Qualitative and quantitative assessment of selected Melli bank branches in northern Tehran by using data envelopment analysis based on the balanced scored card in Iran

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Abstract: In today's competitive world, many manufacturing and service companies have been forced to take up new approaches to management. Among these approaches, we can point to one of the new methods of performance evaluation called data envelopment analysis technique that has an important role in improving the performance of an organization. Among challenges of this technique is to select appropriate indicators in order to introduce input and output variables for DEA, therefore the approach of balanced scored card (BSC) is used to mitigate this challenge that as a new tool for performance evaluation allows the research variables to be explained in order to be employed in DEA technique based on a holistic vision and various organizational aspects (financial, internal processes, customer, growth and learning). In this study, we tried to measure the efficiency of 48 top and grade-one branches of Tehran-North in the 2013 timeframe, not only the financially, but also the aspects of financial, customer, internal process and learning and growth; by combining the DEA-BSC technique and with the model of "yield super-efficiency in constant scale of DEA enveloping input-oriented form" that is capable to announce the efficiency ranking for units and to rank the efficient units simultaneously. The results showed that average efficiency rate from four perspectives: financial, customer, internal process and learning and growth of BSC model is 0.68, 0.63, 0.44, 0.65, respectively, and in total, the average efficiency of branches is 0.6 in this year and it indicates that the most major alignment with macro- strategies of branches is in the financial perspective. Also, Anahita branch was introduced as the most efficient unit from each four perspectives of the BSC model in compared to the other branches.

Keywords: Efficiency Evaluation, Data Envelopment Analysis, Balanced Scored card, Composition of DEA-BSC, DEA Super Efficient Models.

I. Introduction

In a world where modern technology is growing every day through computer and telecommunications and creates an intense competition context for organizations, performance evaluation and modeling has become as a tool for continuous improvement for commercial units. Performance evaluation system has undergone significant changes in compared to the past. The results of measurements is true, if the action of comparison to be conducted for similar with similar and yesterday with today. Different methods have been developed for measuring and evaluating performance, that the managers of organizations take advantage of certain models according to the purpose of the assessment and the type of organization or design the required model with the combination of several models. One of the performance evaluation methods is Data Envelopment Analysis. The approach of data envelopment analysis with a focus on balanced scored card is considered as a new method of performance evaluation, in fact the approach of balanced scored card allows the research inputs and outputs selection to be explained in order to be employed in DEA technique based on a holistic vision and various organizational aspects (financial, internal processes, customer, growth and learning). Therefore in this study, we tried to measure the efficiency of top and grade-one Melli bank branches in northern Tehran with combination of DEA and BSC models.

II. Problem Statement

Today, due to intense competition, speed, volume of information and the challenges facing organizations, it is more than ever essential to have performance evaluation models in order to determine the position of organization and also to develop the strategic planning based on the strengths and weaknesses of the organization. Generally, the performance evaluation can be defined as a system by which a company can monitor the daily operations and assess the fulfillment of its goals. The issue of performance evaluation of banks' branches is also a challengeable decision-making which is always facing decision-makers and managers. This issue needs multi-criteria decisions associated with the overall objectives and mission of banks, strategic potentials and probability of technical and commercial success. Therefore this study has measured the efficiency

of top and grade-one Melli bank branches in northern Tehran in 2013 with combination of DEA and BSC models.

Given the above, the main research questions are as follows:

- Does the combination of two models of DEA and BSC provide appropriate tools for performance evaluation of banks?
- Do the top and grade-one branches of Tehran-North work efficiently?

Research objectives:

Given that the importance of companies' performance evaluation and that nowadays one of the most important issues in companies' finance is the measure of their performance and to what extent the companies have attempted to increase the interests of their shareholders, and what indicators are being considered by banks and credit institutions in granting facilities to companies,

So, the scientific objectives are the study will be:

- To provide a comprehensive and hybrid model by the tools of "balanced scored card" and " Data Envelopment Analysis" to evaluate the top and grade-one Melli bank branches in northern Tehran
- To evaluate the top and grade-one Melli bank branches in northern Tehran by super efficient models of " Data Envelopment Analysis"

And applied objectives of the research will be:

- To provide an improved method to prioritize banks
- To demonstrate the importance of the banks' efficiency for development of capital markets, and country's economic.
- To determine the branches of reference Mellil Bank as a pattern unit
- To show the importance of modeling for top and grade-one inefficient Melli bank branches in northern Tehran, from efficient branches in order to speed up the improvement process of these units, reduction in costs, and more profitably
- To create a context for planning and targeting the branches' managers, in order to use available resources optimally, identify balanced score, according to the efficiency score estimated by DEA technique

Research Questions:

This study is to answer the following questions:

Main Question:

- Does the combination of two models of DEA and BSC provide appropriate tools for performance evaluation of banks?
- Do the top and grade-one branches of Tehran-North work efficiently?

Sub-questions:

- Can appropriate indicators be offered by model BSC to evaluate the performance of DEA technique for top and grade-one Melli bank branches in northern Tehran?
- What extent is the efficiency score of investigated units?
- What are the pattern units?

Collection and analysis of data / information

In this study, library and field methods are used to collect data in a way that at first, library approach is used for data collection for the research literature and finally, information about the variables was collected from the balance sheet, profit and loss account, recommendation system database, office of human capital and employees' personnel files of top and grade-one Melli bank branches in northern Tehran, existing databases of the Melli Bank, in order to collect data related to the input and output variables taken from four perspectives of model BSC, by the researcher. "The enveloping form of the model of super-efficiency under return in constant scale of input nature" related to DEA is used for data analysis in the general case and is analyzed by GAMS software.

Analyzing the results of BSC model in financial perspective

• Branch of Khwaja Abdullah Ansari:

According to the data collected in the third chapter, the general form of the model of Enveloping Input-Oriented Super-Efficient in order to obtain technical efficiency score of mentioned branch in financial perspective will be as follows:

It should be explained that the value of s was used for zero due to avoid error in computing in GAMS software. min $Z_0 = \theta$

$$\begin{split} st \\ \lambda_1 & 0.12 + \lambda_2 \, 0.2 + \lambda_3 \, 0.7 + \lambda_4 \, 0.22 + \lambda_5 \, 0.3 + \dots + \lambda_{48} \, 0.2 \leq \theta 0.43 \\ \lambda_1 & 0.65 + \lambda_2 \, 0.85 + \lambda_3 \, 0.15 + \lambda_4 \, 0.32 + \lambda_5 \, 0.03 + \dots + \lambda_{48} \, 0.42 \leq \theta 0.1 \\ \lambda_1 & 0.33 + \lambda_2 \, 0.12 + \lambda_3 \, 0.24 + \lambda_4 \, 0.23 + \lambda_5 \, 0.02 + \dots + \lambda_{48} \, 0.56 \leq \theta 0.65 \\ \lambda_1 & 0.54 + \lambda_2 \, 0.03 + \lambda_3 \, 0.02 + \lambda_4 \, 0.09 + \lambda_5 \, 0.06 + \dots + \lambda_{48} \, 0.002 \geq 0.02 \\ \lambda_1 & 0.8 + \lambda_2 \, 0.75 + \lambda_3 \, 0.55 + \lambda_4 \, 0.45 + \lambda_5 \, 0.24 + \dots + \lambda_{48} \, 0.002 \geq 0.23 \\ \lambda_1 & 0.7 + \lambda_2 \, 1 + \lambda_3 \, 0.3 + \lambda_4 \, 0.45 + \lambda_5 \, 0.23 + \dots + \lambda_{48} \, 0.25 \geq 0.2 \\ \lambda_1 &\geq 0, \\ \lambda_2 &\geq 0, \\ \lambda_3 &\geq 0, \\ \cdot & \cdot \\ \lambda_{48} &\geq 0, \end{split}$$

Above model is capable to calculate the efficiency score and determine the model units for the branch of Khajeh Abdollah Ansari in financial perspective.

The second phase of above model in order to calculate the surplus and shortage amounts for the branch is as follows.

$$\begin{aligned} \max w &= s_1^- + s_2^- + s_3^- + s_1^+ + s_2^+ + s_3^+ \\ st \\ \lambda_1 &0.12 + \lambda_2 &0.2 + \lambda_3 &0.7 + \lambda_4 &0.22 + \lambda_5 &0.3 + \dots + \lambda_{48} &0.2 + s_1^- = \theta &0.43 \\ \lambda_1 &0.65 + \lambda_2 &0.85 + \lambda_3 &0.15 + \lambda_4 &0.32 + \lambda_5 &0.03 + \dots + \lambda_{48} &0.42 + s_2^- = \theta &0.1 \\ \lambda_1 &0.33 + \lambda_2 &0.12 + \lambda_3 &0.24 + \lambda_4 &0.23 + \lambda_5 &0.02 + \dots + \lambda_{48} &0.56 + s_3^- = \theta &0.65 \\ \lambda_1 &0.54 + \lambda_2 &0.03 + \lambda_3 &0.02 + \lambda_4 &0.09 + \lambda_5 &0.06 + \dots + \lambda_{48} &0.002 - s_1^+ = 0.02 \\ \lambda_1 &0.8 + \lambda_2 &0.75 + \lambda_3 &0.55 + \lambda_4 &0.45 + \lambda_5 &0.2 + \dots + \lambda_{48} &0.002 - s_2^+ = 0.23 \\ \lambda_1 &0.7 + \lambda_2 &1 + \lambda_3 &0.3 + \lambda_4 &0.45 + \lambda_5 &0.23 + \dots + \lambda_{48} &0.25 - s_3^+ = 0.2 \\ \lambda_1 &\geq 0, \\ \lambda_2 &\geq 0, \\ \lambda_3 &\geq 0, \end{aligned}$$

 $\lambda_{48} \geq 0$,

The result of the above model will calculated the surplus and shortage amounts during the providing services for the branch of Khwaja Abdullah Ansari.

The overall output of software GAMS for the model of "enveloping input-oriented super-efficiency under return in constant scale" with financial perspective data for 48 units is as follows:

Table 1 the total output of the software GAMS for 48 branches, financial perspective

Qualitative and quantitative assessment of selected Melli bank branches in northern Tehran by using

