Implementation of The Project Management in Iranian Projects To Complete High-Quality Projects in A Timely Manner

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Project Management: Project Analysis, Investments, And Implementation Technologies

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Abstract

Today, in most large and small project-based organizations, senior managers, especially project managers, face many challenges in terms of resource allocation. Therefore, to reduce the cost and execution time as well as improve the quality of the project, the approach should be shifted from traditional management to scientific management to optimize the efficiency and performance of a project over its lifetime. To achieve this, an organized system for project management and planning will be needed.

This study examines whether Iranian companies are familiar with project management in terms of cost, budget, and risk management. A questionnaire was designed to investigate how project funding (initial and during a project) is funded and how they manage risks throughout the project and are distributed to companies. Another reason is the severe international sanctions that have cast a heavy shadow over the Iranian economy and, unfortunately, cannot be ignored. No matter how economically self-sufficient a country is, the need for cooperation and exchange in neighboring or non-neighboring countries cannot be ignored. Therefore, this paper firstly reviews the theoretical framework of previous research on project management in Iran. Then the research methodology and how to collect and analyze the data are considered. The following is an overview of the problems encountered in the project management process in Iran. Finally, recommendations and suggestions will be provided.

Key Words: Implementation project management, Iranian projects, Quantitative Methods, Time Management, Cost Management

Внедрение Управления Проектами В Иранских Проектах Для Своевременного Завершения Проектов Высокого Качества

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Аннотация

Сегодня топ-менеджеры, особенно директора проектов, сталкиваются с множеством проблем, когда речь идет о распределении ресурсов во многих крупных и мелких проектных организациях. Чтобы снизить стоимость и сложность выполнения задач и улучшить качество своих проектов, им надо сменить традиционные способы управления на научные. Это позволить повысить эффективность и производительность проектов в течение всего срока их службы. Поэтому для управления проектами и планирования необходима организованная система.

Настоящая статья рассматривает вопрос: знакомы ли иранские компании с современными способами управления проектами с точки зрения затрат, бюджета, и управления рисками. Анкета была разработана для исследования того, как топ-менеджеры распределяют финансирование проекта (в начале и в процессе работы) и как они управляют рисками и распределяют риски и финансы между компаниями.

К сожалению, не могут быть проигнорированы и жесткие международные санкции серьезно влияющие на иранскую экономику. Ведь, независимо от того, насколько страна экономически самостоятельна, нельзя игнорировать необходимость сотрудничества и торгового обмена с другими государствами. Поэтому в данной статье сначала рассматриваются теоретические основы предыдущих исследований об управлении проектами в Иране, а затем - метрология исследований и способов сбора и анализа данных. Далее приводится обзор проблем, возникающих в процессе управления проектами в Иране. В заключение, будут предоставлены рекомендация и предложения.

Ключевые Слова: Внедрение Управления Проектами, Иранские Проекты, Количественные Методы, Управление Временем, Управление Затратами

Introduction

In recent years, project management has been extremely examined in different field of projects. Many industries established their project management approaches to enhance performance and benefit from advantages. But still, structured approaches and methods are not commonly used, and an absence of knowledge is another issue, which must be considered to project management.

During the previous research, the main problems of the projects in Iran were investigated. The first major problem in Iran is financing during project implementation. The second major problem is that projects are not completed promptly and are scheduled in advance. Unfortunately, the lack of time management and resource allocation has made this a routine and routine process of projects in Iran. The biggest and most important is the lack of transparency in work. The next problem is the lack of financial resources and the lack of attraction of foreign investment. After the Joint Comprehensive Plan of Action (JCPOA)[1], it was clear that the Iranian economy had the potential to grow. Still, the investment environment was not ready, and neither the government nor the private sector was willing and able to partner with an international investor. Prolonged project execution time perceived poor quality of implemented projects, extremely high cost of projects compared to initial estimates, etc. can be counted as part of the country's major project problem chain.

Define and reveal the significant problem of Iranian projects in terms of financing and facing risks during the project until the projects are completed promptly. To this end, the main objectives of this research have been conducted at the level of Iranian projects in the private and governmental sector, which are known as:

- Identifying and categorizing the major and most common problems in Iranian projects,
- Evaluating how project management process is used in Iranian companies,
- Propose a theoretical framework for the development of project management implementation in these companies.

