

## Identifying and Ranking the Factors Affecting the Financial Resource Providing Case study: Energy and oil industry providing projects

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### ABSTRACT

This research is accomplished by identifying and ranking the factors affecting the financial resource providing in the energy and oil industry projects. The research is practical and inductive- deductive. The statistical populations of the research are in one hand, the investment companies and in the other hand, the practitioners of the oil industry. The questionnaire is used to collect data. The student t-test, AHP and matrix of the marital comparisons are used to analyze data. The results show that every four components of the financial resource providing according to utilitarianism, the incorporative and the risk management, the debt (borrowing) financial providing and the foreign direct investment are the factors affecting the financial providing. The test results of the index ranking by using Expert Choice software show that the debt (borrowing) financial providing index has the greatest effect and the highest rank among the leverage indices of the expert forces in the active complexes in the oil field.

**KEY WORDS:** Energy industry plans, budget, project, oil industry.

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### INTRODUCTION

Choosing the most appropriate method to perform the energy industry plans is always the most important worries and anxieties of the governments especially the developing governments about the social or economic great and sensitive projects. The necessary executive budget and financial providing method to perform the energy industry projects and to exploit the products and its resulted service in the present oil is one of the most important challenges with that the oil bearing countries have encountered. Nowadays, the financial providing of the projects is not just for investing the investment goods but is for the diverse and different affairs in the different markets such as airports and road duty oil upper sections. One of the main issues in the oil discussion context is the required capital providing for the projects.

In the gas and oil section, supporting the governments and the private companies for investing and managing and declining the project risks is essential. To find a solution for providing necessary financial resources is the primary processes for assuring to perform it and it has to notice all cases and the desires of the various sections involved in the project such as the project host country, the industry related to the project, contractors, buyers, providers, lender banks, the problem of the risks and generally all sections involved in the project to choose the proper method of the financial providing in the project feasibility study level and then to choose the proper method regarding the priority and importance of each of them. In early 1990, in order to courage the private section to invest in the oil projects, many governments restrict their interference in the oil section and reduce the financial providing of the projects in this part of the country budget setting. Therefore, the international oil companies were again the most important investment resource in this field and undertake to perform the projects by incorporating a lot of investors. Thus, the financial providing of the energy field projects is converted to the complicated issue and has involved the huge part of the private and public investors and the financial providing institutions (Razavi and Ghahreman pour, 2011).

In fact, by the financial providing methods, the transmission(BOT) and exploitation and construct contracts, the financial providing, construct and equipment and good providing, engineering contracts (EPCF) and the civil incorporative or joint venture (JV) are methods that can operate these contracts by cooperating the public section and the foreign investor or even by corporating the public section with the private section in the financial providing and performing of the projects in which this research is attempted to study completely these contracts after scanning three first methods. (Ghasemi, 2004).

The gas and oil upper projects need a large amount of investment. The gas and oil large companies use the various methods for the financial providing of the charge of the projects that three structured, projective, corporative financial providing methods are the conventional methods. In Iran, the corporative providing method is used more than all methods and the oil companies provide their required resources from their budget or by the commercial paper or the bank facilities.

The financial limited resources and the insufficient attractiveness of the present defined instruments do not adequate for the investment new requirements of the upper projects to receive the perspective 1982.

Thus, designing the new and attractive instruments are mattered more than ever by observing the sovereignty principles to perform the upper projects. The great importance of gas and oil in Iran's economy is not converted to anyone. And for the importance of this section in the line with the impessure on Iran nation and government, applying the sanction in the gas and oil section is the priorities of the adversary countries and the foreign oil large companies are prohibited to act in this section. Regardless the required technical knowledge discussion and the technical knowledge purchase necessity and finally the technology transmission; the financial providing is the stimulant motor of each activity in this section.

Increasing the dimension of the investments in the gas and oil industry on the discovered new stores and increasing a number of the provider countries and their entrance to the oil markets presents the choice strong to the international companies in this field and they simply select the countries for the activity which suggest them a better condition and it causes to start the competition for investing the oil companies. Thus, the gas and oil producer countries gradually follow the other procedures for providing the capital and the oil and financial resources by performing and holding the private or public tenders and forming several congress and it increases to recognize more the investment proper methods in the gas and oil industry (Ghasemi, 2004).

