not a simple phenomenon at all, but it is a complex and multidimensional concept.
Evaluating or measurement of the organizational performance of different parts of the organization is a very complex process regarding that, by itself, it is a multifaceted phenomenon. There are lots of ways for ranking different units of an organization which the current study uses a combination of Fuzzy Analytic Hierarchy Process (FAHP) and Balanced Scorecard (BSC) for this purpose.
The concept of Balanced Scorecard (BSC) is applied to define a hierarchy with four major perspectives (financial, customer, internal business process, and learning and growth) that performance indices are specified for each perspective. The approach of fuzzy analytic hierarchy process (FAHP) is proposed for removing the uncertainty and in situations where there is a lack of information. In fact, FAHP information system is created for facilitating the problem solving process.
Organizational performance is inherently contradictory; because when a perspective shows a good performance, another perspective may well show the reverse of that performance. Furthermore, people's attitudes and their willingness about various aspects of performance evaluation may be different and they may not agree upon the scales used, the significance level of these indices or the interpretation of the obtained results.

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FAHP increasingly plays an important role in multiple decision-making criteria under uncertainty in an extensive range of areas including supplier's selection, customer needs evaluation, evaluation and ranking of functional units and organizations and FAHB has also found its position.

Iran Telecommunication Company due to its history of prolonged activities in Iran has reached a somehow excellent position in terms of status and prestige. Also despite the presence of other competitors in this industry, it continues to be the first choice of the customers in case of providing equivalent services.

The bankroll of public trust along with potential and enormous demand for basic services and advanced telecommunication industry in Iran draws a clear picture for activities of Iran Telecommunication Company. Factors affecting the company's success can be summarized as follows:

- High reputation in internal market
- High quality services in comparison with internal rivals
- Vast communication network and variety of products (landline, mobile and information technology)

Also well-known global advantages resulting in the prosperity of telecommunication products market include:

- Young and dynamic population and the growing level of education and social science
- Public admission of the provision of new services
- Increasing trend of per capita income and the improvement of wealth distribution process

Given the delicate situation of Telecommunication Company in the country and its high amounts of customers, this study aims at evaluating, ranking and measuring the performance of various sectors of Bushehr Telecommunication Company through a combination of Fuzzy Analytic Hierarchy Process (FAHP) and Balanced Scorecard (BSC).

FAHP method has many applications in various decisions at micro and macro levels. This method is one of the mathematical models for multivariate decisions which combines Analytic Hierarchy Process (AHP) and fuzzy theory to improve results and reliability.

Statement of the Problem

Organizational performance is a very complex and multifaceted phenomenon (Venkatraman and Ramanujam, 1986). Many scientists argue that traditional financial scales are adequate for evaluating the performance of the organizations and providing guidance for strategic action. But financial scales applied to organizations include various scales of profitability (ROA, ROE, ROS, and ROI) that shows only the previous results and speaks a little about future performance.

For this reason, the Balanced Scorecard with more dimensions (financial, customer, internal processes, learning and growth) can play a very important role in evaluating the performance of organizations' operational units. The current study is based on an attempt to solve the worrying problem of evaluating the organizational performance especially 1) Creating a multiple and different sense (often conflicting interaction) among attitudes and actions, 2) Prioritizing among them, 3) Reaching some combinational assessments and 4) Ranking the performance level of the options under comparative assessment.

Therefore, the main issue in this study is to determine how one, using integrated approach of FAHP and BSC can assess and rank the operational units of Bushehr Telecommunication Company to make it possible to implement the comprehensive quality in all units and to achieve continuous improvement in all activities of the company.

So, the aim of the project implementation and the application of its results are as follows:

1- Using the integrated approach of BSC and FAHP and the implementation of this approach in the telecommunication industry.

2- Providing a means for measuring the performance of telecommunication units.

3- Ranking of operational units of Bushehr province's Telecommunication Company.

4- Measuring and determining the performance value of telecommunication units.

5- Comparing the performance of administrative units of Telecommunication Company.

6- Motivating staff through creating a sense of competition among units of Telecommunication Company.

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7- Enhancing the productivity in the employees and Bushehr province's Telecommunication Company.
8- The support of company's top managers of the units, and
9- Enhancing the competitive position of the Telecommunication Company.

Literature

Because of the complexity of the phenomenon of organizational performance, different researchers support applications of different perspectives and multiple scales on organizational performance.