This paper attempts to study the case of companies in terms of management weaknesses in the cost and time they face. For this reason, project-level case studies have been selected so that other companies in the future can use the right model and follow the correct project management process. Management science is in the field of social sciences and humanities, and for scientific research, it uses methods like other sciences in this field. But due to some specific issues and characteristics in organization and management, it is necessary to identify all kinds of research in this area.

Literature Review

In this research, as the title implies, this paper attempts to investigate the implementation of project management in Iranian organizations. Understanding of implementation of project management is needed first to define verbal, literal, and syntactic meanings of project management. According to the Project Management Body of Knowledge (PMBOK® Guide, 2017, pp. 12-15), the project is a process with a starting and an endpoint that strives to achieve a specific goal and outcome. In each project, different people interact with each other for the same purpose, and each person has different ethical characteristics and thoughts, which will shape the culture of that project.

As Doug DeCarlo presented in Extreme project management (DeCarlo, 2004, pp. 29-35), exist another definition of Project, which is: “A project is a localized energy field comprising a set of thoughts, emotions, and interactions continually expressing themselves in physical form.” In another definition is “A project, in sum, is a process throughout which thoughts and emotions take form.” Therefore, it can be said that these people are in the project that guides the process of moving the project

[1] Comprehensive Plan of Action (JCPOA) is an agreement on the Iranian nuclear program reached in Vienna on July 14, 2015, between Iran and the P5+1 (the five permanent members of the United Nations Security Council—China, France, Russia, United Kingdom, United States—plus Germany) together with the European Union.

forward or stopping it. It is important to note that there are people and their different mindsets by project management, which takes a unified form. As (Hyttinen, 2017, pp. 14-15) in Project Management Handbook, "It is people who deliver projects, not processes or systems." In concise and straightforward language, the project means a specific time and goal.

The history of project management in the world is usually related to massive projects such as the construction of the Great Pyramid of Giza, the Great Wall of China, or the illustration of Persepolis[1] by order of Darius the Great[2]. Each of these projects is one of the largest and most complex projects in human history, built with high standard quality and the use of enormous human resources. By order of Cyrus[3], the engineers and builders of Pasargadae were obliged to write their descriptions of their work, as well as their work schedule for the next day, on tablets known as the *«Karnamak»* letter (Haj Shirmohammadi, 2014, pp. 11-16). In 1917, the *Gantt Chart* was introduced as the first idea of research in the field of project planning and scheduling. In the following in 1969, the International Project Management Institute (PMI) was established by Jim Snyder and Gordon Davis as the first official project management institute (Seymour & Hussein, 2014, pp. 235-236).

In the present study, a much more general view of the problems and challenges of project management is presented based on the questionnaire and interviews taken, i.e., a statistical method. However, research has been done in the past; they have generally been particular and limited to certain types of projects, such as manufacturing or petrochemicals. For instance, in Article Systematic Analysis of Reasons for Delays in National Projects, (Nourinia & Mokhtari, 2007, pp. 3-8), stated first the stages of the project in which the delay occurs are divided into three phases: studies, approval, and implementation, and then the reasons for the delays in the project in the middle of Lake Urmia. In the end, the legal, structural-managerial, and economic factors have been affected by the prolongation of projects and the presentation of suggestions and practical solutions to reduce the occurrence of delays in the implementation process of projects.

Methodology

According to Kothari, (Kothari, 2004, p. 8)[4] Research methodology is a way to solve the research problem systematically. It may be understood as a science of studying how research is done scientifically. In contrast, Research methods or techniques, thus, refer to the ways the researchers use in performing research operations. In this study, because the data obtained are quantitative (numbers and digits), quantitative analysis is performed on those data. Also, since the data and their measurement scale are distributed normally, a quantitative parametric test (F-test) has been used. To achieve this goal, a questionnaire[5] was designed. Another reason for using this method is the number of sample observations, which is equivalent to twenty-five in each group.

[1] Persepolis: Founded by Darius I (Darius the Great) in 518 B.C., Persepolis was the capital of the Achaemenid Empire. It was built on an immense half-artificial, half-natural terrace, where the king of kings created an impressive palace complex inspired by Mesopotamian models. The importance and quality of the monumental ruins make it a unique archaeological site (UNESCO, 1979).

[2] Darius the Great (Darius I): Darius I, commonly known as Darius the Great, was the third Persian King of Kings of the Achaemenid Empire, reigning from 522 BCE until his death in 486 BCE (Abbott, History of Darius the Great, 1878).