Due to the specific situation of the developing countries and the financial crisis in these countries, it is not possible to provide easily the required capital to perform the great projects. Therefore, to choose the proper financial providing method is an important issue about the projects. The governmental principals notice the financial providing issue in many projects because of the problems such as a large amount of the required capital, the project high sensitive about the security, economic, policy problems, the foreigner presence disinclination and their investment. The required fund can be provided by supporting and governmental credits in several projects, but presenting the foreign investment and using facilities of the banks and the foreign institutions are an essential requirement to develop the infrastructures in the required infrastructure and important projects like the petrochemical, gas and oil projects and many other industries. Thinking about a solution to provide the project required financial resources is the first level to confine in performing the project. To choose the proper method of the financial providing in the project feasibility study level should be noticed to all cases and the desires of the different parts involved in the project from the project host country, the industry related to the project, contractors, the buyers, the providers, the lender banks, the problem of the risks and generally all parts involved in the project and then to choose the proper method regarding the priority and importance of each. Moreover, it should be noticed that the used structure to the project financial providing in a country may not be effective because of the different rules, while it is effectively used in another country. The important point is to choose correctly the financial providing method due to the condition of each project and the project host country. Therefore, performing of this research and the same researches can certainly be had the useful results in the scientific and practical scopes and since these concepts have completely less considered, the appropriate and comprehensive results will be extracted.

Najarzadeh and colleagues (2011) have written a paper named "ranking the countries of the Islamic conference organization member based on the factors affecting the foreign direct investment". The results obtained ranking show that Malaysia (because of the high economic growth and also performing the commercial reallocation programs during the last years, the low tariff rates and the exit and entrance reallocation policy of the capitals in this country and ...) has the best situation in the foreign investment attraction and Iran Islamic Republic Country is thirty-fifth rank among the studied 43 countries of Islamic conference member.

Davoodi and colleagues (2014) have also written a paper entitled "recognizing the factors affecting the foreign direct investment attraction in the Iran economy and the 46 countries in the framework a modulation pattern". The aim of this study is to study the factors affecting the foreign direct investment attraction in 47 countries during 1995-2012. The results show that attending to the legal infrastructures, encouraging the investment of the private part, attending to the investment operation and efficiency implemented in the development, research and infrastructures, attending to the efficiency, the work force skill level and actions to increase the country political stability perhaps can lead to attract more the foreign direct investment.

Chanlai (1997) studied entitled "local determinants of the foreign direct investment in the developing countries". It studies during 8 year, 1987-1994 the 31 developing countries, the determinant factors of foreign direct investment and uses the adapted attraction model to explain the foreign direct investment course. The research results show factors such as the market size, the interior gross production growth, the master efficiency wage (MEW), remote which estimated by the relative distance from the worldwide economic center, the foreign direct investment store and opening the economic to the foreign direct investment quantity are meaningfully effective.

Asivda (2002) has written a paper named "the determinants of the foreign direct investment in the developing countries; is Africa different?" The paper explains and interprets the local determinants affecting the foreign direct investment by using the regression analysis method. The researcher studies indifference and difference between this region with the other developing countries in attracting the foreign capital in 1970-99 by using the sectorial data of 71 developing counties (which 32 countries studied are in Africa desert. In this study, the

economic opening variable, infrastructures (the number of the telephone lines in one thousand populations) and the capital return rate (which measured by the interior gross production contrary of the real capitation are considered as the factors affecting the foreign direct investment and the research results show the variables are meaningful. In addition, SSA virtual variable is also meaningful and has the negative connection with the foreign direct investment.

Oniv (2002) has accomplished a study named "analyzing the foreign direct investment flow to the developing countries; is Mena different from the other places?" and has also studied the foreign direct investment flow to less developing countries. It studies the role of the structural and economic factors on foreign direct investment flow in 1975-99 by using information of 51 countries.