Balanced Scorecard is not only a comprehensive and integrated approach for evaluating performance, but also a management system with a new approach toward strategic management which was introduced in 1990s by Kaplan and Norton. They expanded the concept and performance evaluation framework (Balanced Scorecard) which obviously include various aspects of performance (Kaplan and Norton, 1996).

Balanced Scorecard is a comprehensive tool for performance evaluation which appropriately control and schedule the organization in achieving its goals (Davis and Albright, 2004). Balanced Scorecard breaks traditional financial constraints and evaluates the performance of organization from four perspectives of financial, customer, internal business process, and learning and teaching.

One of the methods that can handle complex issues of a performance evaluation balanced system is fuzzy analytic hierarchy process (FAHP). The analytic hierarchical process reflects the human natural behavior and thought. This technique examines complex issues based on their interaction results and turns them into a simple form while trying to solve them.

FAHP methodology was founded based on the theoretical concept of fuzzy set - which was proposed by Professor Lotfizadeh in 1965. Fuzzy analytic hierarchy process expands «time» AHP through its combination with the fuzzy set theory. In fuzzy AHP, after creating a hierarchical structure for the problem to be solved, relative fuzzy scales are used for illustrating the relative importance of factors corresponding to the criteria.

In this way, a fuzzy judgment matrix is constructed. The ultimate advantages of the options are shown by fuzzy numbers and optimal option regarding fuzzy numbers ranking is obtained through the use of special algebraic operators.

The group analytic hierarchical process (GAHP): it is possible that in a decision-making process, there exist several decision makers instead of a decision maker which the attitudes of all of them should be considered in the comparison matrix. In these cases, the geometric mean of the comparison matrix elements can be used for group decision-making; that is

Equation(1): $(\prod_{i=1}^{k} a'_{ij})^{\frac{1}{k}}, a_{ij} = k, \ldots, i = 1$

Where k is the number of decision makers. If it is needed that each decision maker with regard to his expertise and position have more impact on the votes, a weight (w) can be assigned to his opinion which is calculated by the following equation:

Equation(2): $a_{ij}' = (\prod_{i=1}^{k} (a'_{ij})^{w_i})^{\frac{1}{\Sigma_i w_i}}, i = 1, \ldots, k$

It is better to include the opinions of decision makers into group calculations when the attitude inconsistency rate of each decision maker is less than 1.0 (Yahyazadeh and Khademi,2005). However, to solve the decision making problems through AHP, the problem and its details should be carefully defined and determined and its details should be drawn in a hierarchical structure.

In 2012, Yan and Chung developed an evaluation model by implementing a modern planning process to achieve an integrated approach for evaluating and planning in the best possible way. The results of this approach will help organizations to implement the best practice and to manage their individual business units with regard to their special strategic or operational needs.

Huang *et al.,* (2011) believe that strategic planning is really necessary for business activities and in 2011, in an article using analytic hierarchical process prioritized all actions and strategies in the framework of the Balanced Scorecard. The results of this study provided a rational and reliable solution for individual business units to prioritize and implement the strategies.

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The integration of the analytic hierarchical process with the Balanced Scorecard can prioritize the competitive information with the use of the integrated hierarchical stages through a reliable, systematic, comprehensive and accurate method. In 2011, Yan *et al.,* presented a systematic and operational method for ranking customer needs and competitive utilization as well, for prioritizing information and for short- and long-term estimating of organization's output based on the integration of hierarchical analysis process and Balanced Scorecard.

Performance evaluation is an assessment model for comparing previous projects, implementing the strategy and operational activities and also stabilizing the goals of the organization regarding the executive ability, employee participation and competition rate. Moreover, the performance evaluation model helps the organization implement long-term strategies and regulate employees' performance objectives in order for achieving the ultimate goals of the organization and, in fact, "performance assessment is for achieving the whole objectives of the organization".

In a study, Farokhi *et al.,* have made use of Balanced Scorecard (BSC) and fuzzy analytic hierarchical process for measuring organizational performance. In this research, the company's performance has been examined in four perspectives of the balanced scorecard process and was processed using fuzzy analytic hierarchical process. In each of the dimensions of the Balanced Scorecard, a series of indices are defined and they were studied using experts.

In some research, there has been emphasis on the application of the analytic hierarchical process (AHP) and the analytic network process (ANP) as methods of multi-criteria decision making (MCDM) in the implementation of the Balanced Scorecard.

