

## The Pathology of Research Management System in National Iranian Drilling Company

<sup>1</sup>Kourosh Fathi Vajargah, <sup>2</sup>Mahmmod Abolghasemi and <sup>3</sup>Naiemeh Askari

<sup>1</sup>Associate Professor of Curriculum Studies, Shahid Beheshti University (SBU), Tehran, Iran

<sup>2</sup>Assistant Professor of Educational Administration, Shahid Beheshti University (SBU), Tehran, Iran

<sup>3</sup>M.A. in Adult Education, National Iranian Drilling Company, Iran

---

**Abstract:** The present research is about pathology of research management which has been done in Iranian Drilling Company. The major objective of this study is pathology of research management; therefore, 8 specific questions were surveyed in this regard. The Population of the research included 14898 of which 375 persons were selected applying the simple sampling method. The researcher made questionnaire was used for gathering data. To analyze data and answer the research questions, the one- sample T test and independent T test were used for overall comparison of the typical views of the research based on sex and further mono-sided variance analysis were used based on education level, the type of management, job records and the category of employment.

**Key words:** Research needs assessment • Research planning • Supply of research resources • Research supervision

---

### INTRODUCTION

Industry needs to utilize the research results to improve research management [1]. Research management is one of the most efficient managements in the research organizations and institutes. A glance at the operation of big organizations indicates that the organizations highly depend on the role of research and technology to achieve their goals [2]. The various demands of the customers, the increase of the technologies developments trends, in particular, the intensive international competition have led to increase of this issue in the organization as well as society. Moreover, reduce of the products efficiency and the necessity of competence has changed the nature of research activities which requires collaboration of research and development with other departments such as sales, marketing and production departments [2].

#### Some Fundamental Concepts

**National Iranian Drilling Company (NIDC):** NIDC as one of the sub-companies of national Iranian oil company (NIOC) was established for the purpose of drilling oil wells, excavation of gas and water wells, as well as for operation, maintenance, repairs, injection of fluids and dependent technical services. Its objective is to promote

its position in drilling and the dependent technical services either in local or foreign markets. Drilling industry was commenced in Iran by drilling the first oil well in masjid-e-soleiman area which is already nearly 100 years old. Iranian National Drilling Company was established on 23rd December 1979 by the command of government of Islamic Republic of Iran [3].

**Pathology:** Study & recognition disorder root in organism [4]. The problems and the damages existing in a system are taken into account and accordingly the research unit reviews the organization for finding the major issues and the probable solutions [5].

**Research Management:** It is about organizational and incentive process for the scientists, engineers and other effective factors in research and development in a way that the active and efficient role of the process as well as development toward achieving the objectives of the founder of the institute and the society shall be assured [6].

The element "research management" is focused on management requirements with the issues preparation, execution, dissemination, publication and evaluation of scientific work [7]. In general, research management Includes the Followings.

**Identification of Research Needs Assessment:** It refers to the complicate process of identifying the potential research needs and defining the priorities among various research projects through which a defendable basis shall be provided for effective allocation of resources [5].

**Research Planning:** Research planning is a process by which the content of a research program in a short-term, medium-term and long-term horizon will be partially defined and specified [5].

**Organizing:** Organizing is a process by which distribution of tasks among individuals and working teams and coordination among them for gaining goals are carried out [8].

One of the factors of failure of research and development units is related to poor organization. Nonattendance to the specifications of these units and its difference with other ones has caused the decrease of the efficiency of these units as well as their isolation in the institutes [9].

**Research Resources:** Research resources are considered as one of the most crucial frame work of any research and the access to various resources typically essays, resource books, equipment and manpower has a substantial role in defining and executing of research designs (plans) [10].

**Research Support:** It includes financial and spiritual supports. It is considered that the execution of this design shall be hindered if it is not supported by research and senior managers and will requires costly activities. In order to gain research superiority, presence of potential researchers as well as well equipped devices and facilities is crucial, none of them will be possible unless financial supported sufficiently [11].