**RESEARCH METHOD**

The student t test and AHP and matrix of the marital comparisons are used.

**Findings**

The student t test is used in order to identify the effective factors. Each of four financial resource providing components according to the utilitarianism, the incorporative and the risk management, the debt (borrowing) financial providing and the foreign direct investment is the factors affecting the financial providing.

**Table 1: Student t test**

	T test	Meaningful level	Result
Financial resource providing according utilitarianism	4/11	0/000	confirmation
Incorporative and risk management	4/10	0/000	confirmation
Debt(borrowing) financial providing	4/27	0/000	confirmation
Foreign direct investment	4/08	0/000	confirmation

Ranking factors by helping AHP

**Table 2: Indices criteria and sub-criteria**

variables	Indices
Financial resource providing according utilitarianism	Connection management with customer
Incorporative	Foreign direct investment relationship and the other parts
Risk management	Supporting senior management
	Understanding business from information technology
Debt(borrowing) financial providing	Increasing the efficiency resulted from the foreign direct investment in the organization
	Operating software
	Identifying capability and fostering opportunities
Foreign direct investment	Innovating in information technology
	Development and supporting

**4-Relative weight of the criteria (indices)**

The marital comparison matrix of 11 determinants is measured by using the geometrical average as the following. In this method, after forming the marital comparison matrix, first the geometrical average of each matrix lines is measured; then in the second level, the resulted vertical matrix is normalized by dividing each component on the total of the present components.

The resulted new vertical matrix is the very desired problem index weight matrix. The mathematical form of this method is observed in the following equation.

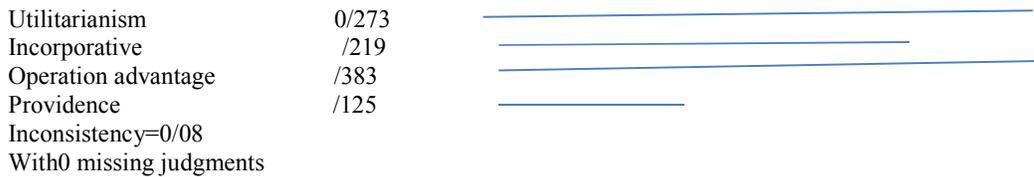
$$\begin{bmatrix} a_{11} & \dots & a_{1n} \\ \vdots & \ddots & \vdots \\ \vdots & \ddots & \vdots \\ a_{n1} & \dots & a_{nn} \end{bmatrix} \xrightarrow{1} \begin{bmatrix} \sqrt[n]{a_{11} \dots a_{1n}} \\ \vdots \\ \sqrt[n]{a_{n1} \dots a_{nn}} \end{bmatrix} = \begin{bmatrix} \pi_1 \\ \vdots \\ \pi_n \end{bmatrix} \xrightarrow{2} \begin{bmatrix} \frac{\pi_1}{\sum_{i=1}^n \pi_i} \\ \vdots \\ \frac{\pi_n}{\sum_{i=1}^n \pi_i} \end{bmatrix} = \begin{bmatrix} W_1 \\ \vdots \\ W_n \end{bmatrix}$$

In this method, 4 main criteria are identified in order to ranking the financial resource providing factors according to the utilitarianism, the incorporative and the risk management, the debt (borrowing) financial providing and the foreign direct investment that the determinant marital comparison matrix is as the following.

**Table 3: Marital comparison matrix of the research variables**

	Application oriented	Incorporative	Operation advantage	Providence
Utilitarianism		2/0	2/0	2/0
Incorporative			2/0	3/0
Operation advantage				2/0
Providence	Incon:0/08			

After making the model in the Expert Choice program and entering the marital comparisons of indices, the criteria weight obtained as shown in the following. The below figure is shown ranking the factors affecting the convergence of the financial resource providing and the risk management by helping Expert Choice software. As the following table is also observed, the debt (borrowing) financial providing factor has the greatest importance with 0/383 relative weight. The financial resource providing factor according to the utilitarianism is the next rank with 0/273 relative weight, the risk management and the incorporative factor are in the third rank, respectively with 0/219 weights and finally the foreign direct investment factor is the last rank with 0/125 relative weight. The marital comparison incompatibility rate is gained 0/08 which because it is less than 0/10, these comparisons are acceptable.