For example in 2008, Jvanovych *et al.,* have emphasized this issue. Balanced Scorecard as a matrix of balanced indices examines organization activities using four (or more) perspectives (finance, users or customers, business processes, learning and development) which making use of it will create necessary conditions for the development and continuous improvement. As the Balanced Scorecard is basically defined as a framework for the realization of the strategy in the organization, it is utilized for the selection of appropriate actions.

Sharma and Bhagwat (2007) in an article entitled as "integrated BSC-AHP approach" which was about evaluating supply chain management used the combination of these two categories for evaluating supply chain. In 2008, Lee *et al.,* suggested an approach based on FAHP and BSC for evaluating the performance of IT industry in Taiwan. They found that for facilitating problem solving process because the decision making process of humans often contains some degree of ambiguity, fuzzy AHP is an appropriate choice for solving this problem.

MATERIALS AND METHODS
Methodology
The current study is an applied and investigational research that examines the relative performance of four operational units of Telecommunication Company of the province of Bushehr: Mobile subscribers unit, landline subscribers unit, and optical fiber and internet units. Telecommunication Company's managers in the province of Bushehr consider these units as the most strategic areas of the financial sector and the most effective units in the company's performance. The current study aims at presenting a model for evaluating and ranking the operational units of Bushehr Telecommunication Company through assigning values to the indices of performance evaluation using Balanced Scorecard approach so that there will be a better performance evaluation as a result.

In this regard, first, according to the research conceptual model (Figure 1), a list of the indices of performance evaluation with BSC approach and four perspectives of customer, financial, internal processes and learning and growth were prepared based on the research literature (Table 1) and overall, 16 indices were taken into consideration. It should be noted that among the indices considered in the research literature, those indices were used which have been confirmed by experts of Bushehr province's Telecommunication company, were aligned with the organization's strategic plan and formulated according to the objectives of this organization.

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Collecting the related literature in the theoretical framework has been in the library form and collecting the data related to paired comparisons and assigning value to the indices has been in the field form done through designing and distributing an AHP questionnaire among decision making experts.

Given that in this research FAHP have been used for analyzing data and determining value (weight) of the indices, therefore, confidence and reliability of this standard questionnaire is measured through the adaptation rate, that is, if its inconsistency rate is more than 1.0, the questionnaire will be modified and re-distributed to the point that the consistency rate of all paired comparisons would be lower than 1.0. Therefore, since the consistency rate in this study is considered 1.0, then it can be said that the used questionnaire includes the necessary validity (Tabrizipour *et al.,* 2011).

Table 1: Used indicators in questionnaires with their sources

Source	Indicator	Indicator	Vision BSC
(Bentes *et al.,* 2012), (Lee *et al.,* 2008), (Niazazari *et al.,* 2008) 22]	Return on Investment	C11	
(Daneshfard, *et al.,* 2010)	Operation cycle	C12	financial C1
(Bentes *et al.,* 2012)	Reduce operating costs	C13	
(Niazazari *et al.,* 2008)	Effective use of financial resources	C14	
(Daneshfard *et al.,* 2010)	The use of new technologies	C21	
(Niazazari *et al.,* 2008)	Timely completion of providing service process	C22	Internal processes C2
Bentes *et al.,* (2012)	The number of implemented projects per year	C23	
(Wu *et al.,* 2009)	Transactions efficiency	C24	
(Niazazari *et al.,* 2008)	Customer satisfaction of providing timely service	C31	
(Jafarnejad, *et al.,* 2010), (Daneshfard *et al.,* 2010)	Customer satisfaction of service quality	C32	customer C3
(Niazazari *et al.,* 2008)	Reduce and deal with Complaints	C33	
(Jafarnejad, *et al.,* 2010), (Yüksel and Dagdeviren, (2010)	Attract new customers	C34	
(Yüksel and Dagdeviren, (2010)	knowledge sharing	C41	
(Bentes *et al.,* 2012), (Yüksel and Dagdeviren, (2010)	Training and skills development activities	C42	Learning and growth C4
(Wu *et al.,* 2009), (Jafarnejad, *et al.,* 2010)	employees satisfaction level	C43	
(Daneshfard *et al.,* 2010)	Staff stability	C44	

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In the operational phase, all sectors and operational units of the company were identified and using a questionnaire the necessary information is collected for evaluating and ranking the units through the process of fuzzy analytic hierarchical and Balanced Scorecard. Finally, using the collected information, the operational units in Telecommunication Company of Bushehr province are ranked. In this study, the questionnaire and interview have been used.