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DMU3 0.61	0.10	0.00	0.00	0.05	0.00	0.00	0.08	DMU1	0.48	DMU5	0.5	7 DMU24	
DMU4 0.84	0.00	0.00	0.10	0.00	0.00	0.00	0.30	DMU1	0.06	DMU5	0.0	4 DMU6	
DMU5 1.21	0.00	0.00	0.00	0.24	0.43	0.00	DMU5						
DMU6 9.23	3.43	0.00	0.00	0.00	0.79	0.45	DMU6						
DMU7 1.40	0.00	0.00	0.00	0.00	0.31	0.27	DMU1						
DMU8 0.53	0.00	0.00	0.11	0.00	0.04	0.00	0.08	DMU6	0.58	DMU10	0.0	5 DMU17	
DMU9 0.42	0.05	0.00	0.00	0.00	0.28	0.00	0.01	DMU6	0.38	DMU10	0.4	2 DMU24	
DMU102.69	0.00	0.00	0.00	0.00	0.00	0.00	DMU10						
DMU110.46	0.06	0.00	0.00	0.00	0.00	0.00	0.09	DMU1	0.15	DMU24	0.12	DMU35	
DMU120.77	0.00	0.00	0.01	0.17	0.00	0.04	0.39	DMU1	0.22	DMU10			
DMU130.71	0.00	0.00	0.15	0.29	0.15	0.00	0.55	DMU1	0.06	DMU10			
DMU140.52	0.15	0.00	0.00	0.07	0.00	0.00	0.02	DMU1	1.00	DMU5	0.25	DMU24	
DMU150.78	0.00	0.00	0.00	0.00	0.10	0.00	0.06	DMU1	0.05	DMU2	0.02	DMU6	
DMU160.75	0.00	0.00	0.00	0.02	0.00	0.00	0.08	DMU1	0.07	DMU5	0.65	DMU10	
DMU171.47	0.36	0.00	0.41	0.00	0.00	0.00	DMU17						
DMU180.47	0.00	0.00	0.00	0.01	0.00	0.00	0.03	DMU1	0.07	DMU5	0.47	DMU10	
DMU190.60	0.00	0.00	0.00	0.01	0.00	0.00	0.41	DMU1	0.03	DMUS	0.05	DMU10	
DMU200.52	0.00	0.00	0.00	0.10	0.00	0.00	0.20	DMU1	0.07	DM02	0.19	DMU10	
DMU210.65	0.00	0.00	0.00	0.12	0.00	0.00	0.41	DMU1	0.09	DMU2	0.33	DMU10	
DMU220.83	0.00	0.00	0.41	0.00	0.00	0.00	0.04	DMU6	0.23	DMUIU	0.15	DMU17	
DMU230.80	0.10	0.00	0.00	0.00	0.00	0.00	0.08	DMU1	0.24	DMUS	0.06	DMU6	
DMU244.54	0.55	0.00	0.00	0.14	0.00	0.62	0.42	DMUS	0.00	DMUID	0.19	DMU24	
DH0250.69	0.00	0.00	0.00	0.00	0.04	0.00	0.08	DHUI	0.09	DPIO2	0.25	DPI06	
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DMU250.69	0.00	0.00	0.00	0.00	0.04	0.00	0.08	DMU	1 0.09	DMU2	0.25	DMU6	_
DMU260.39	0.00	0.00	0.00	0.00	0.03	0.00	0.17	DMU:	1 0.06	5 DMU5	0.07	DMU6	
DMU270.68	0.00	0.00	0.03	0.15	0.00	0.07	0.65	DMU:	1 0.70	DMU10			
DMU280.61	0.00	0.00	0.00	0.04	0.00	0.00	0.16	DMU:	L 0.19	DMU5	0.16	DMU10	
DMU290.30	0.00	0.00	0.00	0.03	0.00	0.00	0.02	DMU:	0.17	7 DMU5	0.40	DMU10	
DMU300.63	0.00	0.00	0.10	0.00	0.00	0.04	0.09	DMU	5 0.20	DMU7	0.48	DMU10	
DMU310.49	0.00	0.00	0.00	0.03	0.00	0.00	0.04	DMU	1 0.16	5 DMU2	0.31	DMU10	
DM0320.44	0.00	0.00	0.00	0.10	0.30	0.00	0.10	DMU	2 0.54	DMU5			
DMU331.11	0.00	0.12	0.31	0.00	0.24	0.10	0.93	DMU.		DMITO	0.97	DMI11 O	
DMU251 60	0.00	0.00	0.00	0.05	0.00	0.00	0.07	DPIU	1 0.15	DMU2	0.37	DMU7	
DMU351.69	0.00	0.80	0.00	0.00	0.00	0.04	0.39	DMU	0.43	DMU2	0.10	DMU6	
DMU270 92	0.00	0.00	0.00	0.00	0.02	0.00	0.03	DMU	0.01	DMU2	0.01	DMUG	
DMU290 79	0.00	0.00	0.00	0.00	0.00	0.00	0.11	DHU	0.11	DMITE	0.10	DMILE	
DMII390 55	0.00	0.00	0.00	0.00	0.04	0.00	0.00	DMIT		DMUS	0.03	DMUG	
DMU400.64	0.00	0.00	0.00	0.02	0.00	0.00	0.13	DMU	0.39	DMU5	0.40	DMU10	
DMU410.63	0.00	0.00	0.00	0.17	0.00	0.03	0.29	DMU	0.41	DMU10	0.17	DMU24	
DMU420.16	0.00	0.12	0.00	0.00	0.00	0.00	0.00	DMU	0.19	DMU5	0.08	DMU6	
DMU430.50	0.00	0.10	0.00	0.02	0.00	0.00	0.11	DMU	0.04	DMU5	0.46	DMU10	
DMU440.45	0.00	0.00	0.00	0.03	0.00	0.00	0.01	DMU	1 0.15	DMU5	0.50	DMU10	
DMU450.65	0.00	0.00	0.00	0.15	0.06	0.00	0.32	DMIT	0.04	5 DMU2	0.20	DMU10	
DMU460.84	0.00	0.00	0.00	0.00	0.00	0.11	0.11	DMIT	5 0.03	DMU7	0.80	DMU10	
DMU470.76	0.02	0.00	0.00	0.00	0.00	0.00	0.06	DMU	L 0.31	DMU5	0.33	DMU24	
DMI1480 33	0.00	0.00	0.00	0.10	0.00	0.00	0.15	DMU	0.05	DMU2	0.33	DMU10	

Based on the table, the technical efficiency score of the branch of "Khwaja Abdullah Ansari" in financial perspective is 0.3. As shown in Table, the reason of inefficiency in mentioned branch is 0.04 shortages in the variable of return on assets rate in outputs toward its potential and confirms the conclusion that because of this weakness, it hasn't reach common financial goals of profitability, growth and shareholder value in financial perspective toward the other branches. As described, DEA models allow the units of the model to be determine, for example the reference units of Anahita, Zafar St., Pasdaran have been introduced as a model unit for the

branch of Khwaja Abdullah Ansari, the weight of reference branch λ is the coefficient which is shown in Table and shows the participation rate of the reference branches in the assessment of inefficient branches. For example

coefficient λ (Shadow Prices) with score 0.02 in fact indicates that the similarity of Khwaja Abdullah Ansari unit for modeling from reference model is 0.02 higher than any other reference units, that finally, with the composition of reference units of Anahita, Zafar St., Pasdaran, a virtual unit will be achieved as follows:

	0.12		0.002			0.002			
0.02 0.17 =			0.003	As can be seen,	the inpu	ts of virtual unit is equal to	0.003	, while the real input of	
	0.4		0.008				0.008		
					0.43				
the branch of Khwaja Abdullah Ansari is			dullah Ansari is	0.1	. According to this results, the surplus amounts of use in				
					0.65				
recou		1 ch	ortage of	Controut related to	the mo	del of enveloping input-orie	nted super	efficient indicates that	

resources and shortage of output related to the model of enveloping input-oriented super-efficient indicates that the amount of output shortage in the variable of return on assets rate has caused to obtain score 0.3 in technical efficiency. Also, as it was said before, the model of enveloping input-oriented super-efficient, in addition to

calculating the efficiency score is capable to tank the efficient units that the ranking of efficiency units for financial perspective is as follows:

Efficiency Score	Branch Name	Unit
2.69	Pasdaran	10
1.69	International Exhibition	35
1.44	Afrigha	2
1.47	Seyyed Jamal Al-din Asad Abadi St.	17
1.38	Anahita	1
1.35	Parsa	23
1.21	Zafar St.	5

Analyzing the results of BSC model in customer perspective

• Branch of Khwaja Abdullah Ansari:

According to the data collected in the third chapter, the general form of the model of Enveloping *Input-Oriented* Super-Efficient in order to obtain technical efficiency score of mentioned branch in customer perspective will be as follows:

It should be explained that the value of $\mathcal{E} = 0.00001$ was used for zero due to avoid error in computing in GAMS software.

$$\begin{split} \min Z_0 &= \theta \\ st \\ \lambda_1 0.3 + \lambda_2 0.55 + \lambda_3 0.33 + \lambda_4 0.37 + \lambda_5 0.73 + \dots + \lambda_{48} 0.13 \leq \theta 0.3 \\ \lambda_1 0.5 + \lambda_2 0.4 + \lambda_3 0.2 + \lambda_4 0.45 + \lambda_5 0.5 + \dots + \lambda_{48} 0.23 \leq \theta 0.35 \\ \lambda_1 0.33 + \lambda_2 0.42 + \lambda_3 0.04 + \lambda_4 0.13 + \lambda_5 0.62 + \dots + \lambda_{48} 0.56 \geq 15 \\ \lambda_1 1 + \lambda_2 0.73 + \lambda_3 0.2 + \lambda_4 0.9 + \lambda_5 0.6 + \dots + \lambda_{48} 0.2 \geq 0.2 \\ \lambda_1 0.35 + \lambda_2 1 + \lambda_3 0.003 + \lambda_4 0.09 + \lambda_5 0.2 + \dots + \lambda_{48} 0.15 \geq 0.23 \\ \lambda_1 \geq 0, \\ \lambda_2 \geq 0, \\ \lambda_3 \geq 0, \\ . \end{split}$$

 $\lambda_{48} \geq 0$,

Above model is capable to calculate the efficiency score and determine the model units for the branch of Khajeh Abdollah Ansari in internal process customer perspective.

The second phase of above model in order to calculate the surplus and shortage amounts for the branch is as follows.

 $\max w = s_1^- + s_2^- + s_1^+ + s_2^+ + s_3^+$

$$\begin{split} st \\ \lambda_1 & 0.3 + \lambda_2 & 0.55 + \lambda_3 & 0.33 + \lambda_4 & 0.37 + \lambda_5 & 0.73 + \dots + \lambda_{48} & 0.13 + s_1^- = \theta & 0.3 \\ \lambda_1 & 0.5 + \lambda_2 & 0.4 + \lambda_3 & 0.2 + \lambda_4 & 0.45 + \lambda_5 & 0.5 + \dots + \lambda_{48} & 0.23 + s_2^- = \theta & 0.35 \\ \lambda_1 & 0.33 + \lambda_2 & 0.42 + \lambda_3 & 0.04 + \lambda_4 & 0.13 + \lambda_5 & 0.62 + \dots + \lambda_{48} & 0.56 - s_1^+ = 15 \\ \lambda_1 & 1 + \lambda_2 & 0.73 + \lambda_3 & 0.2 + \lambda_4 & 0.9 + \lambda_5 & 0.6 + \dots + \lambda_{48} & 0.2 - s_2^- = 0.2 \\ \lambda_1 & 0.35 + \lambda_2 & 1 + \lambda_3 & 0.003 + \lambda_4 & 0.09 + \lambda_5 & 0.2 + \dots + \lambda_{48} & 0.15 - s_3^- = 0.23 \\ \lambda_1 &\geq 0, \\ \lambda_2 &\geq 0, \\ \lambda_3 &\geq 0, \end{split}$$

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 $\lambda_{48} \geq 0$,

The result of the above model will calculated the surplus and shortage amounts during the providing services for the branch of Khwaja Abdullah Ansari.