**Research Results:** Findings and information obtained by research are called research results [12].

**Research Supervision:** Research supervision is typical of basic preconditions for assuring of the accuracy of operation of research project [13,14]. Research supervision is intended to make sure that researchers and research institutes have served safely and properly. Control and supervision specifies that the measures and activities of the organization how much are in accordance with the objectives and predicted measures, enabling the managers to see deviation from the program in time to carry out remedial measures required changes [15].

## RESEARCH QUESTIONS

The research was about to answer to the following questions:

- What are deficiencies related to identification of research requirements in National Iranian Drilling Company (NIDC)?
- What are deficiencies related to research planning in NIDC?
- What are deficiencies related to supply of research resources in NIDC?
- What are deficiencies related to research organization in NIDC?
- What are deficiencies related to research support in NIDC?
- What are deficiencies related to research supervision procedure in NIDC?
- What are deficiencies related to research organizational culture in NIDC?
- What are deficiencies related to application procedure of the results in NIDC?

## MATERIALS AND METHODS

A survey method has been applied in this research in which first the literature of the research management has been reviewed. Gathering data was done through a research Made questionnaire. The questionnaire contains 22 questions designed based on lickert scale. Validation of instrument was approved by reviewing the content components, using expert views. Reliability of instrument has been reviewed by Cronbach alpha, 99%.

In the present study, researches Population were some of NIDC staffs. The Population of the research included 14898 of which 375 persons were selected applying the simple sampling method.

For data analysis and in order to analyze the gathered data to answer the research questions, the single sample T test and independent T test were utilized for overall comparison of the typical views of the research based on sex, further mono-sided variance analysis were used based on education level, the type of management, job records and the category of employment, in addition freedman test applied for ranking the research parameters.

## RESULTS

In this section, first the data of samples will be reviewed and then the inferential data will be discussed. The descriptive results are as below:

The Table 1 shows that the most samples are related to Bachelor and the least ones to PHD.

The Table 2 shows the most samples (13/2% of staff) are working under supervision of managing director and a few (4% of staff) are working under supervision of research and technology department. To generalize the results obtained from the samples in whole population, the research theories were tested. The results are briefly as below:

The Results of the Research Can Be Summarized as Follow:

1. What are deficiencies related to identification of research requirements in National Iranian Drilling Company (NIDC)?

Questions (1-2-3-5-6) have T values respectively, -2.902, -3.5/302, -7/722, and -7/237 which all are statistically significant in the range of  $p > 0.05$  but option 4 with  $T = 0.230$  is statistically insignificant. The average comparison indicates that the average of option 1, 2, 3, 5 and 6 are less than 3, therefore, they are not considered damages and crucial problem in NIDC considering research sample (its significance is less than the average society). However, option 4 was evaluated at a medium level. Observed T for question 1 of the research is equal with -5.025 with 370 freedom degrees in the range of 0.05, which is meaningful.

2. What are deficiencies related to research planning in NIDC?

Items (7-8-9-10-11-12-13-15) respectively with T values of -3.725, -2.557, -3.021, -4.622, -2.309, -4.230, -2.386 and -4.446 are in all cases statistically significant in  $p < 0.05$  scale, however. Item 14 with value of  $T = -0.4470$  is statistically insignificant. Comparison of the averages indicate that the average of all items is less than 3, therefore, they are considered damages or basic problem in NIDC (its significance is less than medium society). The observed T for question 2 of research is equal to -3.59 with freedom degree of 370, significant at 0.05 scale.

3. What are deficiencies related to supply of research resources in NIDC?

Items (16-17-18-19-20-22-23-24-25-26) with the values of T -2.805, -3.881, -4.588, -4.797, -5.32, -3.931, -2.57, -3.261, -5.326, -5.364 and -4.525 respectively are in all cases

statistically significant at  $p < 0.05$  scale but item 21 with value of  $T = -1.92$  is statistically insignificant. Comparison of the averages indicate that the average of items is less than 3, therefore, they are not considered any damages or basic problems in NIDC considering research sample (its significance is less than medium society). The observed T for question 3 of the research is equal with -4.88 with freedom degree 370 significant at 0.05 scale

4. What are deficiencies related to research organization in NIDC?

Items (27-28-29-30) with T value of -5.945, -4.774, -4.835 and -3.789 respectively are in all cases statistically significant at  $p < 0.05$  scale. Comparison of the averages indicate that the average of all the items is less than 3, therefore, they are not considered any damages or basic problems in NIDC (its significance is less than medium society). The observed T for question 4 of the research is equal with -5.45 with freedom degree of 370, significant at 0.05 scale.