Data Collection Procedure

- Library research including the study of Iranian and foreign books and magazines, search in databases (Internet) for achieving theoretical principles and using the experience of other researchers;
- Using the questionnaire as the primary means of data collection for obtaining the needed data.
- Interview

The research population comprises managers and experts of Telecommunication Company of Bushehr province.

In this study, first, the operational units were examined by using indices and sub-indices of the Balanced Scorecard approach, then through the fuzzy analytic hierarchical process (FAHP) their performance have been evaluated and organization's operational units have been ranked.

Data Analysis

One of the most important findings of the present study is achieving a hierarchical structure as depicted in Figure1. In this structure main indices are shown by C_i and subsidiary indices are presented by C_{ij}. The questionnaire on fuzzy analytic hierarchy process was distributed among seven experts of the Telecommunication Company, and then paired comparison matrix was calculated for each one. Credibility and validity of experts' attitudes were calculated through measuring inconsistency rate of paired comparison matrixes for each decision maker which all rates were smaller than 0.1.

After forming fuzzy paired comparisons matrix for main and subsidiary parameters, all of their values (weights) were calculated according to the decision-making hierarchical tree (Figure 1) using the FAHP technique.
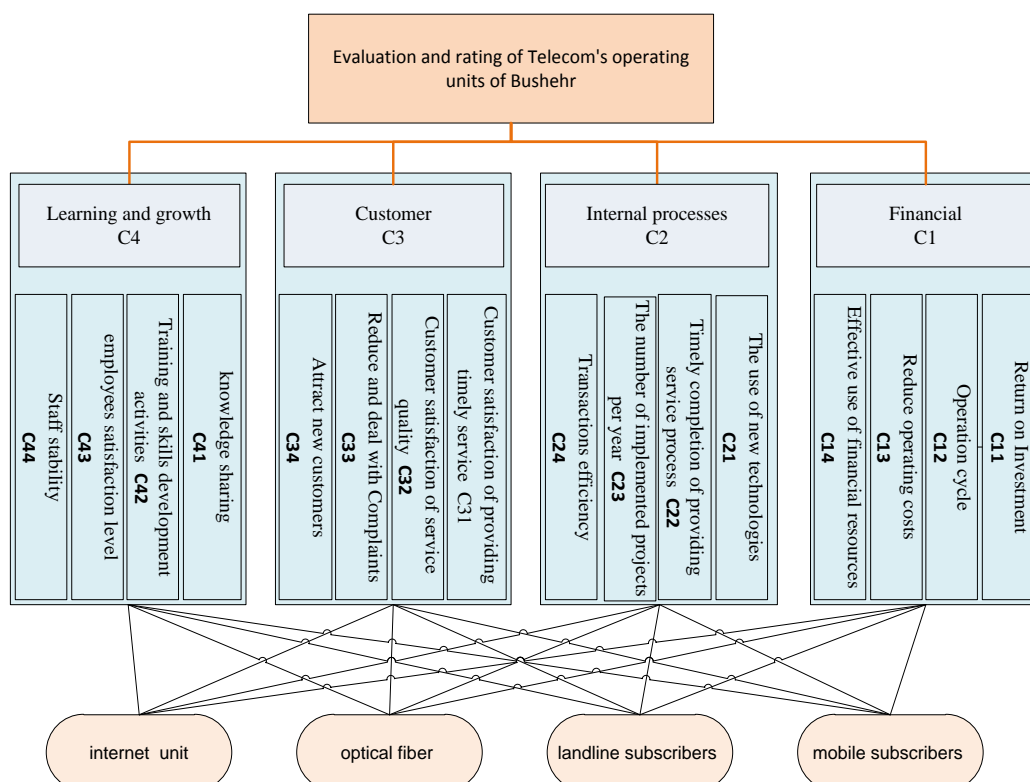

Figure 1: Hierarchical Tree of Balanced Scorecard Performance Evaluation Indicator

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It should be noted that the advantages of the paired comparisons will turn into the linguistic variables which are represented by tri-faceted positive fuzzy numbers. In this paper, Chang's membership function of linguistic variables has been used for creating positive fuzzy matrixes, as presented in Table 2 (Chang, 1992).

According to this (FAHP), first the combined values were calculated then in order to calculate the indicators weight, the fuzzy values were calculated and large degree of one relative to the other, and total Large degree were calculate.