The overall output of software GAMS for the model of "enveloping input-oriented super-efficiency under return in constant scale" with customer perspective data for 48 units is as follows:

Table 3: The total output of the software GAMS for 48 branches, customer perspective

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DMU3	0.41	0.05	0.00	0.04	0.00	0.06	0.36	DMU28					
DMU4	0.89	0.00	0.00	0.42	0.00	0.25	1.20	DMU28	0.55	DMU44			
DMU5	0.61	0.23	0.00	0.00	0.00	0.02	1.44	DMU22	0.38	DMU28			
DMU6	0.44	0.07	0.00	0.00	0.09	0.00	0.06	DMU2	1.01	DMU22			
DMU /	0.80	0.00	0.00	0.23	0.25	0.00	0.36	DMU2	0.21	DMU35	0.00	DMILAA	
DMUO	0.64	0.00	0.00	0.28	0.00	0.00	0.04	DMU2	0.07	DMU28	1 42	DMU44	
DMU10	1 12	0.00	0.00	0.20	0.00	0.00	0.12	DMU2 F	0.02	DMILAS	0 51	DMIIAA	
DMU11	0.50	0.00	0.00	0.00	0.22	0.00	0.25	DMU2	0.08	DMU35	0.31	DMI144	
DMII12	0.72	0.00	0.00	0.00	0.00	0.00	1 39	DMI122	0.51	DMII28	0.17	DIIOIII	
DMU13	0.30	0.00	0.00	0.00	0.00	0.04	0.24	DMU22	0.26	DMU28	0 00	DMI144	
DMU14	0.38	0.00	0.00	0.00	0.00	0.10	0.81	DMII22	0.02	DMI128	0.45	DMI144	
DMU15	0.30	0.05	0.00	0.00	0.00	0.10	0.87	DMI122	0.02	DMI128	0.15	511011	
DMU16	0.37	0.00	0.00	0.00	0.00	0.00	0.46	DMI122	0.36	DMI128	0 30	DMI144	
DMU17	0.44	0.1	0.2	0.00	0.00	0.00	0.04	DMU2	0.54	DMU22	0.16	DMU28	
DMU18	0.46	0.15	0.00	0.00	0.00	0.00	0.03	DMU2	1.95	DMU22	0.50	DMU28	
DMU19	0.96	0.16	0.00	0.00	0.00	0.00	0.50	DMU2	0.55	DMU22	0.03	DMU28	
DMU20	0.76	0.06	0.00	0.00	0.00	0.08	0.50	DMU22	1.06	DMU28			
DMU21	0.54	0.03	0.00	0.00	0.00	0.00	1.27	DMU22	0.35	DMU28			
DMU22	1.11	0.00	0.00	0.00	0.00	0.00	1.27	DMU22	0.57	DMU44	0.15	DMU48	
DMU23	0.62	0.06	0.00	0.00	0.00	0.00	0.11	DMU2	0.11	DMU22	0.14	DMU28	
DMU24	0.41	0.00	0.00	0.00	0.30	0.00	0.07	DMU2	0.66	DMU22	0.33	DMU44	
DMU25	0.40	0.00	0.00	0.00	0.17	0.00	0.06	DMU2	1.51	DMU22	0.05	DMU44	
DMU26	0.39	0.00	0.00	0.00	0.50	0.00	0.13	DMU10	0.03	DMU39	1.37	DMU44	
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DMU27	0.39	0.00	0.00	0.00	0.05	0.00	0.05	DMU2	1.76	DMU22	0.21	DMU44	
DMU28	1.23	0.00	0.00	0.00	0.00	0.00	0.52	DMU1	0.16	DMU22			
DMU29	0.40	0.00	0.00	0.00	0.00	0.00	0.20	DMU2	0.07	DMU35	0.04	DMU39	
DMU30	0.45	0.07	0.00	0.00	0.06	0.00	0.10	DMU2	1.07	DMU22			
DMU31	0.46	0.17	0.00	0.00	0.11	0.00	0.20	DMU2	0.99	DMU22			
DMU32	0.99	0.00	0.00	0.15	0.11	0.00	0.17	DMU2	0.66	DMU35			
DMU33	0.49	0.00	0.00	0.30	0.00	0.00	0.19	DMU2	0.15	DMU35	1.39	DMU44	
DMU34	0.51	0.00	0.00	0.00	0.00	0.00	0.17	DMU2	0.05	DMU35	0.07	DMU39	
DMU35	12.14	0.00	0.00	0.00	0.00	0.00	0.05	DMU35	1.21	DMU44			
DMU36	0.44	0.03	0.00	0.00	0.00	0.06	0.95	DMU22	0.35	DMU28			
DMU37	0.49	0.00	0.00	0.01	0.00	0.06	0.38	DMU28	0.30	DMU44			
DMU38	0.41	0.00	0.00	0.00	0.11	0.00	0.04	DMU2	0.08	DMU39	0.30	DMU44	
DMU39	1.06	0.00	0.00	0.00	0.14	0.00	0.05	DMU2	0.27	DMU10	0.08	DMU39	
DMU40	0.47	0.00	0.00	0.00	0.00	0.08	0.16	DMU22	0.19	DMU43	0.36	DMU48	
DMU41	0.53	0.00	0.00	0.00	0.07	0.00	0.10	DMU2	0.31	DMU22	0.58	DMU44	
DMU42	0.50	0.09	0.00	0.00	0.03	0.00	0.35	DMU2	1.06	DMU22			
DMU43	1.22	0.00	0.00	0.00	0.00	0.00	1.04	DMU10	0.09	DMU44			
DMU44	1.29	0.00	0.00	0.00	0.00	0.00	0.01	DMU1	0.06	DMU2	1.03	DMU22	
DMU45	0.32	0.00	0.00	0.00	0.00	0.00	0.15	DMU2	0.55	DMU22	0.15	DMU28	
DMU46	0.70	0.03	0.00	0.00	0.00	0.01	0.99	DMU22	0.27	DMU28			
DMU47	0.50	0.00	0.00	0.01	0.02	0.00	0.11	DMU2	0.17	DMU35			
				0.00	0.00	0.00	1 05	DIGIOO	0.07	DMITA 2	0.06	TO ATT A A	

Based on the table, the technical efficiency score of the branch of "Khwaja Abdullah Ansari" in customer perspective is 0.4. As shown in Table, the reason of inefficiency in the branch of Khwaja Abdullah Ansar is the surplus amounts of using inputs in amount of advertising and marketing cost, and shortage 0.2 in gaining the market share, toward its potential. Indeed, lack of cost management and lack of adequate programs in advertising has been caused the shortage in attracting customers. In fact, the branch has been poor in customer

service in compared to other branches due to the mentioned weakness. As described, DEA models allow the units of the model to be determine, for example the reference units of Afrigha, International exhibition, *Elahiyeh* Golnar Tower, Dezaship have been introduced as a model unit for the branch of Khwaja Abdullah Ansari, the

weight of reference branch λ is the coefficient and indicates the participation rate of the reference branches in the assessment of inefficient branches. That finally, with the composition of mentioned reference units, a virtual unit will be achieved as follows:

$$0.2\begin{bmatrix} 0.55\\ 0.4 \end{bmatrix} + 0.07\begin{bmatrix} 0.01\\ 0.65 \end{bmatrix} + 0.04\begin{bmatrix} 0.09\\ 0.2 \end{bmatrix} + 0.03\begin{bmatrix} 0.1\\ 0.23 \end{bmatrix} = \begin{bmatrix} 0.1\\ 0.14 \end{bmatrix}$$

As can be seen, the inputs of virtual unit is equal to $\begin{bmatrix} 0.1\\ 0.14 \end{bmatrix}$, while the real input of the branch of Khwaja

Abdullah Ansari is $\begin{bmatrix} 0.3\\ 0.35 \end{bmatrix}$. The ranking of efficiency units for customer perspective is as follows:

Table 2: The ranking of efficiency units for customer perspective

Efficiency Score	Branch Name	Units
12.14	Sepehr	25
1.52	Afrigha	2
1.29	Dezaship	44
1.23	pesian	28
1.22	Zaferanieh	43
1.21	Pasdaran	10
1.11	Mother Square	22
1.01	efficiency	10
1.09	Elahiyeh Golnar Tower	39
1.01	Velenjak	48
1	Anahita	1

Analyzing the results of BSC model in internal process perspective:

• Branch of Khwaja Abdullah Ansari:

According to the data collected in the third chapter, the general form of the model of Enveloping *Input-Oriented* Super-Efficient in order to obtain technical efficiency score of mentioned branch in customer perspective will be as follows:

It should be explained that the value of $\mathcal{E} = 0.00001$ was used for zero due to avoid error in computing in GAMS software.

```
\begin{split} \min Z_0 &= \theta \\ st \\ \lambda_1 0.53 + \lambda_2 0.4 + \lambda_3 0.14 + \lambda_4 0.45 + \lambda_5 0.32 + \dots + \lambda_{48} 0.06 \leq \theta 0.32 \\ \lambda_1 1 + \lambda_2 0.2 + \lambda_3 0.03 + \lambda_4 0.45 + \lambda_5 0.12 + \dots + \lambda_{48} 0.08 \geq 0.06 \\ \lambda_1 0.4 + \lambda_2 0.55 + \lambda_3 0.55 + \lambda_4 0.04 + \lambda_5 1 + \dots + \lambda_{48} 0.02 \geq 0.02 \\ \lambda_1 0.5 + \lambda_2 0.4 + \lambda_3 0.2 + \lambda_4 0.5 + \lambda_5 0.4 + \dots + \lambda_{48} 0.23 \geq 0.35 \\ \lambda_1 \geq 0, \\ \lambda_2 \geq 0, \\ \lambda_3 \geq 0, \\ \vdots \\ \lambda_{48} \geq 0, \end{split}
```

This model is capable to calculate the amounts of input surplus and output shortage.

$$\begin{split} \max w &= s_1^- + s_1^+ + s_2^+ + s_3^+ \\ st \\ \lambda_1 &= 0.53 + \lambda_2 &= 0.4 + \lambda_3 &= 0.14 + \lambda_4 &= 0.45 + \lambda_5 &= 0.32 + \dots + \lambda_{48} &= 0.06 + s_1^- = \theta &= 0.32 \\ \lambda_1 &= 1 + \lambda_2 &= 0.2 + \lambda_3 &= 0.03 + \lambda_4 &= 0.45 + \lambda_5 &= 0.12 + \dots + \lambda_{48} &= 0.08 - s_1^+ = 0.06 \\ \lambda_1 &= 0.4 + \lambda_2 &= 0.55 + \lambda_3 &= 0.55 + \lambda_4 &= 0.4 + \lambda_5 &= 1 + \dots + \lambda_{48} &= 0.23 - s_2^+ = 0.02 \\ \lambda_1 &= 0.5 + \lambda_2 &= 0.4 + \lambda_3 &= 0.2 + \lambda_4 &= 0.5 + \lambda_5 &= 0.4 + \dots + \lambda_{48} &= 0.23 - s_3^+ = 0.35 \\ \lambda_2 &\geq 0, \\ \lambda_3 &\geq 0, \\ . \end{split}$$

 $\lambda_{48} \ge 0$,

The overall output of software GAMS for the model of "enveloping input-oriented super-efficiency under return in constant scale" with internal process perspective data for 48 units is as follows:

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DRU4 0.79 0.00 0.00 0.00 0.00 DRU5 1.10 DRU5 0.25 DRU50 DRU5 0.36 0.00 0.00 0.42 0.18 DRU5 1.71 DRU30 0.34 DRU32 DRU5 0.10 0.00 0.00 0.00 0.42 DRU5 1.71 DRU30 0.34 DRU32 DRU5 0.10 0.00 0.00 0.00 0.00 0.13 DRU30 0.34 DRU32 0.73 DRU32 DRU5 0.10 0.00 0.00 0.00 0.00 0.11 DRU3 0.33 DRU32 0.35 DRU34 DRU10 0.40 0.00 0.00 0.00 0.00 0.00 DRU35 0.38 DRU32 0.44 DRU34 DRU110 0.40 0.00 0.00 0.00 D.00	DMU3	2.62	0.00	0.10	0.00	0.01	0.97	DMU3	0.	92	DMU28			
DRU5 0.36 0.00 0.00 0.32 1.81 DRU5 1.82 DRU5 DRU5 0.37 0.00 0.00 0.42 0.13 DRU5 1.71 DRU53 0.34 DRU53 0.34 DRU53 0.35 DRU53 0.49 DRU53 0.48 DRU53 0.50 DRU54	DMU4	0.79	0.00	0.00	0.00	0.00	0.00	DMU3	1.	10	DMU6	0.25	DMU30	
Detty 6 1.03 0.00 0.00 0.00 0.42 0.13 Detty 3 0.14 Detty 3 0.14 <td>DMU5</td> <td>0.36</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.03</td> <td>1.81</td> <td>DMU3</td> <td>0.</td> <td>18</td> <td>DMU6</td> <td></td> <td></td> <td></td>	DMU5	0.36	0.00	0.00	0.00	0.03	1.81	DMU3	0.	18	DMU6			
BMUT7 0.27 0.00 0.00 0.00 0.13 BMUT3 0.14 BMUT30 0.34 BMUT32 BMUT9 0.40 0.00 0.00 0.00 0.00 0.00 0.01 DEWT3 0.13 BMUT30 0.13 BMUT32 0.73 BMUT34 DMUT10 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 DMUT34 DMUT34 <t< td=""><td>DMU6</td><td>1.03</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.42</td><td>0.18</td><td>DMU6</td><td>1.</td><td>.71</td><td>DMU30</td><td></td><td></td><td></td></t<>	DMU6	1.03	0.00	0.00	0.00	0.42	0.18	DMU6	1.	.71	DMU30			
DetUs 0.10 0.00 0.00 0.00 0.11 DetUs 0.13 DetUs 0.13 DetUs DetUs 0.49 0.00 0.00 0.00 0.00 0.13 DetUs 0.14 DetUs 0.15 DetUs 0.15 DetUs 0.14 DetUs 0.14 DetUs 0.14 DetUs 0.14 DetUs 0.14 DetUs 0.17 DetUs 0.18 DetUs 0.18 DetUs 0.18 DetUs DetU	DMU7	0.27	0.00	0.00	0.00	0.00	0.13	DMU3	0.	34	DMU30	0.34	DMU32	
DBUDS 0.48 0.00 0.100 0.101 0.101 0.103 DBUDS DBUDS 0.440 0.00 0.00 0.00 0.00 0.48 DBUDS 0.41 DBUDS 0.414 DBUDS D.41 <td< td=""><td>DMU8</td><td>0.10</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.11</td><td>DMU3</td><td>0.</td><td>.13</td><td>DMU32</td><td>0.73</td><td>DMU34</td><td></td></td<>	DMU8	0.10	0.00	0.00	0.00	0.00	0.11	DMU3	0.	.13	DMU32	0.73	DMU34	
DEUTL 007 0.10 0.00	DMU9	0.49	0.00	0.00	0.00	0.00	0.24	DMU6	0.	49	DMU32			
PHIL2 0.32 0.10 0.00 0.00 0.03 DMI34 0.38 DMI324 0.18 DMI34 DMI13 0.54 0.00 0.00 0.00 0.01 DMI33 0.57 DMI32 0.59 DMI34 DMI13 0.53 0.00 0.00 0.00 0.01 DMI33 0.57 DMI32 0.59 DMI34 DMI13 0.53 0.00 0.00 0.00 0.00 DMI33 0.52 DMI34 DMI34 DMI15 0.53 0.00 0.00 0.00 0.00 DMI33 0.52 DMI32 0.14 DMI34 DMI15 0.52 DMI30 0.22 DMI30 0.64 DMI32 D.64 DMI34 DMI15 0.22 DMI30 0.60 D.60	DMU11	0.40	0.10	0.00	0.00	0.00	0.00	DMUS	0.	48	DMU32	0.30	DMIT34	
PRUI3 0.54 0.00 0.00 0.01 PRUI3 0.57 PRUI32 0.59 PRUI34 DRUI3 0.19 0.00 0.00 0.00 0.01 PRUI35 0.47 PRUI32 0.14 PRUI34 DRUI3 0.45 0.00 0.00 0.00 0.01 0.12 PRUI3 0.47 PRUI32 0.14 PRUI34 DRUI3 0.45 0.00 0.00 0.00 0.00 0.01 0.12 PRUI35 0.44 PRUI35 0.44 PRUI37 0.33 0.00	DMU12	0.32	0.10	0.00	0.00	0.00	0.03	DMU3	0.	38	DMU32	0.18	DMU34	
PMI114 0.19 0.00 0.00 0.00 0.01 PMI135 0.47 PMI132 0.14 PMI134 PMI116 0.45 0.00 0.00 0.00 0.01 0.12 PMI13 0.47 PMI132 0.14 PMI134 PMI116 0.45 0.00 0.00 0.00 0.01 0.12 PMI13 0.47 PMI132 0.14 PMI134 PMI116 0.45 0.00 0.00 0.00 0.00 0.40 PMI134 PMI134 <td>DMU13</td> <td>0.54</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.01</td> <td>DMU3</td> <td>0.</td> <td>37</td> <td>DMU32</td> <td>0.59</td> <td>DMU34</td> <td></td>	DMU13	0.54	0.00	0.00	0.00	0.00	0.01	DMU3	0.	37	DMU32	0.59	DMU34	
PMU15 0.33 0.00 0.00 0.00 0.06 PMU32 0.17 PMU32 0.14 PMU34 DMU17 0.33 0.00 0.00 0.00 0.00 0.05 PMU33 0.22 PMU30 1.62 PMU32 DMU15 0.09 0.00 0.00 0.00 0.00 PMU31 0.22 PMU32 0.50 PMU32 DMU121 0.02 0.00 0.00 0.00 0.00 PMU32 0.50 PMU32 <	DMU14	0.19	0.00	0.00	0.00	0.00	0.01	DMU3	0.	47	DMU32	0.44	DMU34	
PHU16 0.48 0.00 0.00 0.01 0.12 PHU33 0.82 PHU3 0.82 PHU33 0.82 PHU34 DHU17 0.33 0.00 0.00 0.00 0.00 0.02 DHU33 0.22 DHU33 0.42 DHU32 0.55 DHU32 0.45 DHU32 DHU32 DHU32 DHU32 DHU32 DHU32 DHU32 DHU32 DHU32 DHU33 DHU32 DHU33 DHU32 DHU32 DHU32 <t< td=""><td>DMU15</td><td>0.33</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.06</td><td>DMU3</td><td>0.</td><td>97</td><td>DMU32</td><td>0.14</td><td>DMU34</td><td></td></t<>	DMU15	0.33	0.00	0.00	0.00	0.00	0.06	DMU3	0.	97	DMU32	0.14	DMU34	
PMU17 0.33 0.00 0.00 0.00 0.05 DMU33 0.22 DMU30 1.42 DMU32 PMU19 0.28 0.00 0.00 0.00 0.00 0.00 0.00 0.00 DMU30 0.22 DMU30 0.44 DMU32 PMU21 0.29 0.00 0.00 0.00 0.23 DMU3 0.20 DMU32 0.55 DMU32 PMU22 0.27 0.00 0.00 0.00 0.20 DAU33 0.22 DMU32 0.55 DMU32 PMU22 0.47 0.00 0.00 0.00 0.41 DMU33 0.59 DMU32 DMU34 DMU32 DMU34 DMU34 DMU34<	DMU16	0.45	0.00	0.00	0.00	0.01	0.12	DMU3	0.	82	DMU6			
PMT18 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.22 PMT32 0.22 PMT32 0.20 PMT32 0.50 PMT34 PMT120 0.28 0.00 0.00 0.00 0.29 PMT32 0.50 PMT32 0.57 0.00 0.00 0.00 0.22 PMT32 0.57 0.00 0.44 PMT32 PMT25 0.57 0.00 0.00 0.00 0.00 0.02 PMT32 0.55 PMT32 0.65 PMT32 PMT26 0.57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <t< td=""><td>DMU17</td><td>0.33</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.05</td><td>DMU3</td><td>0.</td><td>22</td><td>DMU30</td><td>1.62</td><td>DMU32</td><td></td></t<>	DMU17	0.33	0.00	0.00	0.00	0.00	0.05	DMU3	0.	22	DMU30	1.62	DMU32	
PMT19 0.28 0.00 0.00 0.00 0.00 0.22 DMT33 0.26 DMT32 0.50 DMT32 DMT21 0.29 0.00 0.00 0.00 0.29 DMT3 0.20 DMT32 0.50 DMT32 DMT21 0.29 0.00 0.00 0.00 0.00 0.00 DMT32 0.55 DMT32 DMT23 0.65 0.00 0.00 0.00 0.00 0.00 DMT32 0.55 DMT32 0.55 DMT32 DMT32 0.65 DMT32 0.68 DMT33 0.22 DMT32 DMT32 DMT32 0.68 DMT33 0.72 DMT32 DMT25 0.57 0.00 0.00 0.00 0.00 D.00 DMT32 DMT32 DMT32 DMT32 DMT32 DMT32 DMT32 DMT32 D.65 DMT34 DMT26 0.53 0.00 0.00 D.00 DMT32 D.70 DMT32 D.65 DMT32 D.65 <td< td=""><td>DMU18</td><td>0.09</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.03</td><td>DMU6</td><td>0.</td><td>.58</td><td>DMU32</td><td></td><td></td><td></td></td<>	DMU18	0.09	0.00	0.00	0.00	0.00	0.03	DMU6	0.	.58	DMU32			
DMU20 0.00 0.00 0.00 0.00 0.20 DMU31 0.20 DMU32 0.50 DMU32 DMU22 0.17 0.00 0.00 0.00 0.00 0.29 DMU6 0.66 DMU30 0.005 DMU32 DMU23 0.65 0.00 0.00 0.00 0.00 0.00 DMU33 0.59 DMU30 0.44 DMU32 DMU24 0.46 0.00 0.00 0.00 0.00 0.59 DMU30 0.44 DMU32 DMU25 0.57 0.00 0.00 0.00 0.10 DMU30 0.59 DMU30 0.72 DMU32 DMU25 0.57 0.00 0.00 0.00 0.00 0.59 DMU30 0.72 DMU30 0.72 DMU32 0.65 DMU34	DMU19	0.28	0.00	0.00	0.00	0.00	0.00	DMU3	0.	.22	DMU30	0.64	DMU32	
DHU21 0.00 0.00 0.00 0.00 0.00 0.00 DHU5 0.05 DHU32 DHU32 DHU22 0.05 0.00 <	DMU20	0.08	0.00	0.00	0.00	0.00	0.23	DMU3	0.	20	DMU32	0.50	DMU34	
DMU22 0.10 0.100 0.100 0.100 0.100 0.100 DU132 0.100 DU133 0.110 DU133 0.110 DU133 0.110 DU133 DU133 DU133 DU134 DU134 <th< td=""><td>DMU21</td><td>0.29</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.29</td><td>DMU6</td><td>0.</td><td>.06</td><td>DMU30</td><td>0.05</td><td>DM032</td><td></td></th<>	DMU21	0.29	0.00	0.00	0.00	0.00	0.29	DMU6	0.	.06	DMU30	0.05	DM032	
DMU23 0.160 0.100 <t< td=""><td>DMU22</td><td>0.1/</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.14</td><td>DMUS</td><td></td><td>.20</td><td>DMU32</td><td>0.22</td><td>DMIT2 2</td><td></td></t<>	DMU22	0.1/	0.00	0.00	0.00	0.00	0.14	DMUS		.20	DMU32	0.22	DMIT2 2	
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DMU28 0.53 0.00 0.01 0.00 <t< td=""><td>DMU27</td><td>0.57</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.23</td><td>DMU3</td><td>0.</td><td>70</td><td>DMU32</td><td>0.65</td><td>DMU34</td><td></td></t<>	DMU27	0.57	0.00	0.00	0.00	0.00	0.23	DMU3	0.	70	DMU32	0.65	DMU34	
DMU29 0.14 0.00 0.00 0.00 DMU30 0.59 DMU32 0.07 DMU34 DMU30 1.00 0.00 0.00 0.00 DMU30 0.17 DMU30 0.82 DMU32 DMU31 1.20 0.00 0.00 0.00 DMU30 0.17 DMU30 0.82 DMU32 DMU32 1.35 0.00 0.00 0.00 0.00 DMU32 1.33 DMU34 DMU34 1.40 0.00 0.14 0.01 0.00 0.46 DMU32 1.33 DMU34 DMU36 0.25 0.00 0.00 0.00 1.40 DMU32 0.05 DMU32 0.36 DMU34 DMU36 0.25 0.00 0.00 0.00 0.00 0.05 DMU32 0.25 DMU32 0.36 DMU34 DMU37 0.16 0.00 0.00 0.00 0.00 0.01 DMU30 0.25 DMU32 0.25 DMU34	DMU28	0.53	0.00	0.00	0.00	0.09	1.07	DMU3	0.	30	DMU6			
DMU30 1.00 0.00 0.00 0.00 DMU30 DMU31 0.20 0.00 0.00 0.00 0.06 DMU32 0.17 DMU30 0.82 DMU32 DMU31 0.87 0.00 0.00 0.00 0.00 DMU32 1.33 DMU34 DMU33 0.87 0.00 0.11 0.00 0.00 1.40 DMU32 1.33 DMU34 DMU35 0.13 0.00 0.44 0.01 0.00 1.40 DMU32 0.05 DMU34 DMU35 0.13 0.00 0.00 0.00 0.05 DMU32 0.36 DMU32 0.36 DMU34 DMU37 0.16 0.00 0.00 0.00 DMU32 0.25 DMU34 DMU37 0.16 0.00 0.00 0.00 DMU30 0.25 DMU32 0.25 DMU30 DMU39 0.36 0.00 0.00 0.00 0.00 0.17 DMU32 0.12	DMU29	0.14	0.00	0.00	0.00	0.00	0.03	DMU3	0.	59	DMU32	0.07	DMU34	
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DMU32 1.35 0.00 0.00 DMU32 1.33 DMU34 DMU33 0.87 0.00 0.10 0.00 0.36 DMU32 1.33 DMU34 DMU33 1.40 0.00 0.14 0.01 0.00 1.40 DMU32 1.33 DMU34 DMU35 0.13 0.00 0.00 0.35 DMU33 1.09 DMU32 0.05 DMU34 DMU36 0.25 0.00 0.00 0.00 1.09 DMU3 0.05 DMU32 0.36 DMU34 DMU37 0.16 0.00 0.00 0.00 DMU3 0.29 DMU32 0.25 DMU34 DMU39 0.36 0.00 0.00 0.00 DMU3 0.29 DMU32 0.25 DMU34 DMU39 0.33 0.00 0.00 0.00 0.17 DMU32 DMU32 DMU32 DMU32 DMU32 DMU34 DMU34 DMU30 DAS DMU30 DAS DMU30	DMU31	0.20	0.00	0.00	0.00	0.00	0.06	DMU3	0.	17	DMU30	0.82	DMU32	
DMU33 0.87 0.00 0.00 0.00 0.36 DMU34 DMU34 1.40 0.00 0.14 0.012 1.33 DMU34 DMU35 0.13 0.00 0.14 0.012 1.40 DMU32 1.33 DMU34 DMU35 0.13 0.00 0.00 0.00 0.00 1.40 DMU32 0.35 DMU34 DMU35 0.13 0.00 0.00 0.00 1.09 DMU32 0.36 DMU34 DMU37 0.16 0.00 0.00 0.00 D.00 D.00 DMU32 0.25 DMU34 DMU38 0.36 0.00 0.00 0.00 DMU3 0.29 DMU32 0.25 DMU34 DMU38 0.36 0.00 0.00 0.00 DMU3 0.29 DMU32 0.25 DMU34 DMU38 0.36 0.00 0.00 0.00 0.01 DMU3 0.45 DMU32 0.25 DMU32 DMU34	DMU32	1.35	0.00	0.00	0.00	0.00	DMU32							
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Lemi35 0.13 0.00 <	DMU34	1.40	0.00	0.14	0.01	0.00	1.40	DMU32	1.	.33	DMU34	0.05	DUCTO	
DHU35 0.13 0.100 0.100 0.100 0.100 DHU37 DHU32 DHU32 DHU33 DHU33 0.36 DHU33 DL33 DHU33 DL33 DHU33 DL33 DHU33 DL33 DHU34 DL33 DHU34 DL33 DHU34 DHU34 DHU34 DL33 DHU34 DHU34 <td>DMU35</td> <td>0.13</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>1.00</td> <td>DMUS</td> <td>1.</td> <td>09</td> <td>DMU32</td> <td>0.05</td> <td>DMU34</td> <td></td>	DMU35	0.13	0.00	0.00	0.00	0.00	1.00	DMUS	1.	09	DMU32	0.05	DMU34	
DMU38 0.10 0.101 DMU30 0.28 DMU30 0.28 DMU30 0.28 DMU30 0.28 DMU30 0.28 DMU32 DMU41 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.101 DMU30 0.28 DMU32 DMU34 DMU43 0.28 0.00 0.00 0.00 0.01 DMU3 0.29 DMU32 0.10 DMU34 DMU43 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DMU36	0.25	0.00	0.00	0.00	0.00	1.09	DMU3	0.	20	DMU32	0.36	DMI134	
DMI39 0.133 0.100 0.100 0.100 DMI30 DMI30 DMI30 DMI30 DMI30 DMI30 DMI31 DMI140 0.34 0.00 0.00 0.00 0.00 0.33 DMI30 0.28 DMI32 DMI410 0.25 0.00 0.00 0.00 0.00 0.011 DMI32 0.10 DMI34 DMI42 0.30 0.00 0.00 0.00 0.011 DMI3 0.69 DMI32 0.10 DMI34 DMI42 0.30 0.00 0.00 0.00 0.01 DMI3 0.29 DMI32 DMI34 DMI43 0.68 0.00 0.00 0.00 0.00 DMI30 0.29 DMI32 DMI34 DMI44 0.48 0.00 0.00 0.00 D.00 DMI32 0.30 DMI34 DMI45 0.15 0.00 0.00 0.00 0.14 DMI32 0.21 DMI34 DMI46 0.79 0.00 </td <td>DMII38</td> <td>0.10</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>DMUS</td> <td>0.</td> <td>06</td> <td>DMUSZ</td> <td>0.25</td> <td>DMU30</td> <td></td>	DMII38	0.10	0.00	0.00	0.00	0.00	0.00	DMUS	0.	06	DMUSZ	0.25	DMU30	
DMU40 0.34 0.00 0.00 0.00 0.04 DMU3 0.39 DMU32 DMU32 DMU41 0.25 0.00 0.00 0.00 0.00 0.01 DMU32 0.19 DMU32 0.10 DMU34 DMU43 0.30 0.00 0.00 0.00 0.01 DMU3 0.49 DMU32 0.10 DMU34 DMU43 0.38 0.00 0.00 0.00 0.01 DMU3 0.29 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 0.00 DMU32 0.30 DMU32 0.05 DMU32 DMU45 0.15 0.00 0.00 0.00 0.00 DMU32 0.30 DMU32 DMU34 DMU44 DMU44 DMU46 DMU30 0.19 DMU34	DMU39	0.33	0.00	0.00	0.00	0.00	0.33	DMU6	0.	17	DMU32	0.15	21000	
DMU41 0.25 0.00 0.00 0.00 0.01 DMU3 0.69 DMU32 0.10 DMU34 DMU41 0.25 0.00 0.00 0.01 DMU3 0.69 DMU32 0.10 DMU34 DMU42 0.30 0.00 0.00 0.01 DMU3 0.29 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 0.00 DNU3 0.45 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 0.00 D.00 D.00 DMU35 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 D.00 DMU3 0.45 DMU32 DMU32 DMU46 0.79 0.00 0.00 0.00 0.45 DMU32 0.21 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU6 0.50 DMU32 DMU48 0.82 <t< td=""><td>DMU40</td><td>0.34</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.04</td><td>DMU3</td><td>0.</td><td>39</td><td>DMU30</td><td>0.28</td><td>DMU32</td><td></td></t<>	DMU40	0.34	0.00	0.00	0.00	0.00	0.04	DMU3	0.	39	DMU30	0.28	DMU32	
DMU42 0.30 0.00 0.01 0.00 0.31 DMU6 0.98 DMU32 DMU43 0.08 0.00 0.00 0.00 0.01 0.00 0.01 0.02 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 DMU30 0.45 DMU32 0.12 DMU34 DMU45 0.15 0.00 0.00 0.00 DMU32 0.30 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU32 0.30 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU6 0.50 DMU32 DMU48 0.82 0.00 0.00 0.00 0.00 0.25 DMU32 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU32	DMU41	0.25	0.00	0.00	0.00	0.00	0.01	DMU3	0.	69	DMU32	0.10	DMU34	
DMU43 0.08 0.00 0.00 0.00 0.01 DMU3 0.29 DMU32 0.12 DMU34 DMU44 0.48 0.00 0.00 0.00 0.00 DMU3 0.45 DMU32 0.12 DMU34 DMU45 0.15 0.00 0.00 0.00 0.00 0.45 DMU30 0.05 DMU32 DMU46 0.79 0.00 0.00 0.00 0.14 DMU3 0.25 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU3 0.25 DMU32 0.21 DMU32 DMU46 0.79 0.00 0.00 0.00 0.14 DMU3 0.25 DMU32 0.21 DMU34 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU32 0.12 DMU34	DMU42	0.30	0.00	0.00	0.01	0.00	0.31	DMU 6	0.	98	DMU32			
DMU44 0.48 0.00 0.00 0.00 DMU3 0.45 DMU30 0.05 DMU32 DMU45 0.15 0.00 0.00 0.00 0.69 DMU32 0.30 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU3 0.25 DMU32 DMU48 0.82 0.00 0.00 0.00 0.14 DMU6 0.50 DMU32 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU30 0.19 DMU32	DMU43	0.08	0.00	0.00	0.00	0.00	0.01	DMU3	0.	29	DMU32	0.12	DMU34	
DMU45 0.15 0.00 0.00 0.00 0.69 DMU32 0.30 DMU34 DMU46 0.79 0.00 0.00 0.00 0.14 DMU32 0.25 DMU32 0.21 DMU34 DMU46 0.39 0.00 0.00 0.14 DMU6 0.50 DMU32 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU30 0.19 DMU32	DMU44	0.48	0.00	0.00	0.00	0.00	0.00	DMU3	0.	45	DMU30	0.05	DMU32	
DMU46 0.79 0.00 0.00 0.00 0.14 DMU3 0.25 DMU32 DMU34 DMU48 0.39 0.00 0.00 0.00 0.14 DMU4 0.50 DMU32 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU32	DMU45	0.15	0.00	0.00	0.00	0.00	0.69	DMU32	0.	30	DMU34			
DMU47 0.39 0.00 0.00 0.00 0.14 DMU6 0.50 DMU32 DMU48 0.82 0.00 0.00 0.00 0.02 DMU3 0.29 DMU30 0.19 DMU32	DMU46	0.79	0.00	0.00	0.00	0.00	0.14	DMU3	0.	25	DMU32	0.21	DMU34	
DMU48 0.82 0.00 0.00 0.00 0.00 0.02 DMU3 0.29 DMU30 0.19 DMU32	DMU47	0.39	0.00	0.00	0.00	0.00	0.14	DMU 6	0.	50	DMU32			
	DMU48	0.82	0.00	0.00	0.00	0.00	0.02	DMU3	0.	29	DMU30	0.19	DMU32	