[3] Cyrus the Great, also known as Cyrus the Elder, was the founder of the Achaemenid Empire. Under his rule, the empire embraced all the previous civilized states of the ancient Near East, expanded vastly and eventually conquered most of Southwest Asia and much of Central Asia and the Caucasus. From the Mediterranean Sea and Hellespont in the west to the Indus River in the east, Cyrus the Great created the largest empire the world had yet seen which was transcribed onto the Cyrus Cylinder sometime between 539 and 530 BC (Abbott, Cyrus the Great, 2019).

[4] Research Methodology, Research and Techniques

[5] The questions in this questionnaire are at the end of the survey in the Appendix.

At first, the regression between these components is taken, and then the T-statistic is tested. Here is how to interpret this statute. Besides that, the ANOVA analysis of variance uses F-test to determine whether inter-laboratory variability is more considerable than intra-laboratory variability. If this ratio is large enough, it can be concluded that the average results of all laboratories are not the same.

Besides, VIF testing should also be performed. In statistics, the variance inflation factor (VIF) measures the multiple linear coefficients in ordinary least squares regression analysis. An index is introduced that indicates how much of the change in the estimated coefficients of the coefficient has increased. Multiple linear intensity can be analyzed by examining the magnitude of the VIF. If the VIF test statistic was close, it indicates that there is no correlation. As an experimental rule, the VIF value is greater than 8, and the multiple coincidences are high (note that in some cases, the number 8 is also introduced as a threshold).

To this end, three essential assumptions for future calculations are considered, which are as follows:

1- There is a connection between the **implementation of project management** and how much their project will succeed.
2- There is a connection between the **corporate team performance** and how much their project will succeed.
3- There is a connection between **Government Support** and how much their project will succeed.

Obviously, it follows from the above hypothesis that the dependent variable is success in any society. For each of these hypotheses mentioned above, the following four steps are performed:

1- Identifying variables
2- Analysis of variance (ANOVA)
3- Correlation test
4- Coefficient of significance test

For testing these hypotheses, it should be used by t-statistics. If the confidence level of the 95% statistic obtained from the test is less than t obtained from the table with the same degree of freedom, H_0 will be confirmed; otherwise, it will be rejected. In this test, the non-rejection of H_0 means that the coefficient is meaningless, and the rejection of H_0 implies that the coefficient is significant.

If H_0 is rejected, it means the regression is adequate, and the variables are correlated. On the opposite, if H_0 is not rejected, it means the regression is not appropriate, and the variables are not connected.

The rejection of H_0 depends on the Significance **F,** which should be less than a 5% significance level.

1. The number of observations on each variable;
2. Average values of variables;
3. Standard deviations;
4. Minimum and maximum values.

Variable	Obs	Mean	Std. Dev.	Min	Max
gender	25	.52	.509902	0	1
experience	25	2.28	1.021437	1	4
pmfam	25	.92	.2768875	0	1
applpm	25	3	1.154701	1	5
pmobsv	25	2.64	.9073772	1	4
pmsoftfam	25	.6	.5	0	1
ppmfam	25	.84	.3741657	0	1
applppm	25	2	1.47196	0	5
applpmtools	25	.48	.509902	0	1
success	25	3.08	1.411855	1	5
suporg	25	2.8	1.118034	1	5
annualreport	25	.8	.4082483	0	1
projectman~r	25	.64	.4898979	0	1
training	25	2.44	1.003328	1	4
transparency	25	2.32	1.029563	1	4
rdpro	25	2.84	1.067708	1	5
teamwork	25	3	1.118034	1	5
govsup	25	.52	.509902	0	1
fingovsup	25	2.2	1.258306	1	5
diffgovsup	25	1.88	1.053565	1	5

Table 1: Descriptive Statistics

Hypotheses 1

Choosing the dependent variable income or **Success**, and independent variables independently, evaluate the linear model. Check if the selected model is adequate. If the answer is no, try to assess another linear model and independent variables are:

- Factor 1 (F_1): Project Management Familiarity
- Factor 2 (F_2): Applying Project Management
- Factor 3 (F_3): Project Management Oversight
- Factor 4 (F_4): Project Management Software
- Factor 5 (F_5): Standard for Portfolio Management Familiarity
- Factor 6 (F_6): Applying Standard for Portfolio Management
- Factor 7 (F_7): Project Management Tools