5. What are deficiencies related to research support in NIDC?

Items (31-33-34) with value of T equal with -5.452, -3.026 and -3.604 respectively in all cases statistically are significant at  $p < 0.05$  scale. However, item 32 with a value of  $T = -0.247$  is statistically insignificant. Items are less than 3, therefore they are not considered any damages or basic problems in NIDC (its significance is less than medium society). The observed T for question 5 of the research is equal with -3.33 with freedom degree of 370, significant at 0.05 scales.

6. What are deficiencies due to research supervision procedure in NIDC?

Items (35-36-37-38-39-40-41-43-45) with T values of -4.501, -5.131, -5.357, -2.883, -4.782, -5.338, -4.063, -4.681, -4.341 respectively are in all cases statistically significant at  $p < 0.05$  scale. But item 42 with a value of  $T = -0.218$  and item 44 with  $T = -1.216$  are statistically insignificant. Comparison of the averages indicate that the average of all items are less than 3, therefore, they are not considered any damages or basic problems in NIDC (its significance is less than medium society). The observed T for question 6 of the research is equal with -4.95 with freedom degree of 370 significant at 0.05 scales.

Table 1: Distribution of research samples based on education level

Education level	Diploma	Technician	Bachelor	Master	PhD	Total
Samples	81	54	192	37	7	371
Percentage	21/8%	14/6%	51/8%	10%	1/9%	100

Table 2: Distribution of samples based on type of job

Type of management	General manager	Specific drilling company	Drilling projects management	Engineering management	Research department	Mission management 1	Mission management 2	Sea mission management	Goods supply management	Service management	Manpower management	Financial management	Drilling technical services management	Total
Samples	49	26	32	38	15	21	34	10	28	33	26	31	38	371
percentage	13/2	7	6-Aug	2-Oct	4	7-May	2-Sep	7-Feb	5-Jul	2-Jun	7	4-Aug	2-Oct	100

Table 3: T-test results for research question 1

Variable	No.	Selection AVE	Standard deviation	Comparison Average	T	DF	Sig.
1 Identification of research requirement to be carried out in the in the organization	371	2/609	4-Jan	3	-0.029535865	370	0/000
2 Recalls in the organization according to research studies & requirements	371	2/606	0/981	3	-0.009695291	370	0/000
3 Research project in accordance with requirements of the organization	371	2/711	1/047	3	-0.016556291	370	0/000
4 Faith and belief in existence and necessity of identification of requirement in the organization	371	3/013	13-Jan	3	0/230	370	0/819
5 Coordination among various research plans	371	2/849	0/969	3	-3	370	0/003
6 Emphasis on collaboration of all groups for identifying research requirements	371	2/838	1/073	3	-0.002217295	370	0/004
Question 1	371	16/73	Apr-85	18	-0.2	370	0/000

Table 4: T test results for research question 2

Blevaria T	No. DF	Selection AVE Sig	Standard deviation	Comparison Average	T	DF	Comparison Average
7 Research planning in the organization	371	2/803	1/016	3	-0.004126547	370	0/000
8 Research planning in accordance with the objective of organization	371	2/873	0/954	3	-0.003590664	370	0/011
9 Allocating budget in accordance with the research in the organization	371	2/824	1/116	3	-0.142857143	370	0/003
10 Allocating research equipment & facilities in relation to research	371	2/749	1/044	3	-0.006430868	370	0/000
11 Expert man power in accordance with research	371	2/873	1/056	3	-0.006472492	370	0/021
12 Proper administration for developing and executing the plan and optimized application	371	2/784	0/981	3	-0.017391304	370	0/000
13 Distinguishing the responsibilities and authorizations properly in research & tech	371	2/873	1/022	3	-0.005181347	370	0/018
14 Design and definition of research & technology parts properly	371	2/943	2/317	3	0	370	0/638
15 Following the project schedule time	371	Feb-76	1/039	3	-0.00896861	370	0/000
Question 2	371	25/26	Jul-68	27	-0.050847458	370	0/000