Table 3: The total output of the software GAMS for 48 branches, internal process perspective

Based on the table, the technical efficiency score of the branch of "Khwaja Abdullah Ansari" in financial perspective is 0.14. As shown in Table, the reason of inefficiency in mentioned branch is surplus amounts of the costs of new banking services in the amount 0.1.In fact, internal activities of the branch including the provision of modern banking services to attract customers have been with lack of cost management in the context of modern banking services more than other branches. According to data, the units of Momtaz Melli, Pardis, Zebarjad have been introduced as a model unit for the inefficient branch of Khwaja Abdullah Ansari in

internal process perspective. And finally, with the composition of reference units, a virtual unit will be achieved as follows:

$$0.03[0.14] + 0.59[0.06] + 0.07[0.06] = [0.04]$$

As can be seen, the inputs of virtual unit is equal to [0.04], while the real input of the branch of Pasdaran is [0.4]. The ranking of efficiency units for internal process perspective is also as follows:

Efficiency Score	Branch Name	Units
2.62	Momtaz Melli	3
1.35	Pardis	32
1.03	Dr. Shariati	6
1	Anatita	1
1	Mokhaberat	30

Table 4: The ranking of efficiency units for internal process perspective

Analyzing the results of BSC model in Growth and Learning perspective

Branch of Khwaja Abdullah Ansari:

According to the data collected in the third chapter, the general form of the model of Enveloping *Input-Oriented* Super-Efficient in order to obtain technical efficiency score of mentioned branch in Growth and Learning perspective will be as follows:

It should be explained that the value of $\mathcal{E} = 0.00001$ was used for zero due to avoid error in computing in GAMS software.