According to Coefficients, it shows the organization's oversight through project management implementation in companies is not taken as a dangerous item, and they just assign a project manager and do not pay attention to how the process goes during the project. The negative number of PM Oversight (-0.071) seen in the table above indicates the fact that not only is monitoring of project management performance in companies upward but also downward. Furthermore, it can be stated, even though, according to the data obtained from the mean[1], software usage was above 50%, using the software during projects, it's not pleasant for managers and employees to use for their projects. In the case of the success index, the negative number (-0.27592) indicates that if all other factors are considered zero and ineffective, no success will be achieved.

Success = -0.275 + 0.904 (F_1) + 0.83 (F_2) - 0.071(F_3) - 0.063(F_4) - 0.457(F_5) + 0.148(F_6) + 0.721(F_7)

F-statistics: F (k-1, n-k) $_{0.05}$ = (7, 17) $_{0.05}$ = 28.54; F (cr) $_{0.05}$ <F, and Prob> F = 3.36E-08 (which is very small), that is less than 5% significance level. Therefore, the **H_0 is rejected**, and the regression **is adequate.**

[1] Table 1: Descriptive Statistics, Averages

The P-value for most of the independent variables is less than level α (0.1); therefore, the **H_0** of the equality of these coefficients to zero is **rejected**.

Since these data are extracted from the questionnaire, we use the VIF-test for greater accuracy.

```
. reg success pmfam applpm pmobsv pmsoftfam ppmfam applppm applpmtools
```

Source	SS	df	MS	Number of obs	=	25
				F(7, 17)	=	28.54
Model	44.0886685	7	6.29838122	Prob > F	=	0.0000
Residual	3.75133145	17	.220666556	R-squared	=	0.9216
				Adj R-squared	=	0.8893
Total	47.84	24	1.99333333	Root MSE	=	.46975

success	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
pmfam	.9049778	.628233	1.44	0.168	-.4204779	2.230434
applpm	.830507	.1732609	4.79	0.000	.4649585	1.196056
pmobsv	-.0717198	.1300894	-0.55	0.589	-.3461843	.2027448
pmsoftfam	-.0634351	.3565265	-0.18	0.861	-.8156403	.6887702
ppmfam	-.4575705	.3782071	-1.21	0.243	-1.255518	.3403766
applppm	.1485626	.1013333	1.47	0.161	-.065232	.3623573
applpmtools	.7217845	.2892638	2.50	0.023	.1114913	1.332078
_cons	-.2759221	.5765375	-0.48	0.638	-1.49231	.9404658

Table 2: Regression of Hypotheses 1

```
. vif
```

Variable	VIF	1/VIF
applpm	4.35	0.229713
pmsoftfam	3.46	0.289335
pmfam	3.29	0.303863
applppm	2.42	0.413265
applpmtools	2.37	0.422633
ppmfam	2.18	0.459132
pmobsv	1.52	0.659882
Mean VIF	2.80	

VIF at an acceptable level (<8) for each variable, therefore, for the linear model, there is no multicollinearity problem because of VIF < 8, and **it is acceptable.**

Table 3: VIF of Hypotheses 1

```
. pwcorr success pmfam applpm pmobsv pmsoftfam ppmfam applppm applpmtools, star(1)
```

	success	pmfam	applpm	pmobsv	pmsoft~m	ppmfam	applppm
success	1.0000						
pmfam	-0.1961	1.0000					
applpm	0.9201*	-0.2606	1.0000				
pmobsv	-0.1067	0.3781	0.0000	1.0000			
pmsoftfam	0.7555*	0.0602	0.7217*	-0.0551	1.0000		
ppmfam	-0.2114	0.6757*	-0.1929	0.1915	-0.1336	1.0000	
applppm	0.7819*	-0.1022	0.7354*	-0.1248	0.6228*	-0.0757	1.0000
applpmtools	0.7547*	-0.3069	0.6369*	-0.3314	0.6210*	-0.2359	0.5551*

	applpm~s
applpmtools	1.0000

Table 4: Correlation of Hypotheses 1

The correlation matrix shows some values close to 1*, but they are not too much, which confirms the thesis about the absence of multicollinearity.