Table 2: Linguistic variables in paired comparisons of FAHP method

Preferred column to row		Preferred row to column	
Numeric Value	**Linguistic representation**	**Numeric value**	**Linguistic Representation**
(1,1, 1)	Equally important	(1,1, 1)	Equally important
(0.37,0.5, 0.75)	Equal to slightly more	(1.33,2, 2.67)	Equal to slightly more
(0.27,0.33, 0.43)	Relatively more important	(2.33,3, 3.67)	Relatively more important
(0.21,0.25, 0.30)	Moderately to very important	(3.33,4, 4.67)	Moderately to very important
(0.18,0.20, 0.23)	Very More important	(4.33,5, 5.67)	Very More important

This vector represents the final weight of the main indicators of the balanced scorecard. Finally, after normalizing the weights (W´), Weight vector W obtained for the main indicators.

Table 3: The weighted values of the four perspectives of the balanced scorecard

	C1		C2	C3	C4	W	W
C1	-		$V(SC_1 \geq SC_2)= 1$	$V(SC_1 \geq SC_3) = 1$	$V(SC_1 \geq SC_4)= 1$	1	0.570
C2	$V(SC_2 \geq SC_1)= 0.194$		-	$V(SC_2 \geq SC_3)= 0.134$	$V(SC_2 \geq SC_4)= 0.609$	0.134	0.077
C3	$V(SC_3 \geq SC_1)= 0.515$	$V(SC_3 \geq SC_2)= 1$		-	$V(SC_3 \geq SC_4)= 1$	0.515	0.293
C4	$V(SC_4 \geq SC_1)= 0.105$	$V(SC_4 \geq SC_2)= 1$	$V(SC_4 \geq SC_3)= 0.569$		-	0.105	0.060

As shown in Table the coefficient of the financial perspective (C1) is the highest coefficient and is 57%, Coefficient of internal processes perspective (C2) is 7.7%, coefficient of the customer's perspective (C3) is 29.3 percent, and coefficient of growth and learning perspective is 6%. Similarly, the weights of all sub-indices were obtained.

According to the obtained relative weights, Indicator "Customer satisfaction with the quality of services" with a weight of 48%, has the most importance From the customer perspective and "new customer acquisition" with a weight of 8%, has minimum weight of importance. The other perspectives are prioritized as follows: In the financial perspective, the indicator "return on investment" and the indicator" reduce operating costs", with 74% and 1% are the most and least important. In the perspective of internal processes, the indicators "transaction efficiency" and "number of projects implemented in the year" With 41% and 1% respectively, have most and least important. Also in the learning and growth perspective indicator" training and skill development activities," with 39% and the indicator" Employee stability" (7%) have the least important. Other final results and finding of the weights of the sub-components of each criterion listed in Tables 4 to 8.

As can be seen, according to the results of the application of fuzzy AHP, weights obtained for aspects of Balanced Scorecard According to experts of Telecom Bushehr in order of importance is as follows:

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Financial perspective with a weight of 57%, customer perspective with a weight of 29.3%, internal processes perspective with a weight of 7.7%, and learning and growth perspectives with a weight of 6%.

Analysis of Findings

Table 4 shows the weights of the four units of the Bushehr Telecom in the financial perspective Index, Namely the landline subscribers unit, mobile subscribers unit, optical fiber and internet units.

Financial perspective has four sub-criteria, include the return on investment, operation cycle, reducing operating costs, efficient use of financial resources that the weight of each of sub-criteria shown According to the table of paired comparisons.

As can be seen, in the financial perspective, Unit of landline subscribers, unit of mobile subscriber, optical fiber unit and internet unit, respectively have 0.13, 0.63, 0.11and0.13 weight that mobile Subscribers and optical fiber unit respectively have the highest and lowest weight.

Table 4: Operating units Weights of Bushehr telecom in financial perspective

The final weight	Sub-criteria of the financial perspective				Telecom's operating units of Bushehr
	Effective use of financial resources	Reduce operating costs	Operation cycle	Return on Investment	
	Weights of operating units in the financial perspective				
	0.123	0.005	0.129	0.743	
0.130	0.035	0.243	0.139	0.144	Landline subscribers unit
0.628	0.602	0.215	0.643	0.632	mobile subscribers unit
0.111	0.267	0.375	0.113	0.083	optical fiber unit
0.131	0.096	0.167	0.105	0.141	internet unit

Table 5 shows the weights of four units including landline subscribers unit, mobile subscribers unit, optical fiber and internet units in terms of internal processes perspective. The internal processes perspective comprises four sub criteria: using new technologies, timely completion of service provision processes, the number of projects implemented in one year and transactions efficiency. Regarding the internal processes, the obtained weights show that mobile subscribers unit with a weight of 0.602 has the highest degree of importance. Also the optical fiber unit, landline subscribers unit and internet unit are assigned to lower ranks according to their weights of 0.265, 0.102 and 0.031, respectively.