 $\min Z_0 = \theta$

$$\begin{split} \lambda_1 0.12 + \lambda_2 0.2 + \lambda_3 0.7 + \lambda_4 0.22 + \lambda_5 0.3 + \dots + \lambda_{48} 0.2 &\leq \theta 0.3 \\ \lambda_1 0.65 + \lambda_2 0.75 + \lambda_3 0.15 + \lambda_4 0.32 + \lambda_5 0.03 + \dots + \lambda_{48} 0.42 &\leq \theta 0.24 \\ \lambda_1 0.03 + \lambda_2 0.12 + \lambda_3 0.24 + \lambda_4 0.13 + \lambda_5 0.02 + \dots + \lambda_{48} 0.46 &\geq 0.23 \\ \lambda_1 0.54 + \lambda_2 0.03 + \lambda_3 0.02 + \lambda_4 0.09 + \lambda_5 0.06 + \dots + \lambda_{48} 0.002 &\geq 0.002 \\ \lambda_1 0.8 + \lambda_2 0.75 + \lambda_3 0.55 + \lambda_4 0.45 + \lambda_5 0.2 + \dots + \lambda_{48} 0.25 &\geq 0.23 \\ \lambda_1 0.03 + \lambda_2 1 + \lambda_3 0.3 + \lambda_4 0.45 + \lambda_5 0.23 + \dots + \lambda_{48} 0.5 &\geq 0.2 \\ \lambda_1 &\geq 0, \\ \lambda_2 &\geq 0, \\ \lambda_3 &\geq 0, \\ \ddots \\ \ddots \\ \lambda_{48} &\geq 0, \\ \text{This model is capable to calculate the amounts of input surplus and output shortage.} \end{split}$$