Hypotheses 2

Choosing the dependent variable income or **Success**, and independent variables independently, evaluate the linear model. Check if the chosen model is adequate. If the answer is no, try to evaluate another linear model and independent variables are:

- Factor 1 (F_1): Support of your Organization's Manager
- Factor 2 (F_2): Annual Report
- Factor 3 (F_3): Project Manager
- Factor 4 (F_4): Trained and Mentored
- Factor 5 (F_5): Transparency & Integrative
- Factor 6 (F_6): R&D Processes
- Factor 7 (F_7): Diversity in Teamwork

The intercept of -1.55565 indicates that, if none of the other variables, such as teamwork, R&D, Annual Report, Trained and Mentored, etc., are considered during project implementation, the project will not succeed. According to Coefficients, it shows the organization's support, as mentioned in the first hypotheses through project management implementation not only does it not rise, but the number -0.0493 indicates a downward slope. It can be stated that despite the project management in executing it even in the best companies in Iran, there is no support from managers for further motivation. Furthermore, hiring a project manager, as will be explained in the interview, will not be considered necessary, and a negative number -0.0249 indicates this. The decisive point here is the low slope of these two indicators. It shows that this is improving. As will be noted below, senior managers are reluctant to fully disclose all information, including financial resources, to project managers, which contributes to the lack of transparency in projects.

```
. reg success suporg annualreport projectmanager training transparency rdpro teamwork
```

Source	SS	df	MS		
Model	39.4478841	7	5.63541201	Number of obs	= 25
Residual	8.39211593	17	.493653878	F(7, 17)	= 11.42
				Prob > F	= 0.0000
				R-squared	= 0.8246
				Adj R-squared	= 0.7523
Total	47.84	24	1.99333333	Root MSE	= .70261

success	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
suporg	-.0493072	.1798823	-0.27	0.787	-.4288257	.3302113
annualreport	.7860535	.4018583	1.96	0.067	-.0617934	1.633901
projectmanager	-.0249632	.7002093	-0.04	0.972	-1.502276	1.452349
training	.0210189	.315765	0.07	0.948	-.6451869	.6872248
transparency	.736483	.1496084	4.92	0.000	.420837	1.052129
rdpro	.4035096	.1570862	2.57	0.020	.0720867	.7349324
teamwork	.4183153	.1662421	2.52	0.022	.0675751	.7690554
_cons	-1.555646	.9454768	-1.65	0.118	-3.550428	.4391355

Table 5: Regression of Hypotheses 2

Success = - 1.555 - 0.049 (F_1) + 0.786 (F_2) - 0.024(F_3) + 0.021(F_4) + 0.736(F_5) + 0.403 (F_6) + 0.418(F_7)

F-statistics: F (k-1, n-k) $_{0.05}$ = (7, 17) $_{0.05}$ = 11.42; F (cr) $_{0.05}$ <F, and Prob> F = 2.47E-05, that is less than 5% significance level. Therefore, the **H_0 is rejected**, and the regression **is adequate.**

The P-value for more than half of the variables is less more than level α (0.1); therefore, the **H_0** of the equality of these coefficients to zero is **rejected**.

Since these data are extracted from the questionnaire, we use the VIF-test for greater accuracy.

```
. vif
```

Variable	VIF	1/VIF
projectman~r	5.72	0.174801
training	4.88	0.204926
suporg	1.97	0.508539
teamwork	1.68	0.595414
rdpro	1.37	0.731191
annualreport	1.31	0.764217
transparency	1.15	0.866949
Mean VIF	2.58	

VIF at an acceptable level (<8) for each variable; therefore, for the linear model, there **is no** multicollinearity problem.

Table 6: VIF of Hypotheses 2

```
. pwcorr success suporg annualreport projectmanager training transparency rdpro teamwork, star(1)
```

	success	suporg	annual~t	projec~r	training	transp~y	rdpro	teamwork
success	1.0000							
suporg	-0.1742	1.0000						
annualreport	0.4627	0.1826	1.0000					
projectman~r	0.4048	0.4716	0.4583	1.0000				
training	0.5036	0.1931	0.4272	0.8443*	1.0000			
transparency	0.6409*	-0.0869	0.1586	0.2379	0.2210	1.0000		
rdpro	0.5064*	-0.1326	0.2103	0.2836	0.4185	0.0106	1.0000	
teamwork	0.6335*	-0.2667	0.2739	0.3043	0.4829	0.1810	0.4189	

	teamwork
teamwork	1.0000

Table 7: Correlation of Hypotheses 2

The correlation matrix also lacks values close to 1, which confirms the thesis about the absence of multicollinearity.