Table 5: T test results for research question 3

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
16 Enjoying know-how and research managers at management level	371	2/838	11-Jan	3	-0.002484472	370	0/005
17 Holding management training courses for managers and decision-makers	371	2/795	1/016	3	-0.003405221	370	0/000
18 Preventing loss of research resources in lack of priorities or insignificance areas	371	2/749	1/052	3	-0.006802721	370	0/000
19 Attention to Training skilled man power for research activities	371	2/719	1/125	3	-0.005018821	370	0/000
20 Research and tech staff with requirements	371	2/727	0/985	3	-0.15625	370	0/000
21 Observing project cost table in organization	371	2/903	0/973	3	-0.010869565	370	0/056
22 Enjoying human resources in accordance with the research activities in organization	371	2/779	1/082	3	-0.003222342	370	0/000
23 Considering supply of research information	371	2/867	0/989	3	-0.035087719	370	0/011
24 Existing proper financial resource in accordance with research	371	2/816	1/082	3	-0.011494253	370	0/001
25 Existing space rources in accordance with research	371	2/719	1/006	3	-0.013736264	370	0/000
26 Existing equipments in accordance with the research	371	2/762	1/009	3	-0.007619048	370	0/000
Question 3	371	30/74	9-Aug	33	-0.045454545	370	0/000

Table 6: T test results for research question 4

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
27 Organized & regular research activities	371	2/703	0/960	3	-0.005291005	370	0
28 Dividing duties and research responsibilities among staff and units	371	2/738	1/054	3	-0.005167959	370	0
29 Coordination among research dept and other departments	371	2/741	3-Jan	3	-0.004790419	370	0
30 Communication between research and production departments	371	2/805	0/984	3	-0.003802281	370	0
Question 4	371	Oct-99	Mar-54	12	-0.111111111	370	0

Table 7: T test results for research question 5

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
31 Appropriate conditions for research in organization	371	2/771	1/018	3	-0.011061947	370	0
32 Supporting participation in research plans in organization	371	Feb-97	2/313	3	0	370	0/805
33 Financial support for research plans in organization	371	Feb-83	8-Jan	3	-0.115384615	370	0/003
34 Spiritual support for the researchers in e organization	371	2/797	8-Jan	3	-0.004966887	370	0
Question 5	371	29-Nov	8-Apr	12	-0.090909091	370	0/001

Table 8: T test results for research question 6

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
35 Attention to research supervision in organization	371	2/768	0/991	3	-0.007984032	370	0/000
36 Concerning research project problems and taking action to solve them	371	2/741	0/971	3	-0.038167939	370	0/000
37 Concerning research execution problems and taking action to solve them	371	2/733	0/959	3	-0.014005602	370	0/000
38 Supervision on research to be enforceable and executive	371	2/862	0/918	3	-0.002265006	370	0/000
39 Proportionate of research project with due time	371	2/775	0/901	3	-0.00511509	370	0/000
40 Attention to continuous evaluation of research operations of departments	371	2/735	0/953	3	-0.014792899	370	0/000
41 Considering evaluation efforts of research finding of the units	371	2/789	0/996	3	-0.063492063	370	0/000
42 Continuous relation between project executive & supervisor	371	2/989	0/953	3	0/218	370	0/828
43 Enjoying remarkable supervisors for research projects	371	2/752	2-Jan	3	-0.005873715	370	0/000
44 Applying the obtained results from the supervision practically	371	2/884	1/836	3	-0.00462963	370	0/225
45 A certain & defined system for supervising on the projects	371	2/784	0/956	3	-0.011730205	370	0/000
Question 6	371	30/75	8/721	33	-0.042105263	370	0/000