 $\max w = s_1^- + s_1^+ + s_2^+ + s_3^+$

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```
\begin{split} \lambda_1 0.12 + \lambda_2 0.2 + \lambda_3 0.7 + \lambda_4 0.22 + \lambda_5 0.3 + \dots + \lambda_{48} 0.2 + s_1^- &= \theta 0.3 \\ \lambda_1 0.65 + \lambda_2 0.75 + \lambda_3 0.15 + \lambda_4 0.32 + \lambda_5 0.03 + \dots + \lambda_{48} 0.42 + s_2^- &= \theta 0.24 \\ \lambda_1 0.03 + \lambda_2 0.12 + \lambda_3 0.24 + \lambda_4 0.13 + \lambda_5 0.02 + \dots + \lambda_{48} 0.46 - s_1^+ &= 0.23 \\ \lambda_1 0.54 + \lambda_2 0.03 + \lambda_3 0.02 + \lambda_4 0.09 + \lambda_5 0.06 + \dots + \lambda_{48} 0.002 - s_2^+ &= 0.002 \\ \lambda_1 0.8 + \lambda_2 0.75 + \lambda_3 0.55 + \lambda_4 0.45 + \lambda_5 0.2 + \dots + \lambda_{48} 0.25 - s_3^+ &= 0.23 \\ \lambda_1 0.03 + \lambda_2 1 + \lambda_3 0.3 + \lambda_4 0.45 + \lambda_5 0.23 + \dots + \lambda_{48} 0.5 - s_4^+ &= 0.2 \\ \lambda_1 \geq 0, \\ \lambda_2 \geq 0, \\ \lambda_3 \geq 0, \end{split}
```

 $\lambda_{48} \ge 0$,

The overall output of software GAMS for the model of "enveloping input-oriented super-efficiency under return in constant scale" with Growth and Learning perspective data for 48 units is as follows:

Table 5: The total output of the software GAMS for 48 branches, Growth and Learning perspective

_	THE EQ	in ocoren				ioraries riteip								
2) 🖪 🕯	🍇 💊 🕯	×		•	(a) 🚳 🕒								
Jak	heli.gms	roshd.gms	dakheli.lst	roshd.lst	supeff									
		z	s(p1)	s (p2) s(p3)	s(i4)	t(r1)	lambo	ia	r	eference-set	;		
	DMU1	1.38	0.00	0.00	0.00	0.00	0.00	0.00	DMU1					
	DMU2	1.28	0.00	0.00	0.00	0.00	0.00	0.00	DMU2					
	DMU3	0.31	0.00	0.00	0.14	0.06	0.00	0.00	0.60	DMU10	0.25	DMU14 0.	43	DMU24
	DMU4	0.64	0.00	0.00	0.27	0.00	0.00	0.00	0.05	DMU1	0.18	DMU2 0.	80	DMU10
	DMUS	0.50	0.00	0.00	0.37	0.00	0.00	0.00	0.55	DMU10	0.30	DMU17 0.	05	DMI122
	DMU6	0.54	0.00	0.00	0.32	0.00	0.42	0.00	1.02	DMU7	0.14	DMU33 0.	07	DMU37
	DMU7	1.89	0.00	0.00	0.00	0.00	0.00	0.26	2.02	DMU7		211000 01		
	DMUS	0.74	0.00	0.00	0.35	0.00	0.08	0.23	0.47	DMI122	0.44	DMI14.6		
	DMII9	0.35	0.00	0.00	0.40	0.00	0.08	0.00	0.31	DMU10	0.38	DMU17 0	36	DMIT22
	DMII10	1 57	0.00	0.00	0 00	0.06	0.00	0.00	DMU10	211010	0.00	211027 01		
	DMIT11	0 21	0.00	0.00	0.09	0.00	0.00	0 10	0.06	DMI11	0.16 DMU10		40	DMIT14
	DMIT1 2	0.85	0.00	0.00	0.00	0.10	0.00	0.01	0.27	DMIT	0 18 DMU14		24	DMITA
	DMII13	0 43	0.00	0.00	0.00	0.13	0.00	0.02	0.25	DMU1	0 16	DMI140 09	DM	145
	DMIT14	1 22	0.00	0.00	0.00	0.10	0.00	0.02	0.15	DMII1	1 04	DMI10 0	16	DMIT14
	DMIT15	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.15	DMUIO	0.03	DMI17 1	01	DMII23
	DMII16	0.10	0.00	0.00	0.00	0.01	0.10	0.00	0.02	DMII2	0.05	DMU10 0	30	DMI114
	DMIT1 7	1 51	0.00	0.00	0.01	0.02	0.00	0.00	DMI117	DHOZ	0.05	DHOID C		DHOI
	DMIT1 9	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0 14	DMIT 0	0 11 DM	14 0 97	DM	122
	DMIT1 0	0.50	0.00	0.00	0.00	0.03	0.00	0.00	0.02	DMII2	1 39 DM	10 0.51	DM	114
	DMII20	0.55	0.00	0.00	0.01	0.07	0.00	0.00	0.02	DMIT	1.50 DH	DMI12 0	64	DMIT
	DMU21	0.52	0.00	0.00	0.00	0.11	0.00	0.00	0.10	2 ODMU1	0.08	DMU2 0	0 52	DMUI
	DMU22	0.74	0.00	0.00	0.00	0.02	0.00	0.00	0.		0.24	CO DMUI	0.55	DHUI
	DMIT22	2.75	0.00	0.00	0.00	0.00	0.00	0.00	0.	99 DMU	10 0.	01 DMT	. /	0
	DMIT24	2 20	0.00	0.00	0.23	0.00	0.00	0.00	U. DN	1124	.01 0.	OI DHO		0.
	DMU25	2.30	0.00	0.00	0.00	0.00	0.00	0.00	Dr	22 TM			. 11	DMILA
	DMI126	0.03	0.00	0.00	0.20	0.00	0.15	0.00	0.	01 DM	117 0.	93 DMU10	04	DMUST
10	File E	Edit Search	1 Windows	Utilities	Model L	ibraries Help	0.00	0.00	0.	pi bi		.55 01010		
Ø	<u>ə 8</u>	Sel Se	8		-	(a) 🚑 🖿								-
-12	akheli ams		let 1											_
-	dia ioli. ginis		dakhali let	roshd let	aupoff									
	DMITOC	0.05	dakheli.lst	roshd.lst	supeff	0.00		0.00	0.0	DMU2	0.02	DMII 0	1 DM	107
	DMU26	0.35	dakheli.lst	roshd.lst	supeff	0.00	0.06	0.00	0.0	L DMU7	0.93	DMU10.04	4 DM	U37 ·
	DMU26 DMU27	0.35	0.00 0.00	0.00 0.00	supeff 0.23 0.00	0.00	0.06	0.00	0.0:	L DMU7 3 DMU1	0.93	DMU10.04	A DM DMU	U37 . 10
	DMU26 DMU27 DMU28	0.35 0.89 0.40	0.00 0.00 0.00 0.00	roshd.lst 0.00 0.00 0.00	supeff 0.23 0.00 0.17	0.00 0.00 0.04	0.06 0.00 0.00	0.00 0.00 0.00	0.0:	L DMU7 B DMU1 5 DMU2	0.93 0.15 0.64	DMU10.04 DMU0.88 DMU 0.48	4 DM DMU 8 DM	U37 - 10 U14
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0	0.35 0.89 0.40 0.29	0.00 0.00 0.00 0.00 0.00	roshd.lst 0.00 0.00 0.00 0.00	supeff 0.23 0.00 0.17 0.00	0.00 0.00 0.04 0.06 0.00	0.06 0.00 0.00 0.00	0.00 0.00 0.00 0.02	0.0:	L DMU7 3 DMU1 5 DMU2 7 DMU10	0.93 0.15 0.64 0.14	DMU10.04 DMU0.88 DMU 0.48 DMU14 0	4 DM DMU 3 DM .60 D	U37 . 10 U14 MU22
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1	0.35 0.89 0.40 0.29 0.84 0.84	0.00 0.00 0.00 0.00 0.00 0.00	roshd.lst 0.00 0.00 0.00 0.00 0.00	supeff 0.23 0.00 0.17 0.00 0.00	0.00 0.00 0.04 0.06 0.00	0.06 0.00 0.00 0.00 0.06	0.00 0.00 0.00 0.02 0.00	0.0: 0.20 0.0: 0.4 0.2	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU1	0.93 0.15 0.64 0.14 0.33	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU14 0	4 DM DMU 3 DM .60 D 0.77DM	U37 / 10 U14 MU22 U22
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 1	0.35 0.89 0.40 0.29 0.84 0.47 0.23	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.00 0.06 0.00	0.06 0.00 0.00 0.00 0.06 0.00	0.00 0.00 0.00 0.02 0.00 0.00 0.00	0.0: 0.2: 0.0: 0.4 0.2: 0.0:	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 3 DMU1 9 DMU10	0.93 0.15 0.64 0.14 0.33 0.08	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU10 (DMU10 (DMU2 0.3 DMU140 1	4 DM DMU 3 DM .60 D 0.77DM 57 D	U37 / 10 U14 MU22 U22 MU10
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 2	5 0.35 0.89 0.40 0.29 0.84 0.47 0.23	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00	0.00 0.04 0.04 0.06 0.00 0.06 0.01 0.00	0.06 0.00 0.00 0.06 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00	0.0: 0.2: 0.4 0.2 0.2 0.0 0.0	L DMU7 B DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU1 9 DMU10 3	0.93 0.15 0.64 0.14 0.33 0.08 0.05	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU14 0 DMU10 0 DMU2 0.3 DMU140.3	4 DM DMU 3 DM .60 D 0.77DM 57 D 10 DM	U37 10 U14 MU22 U22 MU10 U22
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 3	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1 0.47 2 0.23 8 1.62 4 0.46	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.04 0.06 0.06 0.06 0.01 0.01 0.00	0.06 0.00 0.00 0.06 0.00 0.00 0.00	0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00	0.0: 0.2: 0.4: 0.2: 0.2: 0.2: 0.0: 0.9: DMU3: 0.1:	L DMU7 8 DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU1 9 DMU10 8 5 DMU1	0.93 0.15 0.64 0.14 0.33 0.08 0.05	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU14 0 DMU10 (DMU2 0.5 DMU140.2	4 DM DMU 3 DM .60 D .77DM 57 D 10 DM	U37 10 U14 MU22 U22 MU10 U22 U10
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 4 DMU3 5	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1 0.47 2 0.23 8 1.62 4 0.46 5 1.22	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.04 0.06 0.06 0.06 0.06 0.01 0.00 0.10 0.10	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.02 0.03 0.4 0.2 0.0 0.0 0.9 DMU3 0.1	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU1 3 DMU1 3 DMU10 3 DMU1 3 DMU1	0.93 0.15 0.64 0.14 0.33 0.08 0.05	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU14 0 DMU10 0 DMU2 0.3 DMU140.3	4 DM DMU 3 DM .60 D .77DM 57 D 10 DM .96 DM	U37 10 U14 MU22 U22 MU10 U22 U10
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 4 DMU3 5 DMU3 5	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1 0.47 2 0.23 8 1.62 8 0.46 6 1.22 5 0.44	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.00 0.06 0.01 0.00 0.10 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.0: 0.2: 0.4 0.2: 0.0: 0.9: DMU3: 0.1: DMU3: 0.0:	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU1 3 DMU1 3 DMU1 3 DMU1 35 2 DMU2	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08	DMU10.04 DMU0.88 DMU 0.44 DMU14 00 DMU14 00 DMU10 01 DMU140.2 DMU140.2	4 DM DMU 3 DM .60 D 0.77DM 57 D 10 DM .96 DM 0.04 D	U37 / 10 U14 MU22 U22 MU10 U22 U10 U10
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 4 DMU3 5 DMU3 6 DMU3 6 DMU3 7	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1 0.47 2 0.23 8 1.62 4 0.46 5 1.22 5 0.44 7 1.03	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.06 0.01 0.00 0.10 0.00 0.00 0.00	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.02 0.21 0.04 0.22 0.22 0.22 0.22 0.01 0.92 DMU3 0.11 DMU3 0.02 DMU3	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 3 DMU1 9 DMU10 3 5 DMU1 3 5 DMU1 2 2 2 2 2 2 2 2 2 2 2 2 2	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.08	DMU10.04 DMU0.88 DMU 0.44 DMU14 00 DMU10 00 DMU10 00 DMU140.2 DMU140.2 DMU140.2	4 DM DMU 3 DMU 3 DM 3 DM 3 DM 57 D 10 DM 57 D 10 DM .96 DM 0.04 D	U37 / 10 U14 MU22 U22 MU10 U22 U10 MU33
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 4 DMU3 5 DMU3 5 DMU3 7 DMU3 7 DMU3 8	5 0.35 7 0.89 8 0.40 9 0.84 1 0.47 2 0.23 8 1.62 4 0.46 5 1.22 5 0.44 7 1.03 8 0.63	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.04 0.06 0.06 0.01 0.06 0.01 0.00 0.10 0.00 0.0	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.02 0.21 0.4 0.24 0.24 0.24 0.24 0.24 DMU3 0.11 DMU3 0.01 DMU3 0.01 DMU3	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU1 9 DMU10 3 5 DMU1 35 2 DMU2 7 4 DMU2	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24	DMU10.04 DMU0.88 DMU 0.48 DMU14 0 DMU10 0 DMU10 0 DMU10 0 DMU14 0 DMU14 0 DMU10 0 DMU10 0	4 DM DMU 3 DMU 3 DM 3 DM 3 DM 57 D 10 DM 57 D 10 DM .96 DM 0.04 D	U37 . 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37
	DMU2 6 DMU2 7 DMU2 8 DMU2 9 DMU3 0 DMU3 1 DMU3 2 DMU3 3 DMU3 4 DMU3 6 DMU3 6 DMU3 6 DMU3 6 DMU3 8 DMU3 8	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1.023 8 1.62 4 0.46 5 1.22 5 0.44 7 1.03 8 0.63	dakheli.lst 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	roshd.lst 0.00	supeff 0.23 0.00 0.17 0.000 0.00 0.00 0.00 0.00 0.0	0.00 0.04 0.06 0.06 0.01 0.00 0.10 0.00 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.0: 0.2: 0.4: 0.4: 0.9: DMU3: 0.1: DMU3: 0.0: DMU3: 0.0: 0.9: 0.9: 0.9:	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU10 3 5 DMU1 85 2 DMU2 7 4 DMU2 0 DMU10	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.24 0.47	DMU10.0 DMU0.88 DMU 0.44 DMU14 0 DMU10 0 DMU10 0 DMU2 0.3 DMU140.1 DMU2 0 DMU2 0 DMU10 0 DMU10 0 DMU10	4 DM DMU 3 DM .60 D 0.77DM 57 D 10 DM .96 DM 0.04 D 0.04D	U37 . 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU32 DMU33 DMU33 DMU34 DMU35 DMU36 DMU37 DMU38 DMU38 DMU39 DMU39 DMU39 DMU39	5 0.35 7 0.89 8 0.40 0.29 0 0.84 1.023 3 1.62 0.465 1.225 0.447 7 1.03 8 0.63 0.68 0 0.68 0 0.57 1.023 1.	dakhei.lst 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	roshd.lst 0.000	supeff 0.23 0.000 0.17 0.00 0.00 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.024	0.00 0.00 0.04 0.06 0.00 0.00 0.00 0.10 0.00 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.0: 0.2: 0.2: 0.2: 0.2: 0.2: 0.1: 0.9: DMU3: 0.1: DMU3: 0.0: 0.9: 0.0: 0.9: 0.0: 0.9: 0.0: 0.9: 0.9	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 3 DMU10 3 5 DMU1 3 5 DMU2 7 DMU2 0 DMU2 0 DMU2	0.93 0.15 0.64 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91	DMU10.04 DMU0.88 DMU 0.48 DMU10 0 DMU10 0 DMU2 0.3 DMU14 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10	4 DM DMU 3 DM .60 D 0.77DM 57 D 10 DM .96 DM 0.04 D 0.04D 0.05D	U37 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37 MU37
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU32 DMU33 DMU33 DMU33 DMU33 DMU35 DMU36 DMU39 DMU39 DMU39 DMU39 DMU30 DMU30 DMU30	5 0.35 7 0.89 0 0.40 0 0.29 0 0.84 0 0.29 0 0.84 1 0.29 0 0.84 1 0.29 0 0.33 1 0.62 0 0.47 1 0.33 0 0.47 1 0.29 0 0.40 0 0.47 1 0.29 0 0.46 1 0.62 0 0.46 0 0.68 0 0.68 0 0.67 0 0.67	dakheilst 0.000 0.00	roshd.lst 0.000	supeff 0.23 0.000 0.17 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.04 0.06 0.00 0.06 0.01 0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.0: 0.2: 0.4: 0.2: 0.2: 0.2: 0.2: 0.0: 0.9: 0.0: 0.0: 0.0: 0.0: 0.0: 0.0	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU10 5 DMU10 5 DMU10 7 4 DMU2 7 4 DMU2 7 DMU20 7 DMU20 3 DMU10 9 DMU10 9 DMU10 9 DMU10 9 DMU20 9 DMU10 9	0.93 0.15 0.64 0.33 0.08 0.05 0.08 0.24 0.24 0.47 0.15 0.91 0.06	DMU10.00 DMU0.88 DMU 0.44 DMU14 0 DMU10 0 DMU10 0 DMU140.1 DMU140.1 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU10 DMU10 DMU10 DMU10	4 DM DMU 3 DMU 3 DM 50 D 0.77DM 57 D 10 DM 0.04 D 0.04 D 0.04D 0.05D 0.69D	U37 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37 MU37 MU14 MU10