**Figure1: Ranking the identified variables**

**Table 4: Ranking the factors affecting the convergent of the financial resource providing and the risk management**

Row	Component	Weight	Rank
1	Financial resource providing according to utilitarianism	/273	2
2	Incorporative and risk management	/214	3
3	Debt (borrowing) financial providing	/383	1
4	Foreign direct investment	/125	4

**Research suggestions**

**Practical suggestions**

It can be suggested to the organizations based on the results obtained from this research, if they apply the information technology in their business, they can continually measure the convergence in regard to the model, attempt in the organization for increasing and improving the convergence level. The following cases are suggested to the organizations for increasing the convergence level:

- As most indices are observed in the incorporative dimension and the business cooperation, the companies are suggested for increasing the convergence level, each of the business parts and the information technology parts knowledge of programs, sovereignty, realm, structures, processes and investment, and the senior managers of the business and the senior managers of the information technology have cooperated in collecting them.
- Attention to users, customers and management of their relation method and also management of their demand can increase the convergence in the organization.
- The organizations can increase their organizational convergence by encouraging the operational dimension in the information technology and the business including the improvement of the quality and security, the increase of the information technology efficiency and the identity of the challenges and its risks.
- The organizations can keep to increase their convergence by providence including supporting, the identity of the capabilities, development, innovation, teaching people, protefolivi course of the information technology.
- It can be presented the following suggestions based on the results obtained from ranking:

As the operational advantage index has the greatest effect and the highest rank among the effective factors in the convergence of the financial resource providing and the risk management of the expert forces in the active complexes in the oil field, therefore, in the first level, the organization can focus on the operational advantage indices in order to improving the convergence condition of the financial resource providing and the risk management. In the next level, since the effective factors in the next rank have been in the convergence of the financial resource providing and the risk management in the view of the expert forces in the active complexes in the oil field if the financial resource providing index according to the utilitarianism, the organization can expect

the convergence improvement of the financial resource providing and the risk management of its expert forces in the next levels by focusing on this factor and its factors. In the next ranks, the effective factors are in the convergence of the financial resource providing and the risk management of the incorporative indices and the risk management of the foreign direct investment which in the next level, the organization can focus on this factor in order to prompt the staff. Nonetheless, it should be noted which considering all these factors along with each other and having the holism procedure to these factors will be had the better results.

Suggestions for the further researches

In order to develop more practical researches in the convergence field of the financial resource providing and the risk management, it can be suggested the following subjects for the further researches:

-To study the relation between the convergence of the financial resource providing and the risk management with the organizational operation.

-To apply the indices introduced in the research, for evaluating the convergence quantity of the financial resource providing and the risk management in the other private or public organizations.

## RESULTS

In the gas and oil, supporting the governments and the private companies is necessary for investing and managing and reducing the project risks.

Thinking about a solution for the required financial resource providing of the project is the prior level for the confidence of performing it and to choose the proper method of the financial providing in the project feasibility study level should be noted to all cases and desires of the various sections involved in the project including the project host country, the industry related to the project, contractors, buyers, providers, lender banks, the problem of the risks and generally all sections involved in the project and then choose an appropriate method due to the priority and importance of each. Therefore, the present research is accomplished by the aim of identifying and ranking the factors affecting the financial resource providing in the energy and oil industry projects and a questionnaire is used to collect data. Based on the student t test, every four components of the financial resource providing according to the utilitarianism, the incorporative, the risk management, the debt (borrowing) financial providing and the foreign direct investment is the factor affecting it. The ranking test results of the indices using Export Choice software show that the debt (borrowing) financial providing index has the highest rank and the greatest effect among the convergence indices of the expert forces in the active complexes of the oil field.

The result is coordinated with the results of the researches which are accomplished in the field of the convergence indices.

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