Table 9: T test results for research question 7

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
46 Scientific sense in connection with the research in organization	371	2/768	1/039	3	-0.013605442	370	0/000
47 Attention to development of research culture in the organization	371	2/714	1/095	3	-0.2	370	0/000
48 Attention to research & scientific objectives of organization	371	2/814	1/005	3	-0.005338078	370	0/000
49 Consideration on admin & financial affairs more than scientific- research issues	371	3/234	1/934	3	2/335	370	0/020
50 Appreciation of successful research projects in organization	371	2/959	1/027	3	0	370	0/449
51 Enjoying creativity of experts in organization	371	2/822	1/019	3	-0.008287293	370	0/001
52 Possibility of utilization of creativity and innovation at work environment	371	2/846	0/994	3	-0.002053388	370	0/003
53 Strong relation and holding meetings among researches, policy makers, executives and users	371	Feb-63	1/042	3	-0.073170732	370	0/000
54 Close, tight and continuous relation between researchers & executives	371	Feb-76	2/358	3	-0.001042753	370	0/051
55 The extent of researches carried out with target of identification & improvement of organization culture	371	2/727	0/974	3	-0.131578947	370	0/000
56 Attention to establishment and development of research culture in organization	371	2/768	0/994	3	-0.008179959	370	0/000
57 Organization to encourage high-quality of research and development works	371	8-Feb	0/996	3	-0.003504673	370	0/000
Question 7	371	33/74	Sep-83	36	-0.097560976	370	0/000

Table 10: T test results for research question8

Variable	NO.	Selection average	Standard deviation	Comparison Average	T	DF	Sig.
58 Observation and utilization of results of research in organization	371	2/857	0/960.	3	-0.002314815	370	0/004
59 Submitting results of research to production department accurately	371	2/822	1/019	3	-0.008287293	370	0/001
60 The relation of research subject with Decision-makers needs	371	2/889	0/976	3	-0.011049724	370	0/03
61 Conception split, communication and responsibility between researchers and executives in applying results	371	6-Mar	0/960	3	1/351	370	0/177
62 Establishment of data system for using research result	371	2/765	0/992	3	-0.072727273	370	0/000
63 Availability of research findings on time in organization	371	2/735	0/978	3	-0.024875622	370	0/000
64 Flexibility of organization facing with new funding as well as changes	371	2/851	1/030	3	-0.002594034	370	0/006
65 Trust of organization on research findings	371	2/975	0/959	3	0	370	0/627
66 Necessary equipments for applying research results in organization	371	2/773	1/004	3	-0.011627907	370	0/000
67 Confidence of decision-makers on researchers organization	371	3/088	1/838	3	0/932	370	0/352
68 Explicable Regulations about necessity of consideration on research findings	371	2/859	1/024	3	-0.003154574	370	0/009
69 Emphasis on utilization of research findings relating to responsibilities of managers and decision-makers	371	2/843	0/942	3	-0.015463918	370	0/002
70 Necessity of training courses in respect of carrying out applied researches and the ways of using findings	371	2/687	1/044	3	-0.006535948	370	0/000
71 Comprehensible research findings in organization	371	2/954	0/927	3	0	370	0/342
72 Fullfillment of research results in organization	371	2/932	0/977	3	-0.00304878	370	0/185
Question 8	371	43/05	Nov-66	45	21-Mar	370	0/00

7. What are deficiencies due to research organizational culture in NIDC?

Questions (46-47-48-49-51-52-53-55-56-57) with T values of -4.294, -5.025, -3.562, 2.335, -3.362, -2.974, -6.82, -5.38, 4.489, -3.856, respectively are in all cases statistically significant at p<0.05 scale. However, items (50 and 54) with T values of -0.758 and -1.959 respectively are statistically

insignificant. Comparison of the averages indicate that the average of all items except for item 49 is less than 3, therefore, they are not considered any damages or basic problems in NIDC (its significance is less than medium society). Nevertheless, item 49 research subjects are considered the most significant. Observed T for question 7 of the research is equal with -4.41 with freedom degree of 370 significant at 0.05 scales.

8. What are deficiencies related to application procedure of the results in NIDS?

Items (58-59-60-62-63-64-66-68-69-70) with T values of -2.864, -3.362, -2.181, -4.55, -5.201, -2.771, -4.344, -2.634, -3.194, -5.765 respectively are in all cases statistically significant at  $p < 0.05$  scale, but items (61-65-67-71-72) with T values of 1.351, -0.487, 0.932, -0.952 and -1.328 are statistically insignificant. Comparison of the averages indicate that the average of all items except for item 67 are less than 3, therefore, they are not considered any damages or basic problems in NIDC (its significance is less than medium society). But item 67 decision-makers trust on researchers in the organization was evaluated medium scale. Observed T for question 8 of the research is equal with -3.21 with freedom degree of 370 meaningful at 0.05 scales.