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU31 DMU32 DMU35 DMU36 DMU36 DMU36 DMU37 DMU38 DMU39 DMU40 DMU41 DMU42	5 0.35 5 0.35 7 0.89 0.40 0.29 0.84 0.47 1.023 3 1.62 4 0.43 1.62 5 0.44 1.22 5 0.44 7 1.03 8 0.68 0 0.37 1.032 0 0.87 1.032 0 0.84 1.032 0 0.85 1.032	dakheli.tst 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.04 0.06 0.00 0.06 0.01 0.00 0.10 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00	0.0: 0.2: 0.0: 0.2: 0.2: 0.2: 0.0: 0.9: DMU3: 0.0: DMU3: 0.0: 0.0: 0.0: 0.0: 0.0: 0.0: 0.0: 0.	L DMU7 3 DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU1 9 DMU10 3 5 5 DMU2 7 4 DMU2 7 4 DMU2 9 DMU2 0 DMU10 7 DMU2 9 DMU20 9	0.93 0.15 0.64 0.14 0.33 0.05 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.31	DMU10.0 DMU0.88 DMU 0.48 DMU14 0 DMU14 0 DMU2 0.3 DMU140.3 DMU140.3 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU17 DMU10 DMU2	4 DM DMU 3 DMU 3 DM 50 D 0.77DM 57 D 10 DM .96 DM 0.04 D 0.04D 0.04D 0.05D 0.05D	U37 / 10 U14 MU22 U22 U10 MU33 MU37 MU37 MU14 MU14 MU14
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU31 DMU31 DMU32 DMU34 DMU35 DMU36 DMU37 DMU36 DMU37 DMU38 DMU39 DMU40 DMU41 DMU41 DMU43	5 0.35 5 0.35 7 0.89 0.40 0.29 0.84 0.40 0.23 1.62 5 0.44 7 1.03 8 0.63 9 0.64 9 0.63 9 0.64 9 0.63 9 0.63 9 0.64 9 0.63 9 0.63 9 0.64 9 0.63 9 0.63 9 0.64 9 0.63 9 0.64 9	dakheli.tst 0.00 0.00 0.00 0.00 0.00 0.00 0.00	noshd.lst 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.01 0.00 0.00 0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00	0.0.0 0.21 0.9 0.4 0.9 DMU3 0.0.9 DMU3 0.0.9 DMU3 0.0.0 DMU3 0.0.0 DMU3 0.0.00 0.0.00 0.0.00 0.0.000000	L DMU7 S DMU1 5 DMU2 7 DMU10 4 DMU7 8 DMU10 3 DMU10 5 DMU10 7 DMU20 7 DMU20 7 DMU20 8 DMU10 9 DMU10 9 DMU10 9 DMU10	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.91 0.06	DMU10.00 DMU0.88 DMU0.88 DMU0.84 DMU140.1 DMU10.01 DMU0.01 DMU0.01 DMU10 DMU10 DMU10 DMU10 DMU10 DMU10 DMU10 DMU10 DMU22 DMU22 DMU22 DMU22 DMU22	4 DM DMU 3 DM .60 D 0.77 DM 57 D 10 DM .96 DM 0.04 D 0.04 D 0.05D 0.05D 0.05D 1.08D	U37 . 10 U14 MU22 MU22 MU10 U22 MU10 MU33 MU37 MU14 MU10 MU24 MU10
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU31 DMU31 DMU35 DMU34 DMU35 DMU36 DMU36 DMU37 DMU36 DMU37 DMU38 DMU41 DMU41 DMU42 DMU44	5 0.35 7 0.89 8 0.40 9 0.29 9 0.84 1.023 8 1.625 1.225 0.447 1.033 8 0.633 9 0.633 9 0.622 1.0522 1.052 1.0522	dakheli lat 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	noshd.lst 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.00 0.06 0.01 0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00		0.0.0 0.2 0.00 0.4 0.2 0.0 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	L DMU7 3 DMU1 3 DMU1 4 DMU7 9 DMU10 3 DMU10 3 DMU10 3 DMU10 3 DMU10 4 DMU20 3 DMU10 9 DMU20 3 DMU10 9 DMU20 3 DMU10 9 DMU20 3 DMU10 9 DMU20 3 DMU10 9 DMU20 1 DMU20	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.31 0.07 0.06	DMU10.00 DMU0.88 DMU0.88 DMU0.40 DMU14 0 DMU12 0.1 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU10 DMU10 DMU10 DMU10 DMU22 DMU22 DMU22	4 DM DMU 3 DM 60 D 0.77 DM 57 D 10 DM .96 DM 0.04 D 0.04 D 0.05D 0.05D 0.05D 1.08D 0.05D	U37 . 10 U14 MU22 U22 MU10 U22 MU10 MU33 MU37 MU14 MU10 MU24 MU24 MU245
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU31 DMU32 DMU33 DMU34 DMU35 DMU36 DMU36 DMU37 DMU38 DMU39 DMU40 DMU44 DMU42 DMU44 DMU45	5 0.35 7 0.89 8 0.40 9 0.29 0.84 1.62 1.62 0.44 1.22 0.46 1.22 0.46 0.46 0.46 0.46 0.46 0.46 0.46 0.46 0.46 0.46 0.46 0.47 1.22 0.44 0.46 0.46 0.47 0.47 0.23 0.46 0.47 0.47 0.47 0.47 0.47 0.46 0.46 0.47 0.47 0.46 0.46 0.47 0.46 0.46 0.47 0.46 0.45	dakheli lat 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	coshd.lst 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.44 0.00 0.00	0.00 0.00 0.04 0.06 0.06 0.01 0.00 0.10 0.00 0.00 0.00	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00		0.0 0.2 0.4 0.2 0.0 0.9 0.1 DMU3 0.0 0.0 DMU3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 1 0.0 0.0	L DMU7 B DMU1 5 DMU2 6 DMU7 8 DMU7 8 DMU7 8 DMU1 5 DMU2 7 DMU2 2 DMU2 7 DMU2 8 DMU7 8 DMU7 9 DMU10 8 DMU10 15	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.31 0.06	DMU10.00 DMU0.88 DMU 0.44 DMU14 0 DMU14 0 DMU2 0.3 DMU10.0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU10 DMU10 DMU10 DMU22 DMU22	4 DM DMU 8 DM 60 D 0.77DM 57 D 10 DM .96 DM 0.04 D 0.04D 0.05D 0.69D 0.05D 1.08D 0.00D	U37 / 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37 MU37 MU14 MU10 MU24
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU30 DMU32 DMU32 DMU33 DMU36 DMU36 DMU36 DMU36 DMU37 DMU36 DMU37 DMU36 DMU37 DMU46 DMU44 DMU45 DMU46 DMU46	5 0.35 5 0.89 8 0.400 9 0.29 9 0.84 1 0.47 2 0.23 8 1.622 8 0.46 5 1.622 8 0.46 9 0.84 1 0.33 8 0.63 9 0.64 9 0.63 9 0.63 9 0.64 9 0.63 9 0.63 9 0.64 9 0.63 9 0.64 9 0.64 9 0.63 9 0.64 9 0.65 9 0.45 9 0.45 9 0.45 9 0.45 9 0.50 9 0	dakheli lat 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	oshd.lst 0.00	supeff 0.23 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.44 0.00 0.00 0.00	0.00 0.00 0.04 0.06 0.00 0.06 0.01 0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00		0.00 0.22 0.01 0.44 0.22 0.01 0.99 0.02 0.02 0.02 0.02 0.02 0.02 0.02	L DMU7 3 DMU1 5 DMU2 6 DMU2 7 DMU1 8 DMU1 9 DMU10 3 5 2 DMU2 7 DMU2 7 DMU2 9 DMU2 1 DMU2 3 DMU1 9 DMU10 3 DMU1 4 DMU10 15	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.31 0.06	DMU10.00 DMU0.82 DMU0.44 DMU14 0 DMU14 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU27 DMU22 DMU22 DMU22 DMU22	4 DM DMU 3 DM 50 DM 57 DD 57 D 10 DM 57 D 10 DM 0.04 D 0.04 D 0.04D 0.05D 0.05D 0.05D 1.08D 0.00D	U37 / 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37 MU37 MU37 MU14 MU10 MU24 MU10 MU24
	DMU26 DMU27 DMU28 DMU29 DMU30 DMU30 DMU31 DMU32 DMU33 DMU34 DMU35 DMU36 DMU37 DMU36 DMU37 DMU38 DMU36 DMU37 DMU46 DMU42 DMU45 DMU46 DMU47	5 0.35 6 0.35 7 0.89 0.29 0.23 1.62 0.23 1.62 0.23 1.62 0.24 0.77 0.23 1.62 0.24 0.33 0.63 0.68 0.37 0.68 0.45 0.122 0.123 0.18 0.45 0.50 1.73 1.73 1.21 0.50 0.50	dakheli lat 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.00000 0.00000 0.0000000 0.00000000	coshd.lst 0.00	supeff 0.23 0.00 0.17 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.44 0.000 0.000 0.000 0.42	0.00 0.00 0.04 0.06 0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00		0.0 0.2 0.4 0.2 0.0 0.9 0.1 DMU3 0.0 0.1 DMU3 0.0 0.0 0.0 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.0	L DMU7 3 DMU1 5 DMU2 5 DMU2 7 DMU10 8 DMU1 9 DMU10 3 DMU1 9 DMU2 7 A 1 DMU2 9 DMU2	0.93 0.15 0.64 0.14 0.33 0.08 0.05 0.08 0.24 0.47 0.15 0.91 0.06 1.31 0.06 1.47	DMU10.00 DMU0.88 DMU 0.41 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 0 DMU10 DMU22 DMU22 DMU22 DMU22 DMU22	4 DM DMU 3 DM 50 DM 57 DD 57 DD 57 D 10 DM 0.04 D 0.04 D 0.05D 0.05D 0.05D 1.08D 0.05D 0.05D	U37 / 10 U14 MU22 U22 MU10 U22 U10 MU33 MU37 MU14 MU10 MU14 MU10 MU24

Based on the table, the technical efficiency score of the branch of "Khwaja Abdullah Ansari" in learning and growth perspective is 0.29. In fact, the activity of the branch in the field of training and attracting innovation to

create more value for customers and continuously improving the operational efficiency has been inefficient toward other branches.

The amounts of shortage in output to the amount 0.06 in the employees' training courses and 0.02 in the number of notes receivable toward the potential of the branch is the reason of inefficiency in mentioned branch. In fact, with the same amount of investment in the sources it can have more output and output. As described, DEA models allow the model units to be determined. For example, reference units of Pasdaran, Soheil, Mother square have been introduced as a model unit for the branch of Khwaja Abdullah Ansari. The

weight of reference branch λ is the coefficient which is given in table and indicates the participation rate of the reference branches in the assessment of inefficient branches. Finally, with the composition of mentioned reference units, a virtual unit will be achieved as follows:

$$0.47\begin{bmatrix} 0.1\\ 0.021 \end{bmatrix} + 0.14\begin{bmatrix} 0.1\\ 0.1 \end{bmatrix} + 0.6\begin{bmatrix} 0.11\\ 0.01 \end{bmatrix} = \begin{bmatrix} 0.12\\ 0.02 \end{bmatrix}$$

As can be seen, the inputs of virtual unit is equal to $\begin{bmatrix} 0.12\\ 0.02 \end{bmatrix}$, while the real input of the branch of Khwaja

Abdullah Ansari is $\begin{bmatrix} 0.43\\0.1 \end{bmatrix}$. According to the results, Table 2.4.1.1 shows the surplus amounts of use in

resources related to the model of enveloping input-oriented super-efficient. The ranking of efficiency units for learning and growth perspective is as follows:

Table 5:	The ranking	of efficiency	y units for	learning	and g	growth	perspective
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Efficiency Score	Branch Name	Unit
2.75	Mother Square	22
2.30	Valiasr Abshar	24
1.89	Velenjak	7
1.73	Park St.	45
1.57	Pasdaran	10
1.51	Seyyed Jamal Al-din Asad Abadi St.	17
1.38	Anahita	1
1.22	Soheil	14
1.21	Sheikh Bahaei St.	46
1.03	Moghaddas Ardebili St.	37

III. Conclusion

The main problem of present research is to select the appropriate indicators for DEA technique and measure the efficiency of banks, not only from financial aspects, but also from other perspectives as well. That the model BSC was used to moderate this challenge in order to measure the technical efficiency of banks. On the other, traditional models of DEA technique are not capable to announce the score of efficient units more than one. Super efficient models of DEA technique were used to mitigate this challenge which they are capable to announce the efficiency score and rank the efficient units simultaneously. So, we measured the technical efficiency of 48 top and grade-one Melli bank branches in northern Tehran by the model of return in constant scale of enveloping input-oriented super-sufficient in four perspective of DEA model. The results showed that average efficiency rate from four perspectives: financial, customer, internal process and learning and growth of BSC model is 0.68, 0.63, 0.44, 0.65, respectively, and in total, the average efficiency of branches is 0.6 in this year and it indicates that the most major alignment with macro- strategies of branches is in the financial perspective. Also, Anahita branch was introduced as the most efficient unit from each four perspectives of the BSC model in compared to the other branches. After determining the efficient units from every 4 aspects of balanced scored card, model units were introduced. Given the research aims at analyzing, the results of Zafar St. branch showed that based on the results of technical efficiency score the financial is 1.21, customer 0.61, internal process 0.36, and growing and learning 0.5. These scores for this company indicate the local efficiency of the branch during the provision of service. Because this branch has taken steps in order to profitability and maintain shareholder value by adopting short-term strategies and due to the lack of attention to marketing issues to attract customers, use of advanced technologies in the internal process perspective, also due to the lack of adequate attention to the part of human resources to enhance the employees' skills, are factors that indicates the

Qualitative and quantitative assessment of selected Melli bank branches in northern Tehran by using

short-term profitability of the branch, that finally model units were also determined for each perspective. Finally, banking industry is considered as strategic industry, during the modeling according to calculations carried out for the final decision, the opinions of bank professionals and experts should be used for appropriate allocation of resources.

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