Table 5: Operating units Weights of Bushehr telecom in Internal processes perspective

The final weight	Sub-criteria of the Internal processes perspective				Telecom's operating units of Bushehr
	transactions efficiency	the number of projects implemented in one year	timely completion of service provision processes	using new technologies	
	Weights of operating units in the Internal processes perspective				
	0.410	0.008	0.276	0.306	
0.102	0.153	0.217	0.041	0.084	Landline subscribers unit
0.602	0.703	0.399	0.638	0.442	mobile subscribers unit
0.265	0.143	0.235	0.236	0.453	optical fiber unit
0.031	0.001	0.149	0.085	0.021	internet unit

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Customer perspective comprises four sub criteria including customer's satisfaction of timely service provision and of service quality, checking customer complaints and reducing them and attracting new customers, each having weights of 0.281, 0.480, 0.158 and 0.081, respectively. In general, from the customer perspective the amount of degree of importance of four units of landline and mobile customer affairs, optical fiber and Internet are 0.148, 0.691, 0.075 and 0.086, respectively. Thus, according to table 6, the mobile subscribers unit has the highest degree of importance from the perspective of the customer which means that this unit meets the customer perspective's sub-components more than any other operational units.

Table 6: Operating units Weights of Bushehr telecom in customer perspective

The final weight	**Sub-criteria of the customer perspective**				Telecom's operating units of Bushehr
	attracting new customers	checking customer complaints and reducing them	customer's satisfaction of service quality	customer's satisfaction of timely service provision	
	Weights of operating units in the customer perspective				
	0.081	**0.158**	**0.480**	**0.281**	
0.148	0.007	0.247	0.138	0.150	Landline subscribers unit
0.691	0.707	0.592	0.639	0.831	mobile subscribers unit
0.075	0.270	0.064	0.079	0.018	optical fiber unit
0.086	0.016	0.097	0.144	0.001	internet unit

Table 7 shows the weight of sub criteria including sharing the knowledge, skill and training developmental activities, staff stability and employees satisfaction value in learning and growth criterion. Furthermore, the final weight of four units of landline, mobile, optical fiber and Internet in learning and growth criterion have been shown. In this criteria too, mobile subscribers unit with a weight of 0.357 has the highest degree of importance. Optical fiber unit, landline subscribers unit and Internet unit are assigned to lower ranks according to their weights of 0.293, 0.289 and 0.061, respectively.

Table 7: Operating units Weights of Bushehr telecom in Learning and growth perspective

The final weight	**Sub-criteria of the Learning and growth perspective**				Telecom's operating units of Bushehr
	employees satisfaction value	staff stability	skill and training developmental activities	sharing the knowledge	
	Weights of operating units in the Learning and growth perspective				
	0.381	**0.066**	**0.395**	**0.158**	
0.289	0.028	0.521	0.424	0.486	Landline subscribers unit
0.357	0.628	0.223	0.225	0.091	mobile subscribers unit
0.293	0.326	0.223	0.333	0.139	optical fiber unit
0.061	0.018	0.033	0.018	0.284	internet unit

The final table shows the weight of the operating units of Bushehr Province Telecom Company from the perspective of company's experts using the Balanced Scorecard indicators. As presented in the table, among the four dimensions of the Balanced Scorecard, financial index with a weight of 0.570 has the

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highest importance and learning and growth index with a weight of 0.060 has the lowest importance. Customer index with a weight of 0.293 and internal processes with a weight of .077 are respectively ranked lower than the financial index.