### CONCLUSION AND DISCUSSION

Findings of this research indicate that, in general, there is a meaningful relationship among research requirement identification, research planning, supply of research resources, research organization, research support, research supervision and organizational culture, utilization of the results and research management. Concerning research management of NIDC, it can be explained as follows:

- Research and training research powerful staff is needed to be permanently emphasized, but they are often ignored, which's means that the concepts and competencies of research should be taught.
- It is proposed that the major problem in our country is the persistent public thought and disconnection of industry with the university, only by means of a few seminars or conferences, but when the matter of disconnection or two organizations or offices is brought about, these two do not have sufficient knowledge about each other, it is the case that the conditions and limitations prevent their connection with the industry does not take on this connection It seems that persuasive and supportive measures for units engaged in vast research activities will bring precious results.
- Numerous problems for industrial men such as legal and illegal claims, strict regulation most especially in export, lack of coordination among various parts and industries (e.g. insurance of import certificates for

items produced in Iran). And finally specific problems those industrial workers and managers are involved in, making the research activities as in the last priority.

- The requirements of industrial parts to be reviewed and edited and to be presented to the universities and even to the specialized groups in the universities via a powerful informative network with regulated classification.
- Instructors are required to execute applied and executive projects or at least at present conditions, execution of applied and executive projects in industry and economics would bring exclusive points.
- Skills and abilities of university members shall be continually exhibited to staff in industry and production units' managers
- Highly organized training and development system should be established in a way to raise the graduates according to Iran industries requirements, which requires merely a fundamental and long-term planning.

### REFERENCES

1. Victor, D. and Andrew, 2007. Research management in the European Res. Area. Available at: [www.earthprints.org/bitstream/2122/1756/1/29%20helly.pdf](http://www.earthprints.org/bitstream/2122/1756/1/29%20helly.pdf).
2. Atafar, A. and S. Analoyee, 2006. Research and Technology Management Organization: Danish Pazhohan Bareen Scientific Institute Publications.
3. Afshar, M., 2009. Research and Investigative Project the Field of Research & Extension and Aims and Diplomacies Compilation National Iranian drilling company: oil Industry University.
4. Fathi Vajargah, K. and S. Vahedchokdeh, 2006. The place of Citizenship Education in Hidden Curriculum: A pathological review. Quarterly J. Educational Innovations, 8(30).
5. Fathi Vajargah, K., 2009. The Place of Life Skills Education in Iranian Primary School Curricula. World Applied Sci. J., 7(4): 432-439.
6. Navaz Sharif, Mohammad, 1989. Transfer and Extend Technology Management: No. 44, Plan and Extend, Translated by Rashid Aslani, Plan and Budget Organization. Tehran.
7. Amini, S., 2003. Research Management in University Development Program. Unpublished Document. Witzenhuzen: Univeristy of Kassel.

8. Atafar, A. and N. Analoyee, 2002. Surveying Causes and Barriers of progress of Research and Development departments in organizations: paper presented at 3rd International Forum of Central Research and Development of Mines and Industries Organization.
9. Boshehree, A., 1999. Research development in industry. J. Pajoohehsh Yar, No 11.
10. Lederman, D. and S. Maloney, 2003. R and D and World Bank development. Available at: <http://ideas.repec.org/p/wbk/wbr/wps/3024.html>.
11. Jain, R.K. and H. Triandis, 2006. Research and Development Management Organization: Research and Training Institute of Defense Industries.
12. Alitabar, R., 2007. Research and Extension Dictionary: Education Monthly Publications, No 46.
13. Alaghband, A., 2004. Educational Management :Teheran: Ravan publications.
14. Fathi Vajargah, K., S. Jahani and N. Azadmanesh, 2010. Application ICTs in Teaching and Learning in Higher Education. J.Tourkish Online Educational Technologies. (TOJET), 9(1): 33-39.
15. Fathi Vajargah, K., 2006. Research needs assessment. Tehran: Ayyj Publications.