Also, conclusions and results of the prioritization of the operational units of Bushehr Province Telecom Company are shown in Table 8 according to the perspectives of the company's experts and specialist using Fuzzy AHP. The units are prioritized in the following order:

1- Landline subscribers unit by weight 0.628
2- Mobile subscribers unit by weight 0.143
3- Optical fiber unit by weight 0.123
4- Internet unit 0.106

Table 8: Operating units Weights of Bushehr telecom in Balanced Scorecard perspectives

The final weight	Balanced Scorecard perspectives				Telecom's operating units of Bushehr
	Learning and growth	customer	Internal processes		
	Operating units Weights of Bushehr telecom in Balanced Scorecard perspectives				
	0.060	0.293	0.077	0.570	
0.143	0.289	0.148	0.102	0.130	Landline subscribers unit
0.628	0.357	0.691	0.602	0.628	mobile subscribers unit
0.123	0.293	0.075	0.265	0.111	optical fiber unit
0.106	0.061	0.086	0.031	0.131	internet unit

RESULTS AND DISCUSSION
Results
This study integrates two tools, BSC and FAHP, to provide a better assessment of the performance of four organizational units within a Iranian telecommunications company, Bushehr Province telecommunications company. While BSC explicitly incorporates several perspectives (besides the usual-financial viewpoint) to organizational performance evaluation, FAHP handles multiple perspectives and measures (sub-criteria) with distinct degrees of importance, and turns the overall result into a unified metric.

FAHP prevents managers from having the pitfalls of using a simple, ad hoc weighting approach, and helps them make sense of the multiplicity of performance measures by using a balance scorecard. The results showed that the unit of mobile subscribers having a relative weight 0.628 most important is in the studied units, and Also in next ranks units of landline subscribers, optical fiber unit and internet unit were to weight respectively 0.143, 0.106 and 0.123.

This study showed that the dimension of financial perspective is more important than other aspects of the Balanced Scorecard in Telecom Bushehr.

REFERENCES
Bentes A, Carneiro J, da Silva J and Kimura H (2012). Multidimensional assessment of organizational performance: Integrating BSC and AHP. *Journal of Business Research* **65** 1790–1799.

Chang D (1992). *Extent Analysis and Synthetic Decision, Optimization Techniques and Applications* (Singapore: WorldScientific) **1**.

Daneshfard K, Vojdani K and Aghaz A (2010). Investigation of the effect of the balanced scorecard in improvement of organization performance. *Educational Managemant Journal* (2) 55-72.

Davis S and Albright T (2004). An investigation of the effect of the balanced scorecard implementation on financial performance. *Management Accounting Research* **15**(2) 135-153.

Huang HC, Lai MC and Lin LH (2011). Developing strategic measurement and improvement for the biopharmaceutical firm: Using the BSC hierarchy. *Expert Systems with Applications* 4875–4881.

Research Article

Jafarnejad A, Shaverdi M and Akbari M (2010). Utilization of fuzzy AHP, VIKOR and TOPSIS methods to evaluation performance of Iran private banks by balanced scorecard approach. *Modiriat Farda, Investigational Scientific Journal* **9**(24).

Kaplan R and Norton D (1996). *The Balanced Scorecard: Translating Strategy Into Action* (Boston: Harvard Business Press).

Lee A, Chen W-C and Chang C-J (2008). A fuzzy AHP and BSC approach for evaluating performance of IT department in the manufacturing industry in Taiwan. *Expert Systems with Applications* 96–107.

Niazazari K, Salehi M and Khalili S (2008). Investigation of the effect of the balanced scorecard in organization performance(BSC) in social security of Mazandaran province. *Industrial Managemant Journal of Humanities Faculty of Azad University of Sanandaj.*

Sharma M and Bhagwat R (2007). An integrated BSC-AHP approach for supply chain management evaluation. *Measuring Business Excellence* **11**(3) 57–68.

Tabrizipour A, Fazli S and Alvandi M (2011). Utilization of FAHP-BSC approach combines to performance evaluation of Hasheminejad hospital of Tehran. *Health Information Managemant* **3**(9) 327-338.

Venkatraman N and Ramanujam V (1986). Measurement of business performance in strategy research: a comparison of approaches. *Academy of Management Review* 801–14.

Wu HY, Tzeng GH and Chen YH (2009). A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. *Expert Systems with Applications* **36** 10135–10147.

Yahyazadeh M and Khademi M (2005). *Scrutiny of Effective Factors in Affiliates Decisioans in Iran Bourse* Tehran.

Yüksel I and Dagdeviren M (2010). Using the fuzzy analytic network process (ANP) for Balanced Scorecard (BSC): A case study for a manufacturing firm. *Expert Systems with Applications* **37** 1270–1278.