Hypotheses 3

Choosing the dependent variable income or **Success**, and independent variables independently, evaluate the linear model. Check if the selected model is adequate. If the answer is no, try to assess another linear model. And Independent variables are:

- Factor 1 (F_1): Government Support
- Factor 2 (F_2): Financially Government Support
- Factor 3 (F_3): Government Support in difficulties

According to the table above and Coefficients, all numbers are negative. Here are two things to consider before any theory. First, the project is included in which sector, governmental, or private

sector. The next issue is how the project resources are funded. Briefly, at the answers table to the questionnaire, all private companies lack government support, so this assumption does not apply here. Because private companies need to be separated from the government, they then examine the success or failure of the companies in terms of government support.

```
. reg success govsup fingovsup diffgovsup
```

Source	SS	df	MS	Number of obs	=	25
				F(3, 21)	=	2.35
Model	12.0066835	3	4.00222783	Prob > F	=	0.1020
Residual	35.8333165	21	1.70634841	R-squared	=	0.2510
				Adj R-squared	=	0.1440
Total	47.84	24	1.99333333	Root MSE	=	1.3063

success	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
govsup	-.6113409	1.083755	-0.56	0.579	-2.865132	1.64245
fingovsup	-.1304611	.4472787	-0.29	0.773	-1.060628	.7997058
diffgovsup	-.2893754	.3519577	-0.82	0.420	-1.021312	.4425607
_cons	4.228938	.6605737	6.40	0.000	2.855199	5.602676

Table 8: Regression of Hypotheses 3

Success = 4.228 - 0.611 (F_1) - 0.13 (F_2) - 0.289 (F_3)

F-statistics: F (k-1, n-k) $_{0.05}$ = (3, 21) $_{0.05}$ = 2.35; F (cr) $_{0.05}$ <F, and Prob> F = 0.102, that is more than 5% significance level. Therefore, the **H_0 is not rejected**, and the regression **is not adequate.**

The P-value for ***all*** variables is more than level α (0.1); therefore, the **H_0** of the equality of these coefficients to zero **is not rejected**.

Since these data are extracted from the questionnaire, we use the VIF-test for greater accuracy.

```
. vif
```

Variable	VIF	1/VIF
fingovsup	4.46	0.224454
govsup	4.30	0.232820
diffgovsup	1.93	0.517074
Mean VIF	3.56	

VIF at an acceptable level (<8) for each variable; therefore, for the linear model, there **is no** multicollinearity problem.

Table 9: VIF of Hypotheses 3

```
. pwcorr success govsup fingovsup diffgovsup, star(1)
```

	success	govsup	fingov~p	diffgo~p
success	1.0000			
govsup	-0.4653	1.0000		
fingovsup	-0.4550	0.8702*	1.0000	
diffgovsup	-0.4415	0.6639*	0.6789*	1.0000

Table 10: Correlation of Hypotheses 3

The correlation matrix also lacks values close to 1, which confirms the thesis about the absence of multicollinearity. This questionnaire is distributed only among managers and senior managers or project supervisors. Most of them had more than five years of experience (more details of the poll will be provided in the next chapter). Therefore, their views and familiarity with project management are no more than ineffective in this choice.

Also, the selected companies were mostly private (entirely coincidental). It should be noted that in Iran, the type of management in private and governmental companies is altogether different. Further details are given in the following.

Data Collection and Analysis

In this study, the survey was designed according to evaluate the implementation of project management in Iran. The questionnaire is based on the future needs to examine the relationships between the components. Following is the question of managers' familiarity with different aspects of project management. These include the degree of familiarity with project management software and tools.

Questionnaires and interviews with corporate executives were conducted during the study. 52% of the participants are Male, and 48% are Female, of which 48% have a bachelor’s degree, and 40% have a master’s degree, and the rest have a Doctorate, Diploma, and associate degree. 56% of the participants were in the private sector, 28% in the governmental companies and 16% included in the Listed-on stock exchange companies. Most participants, with 20%, are project managers and leaders. Of these, 64% have taken course project management standards, including PRINCE2, PMBOK®, and 36% lack any project management certificate. Questionnaires were designed in the form of yes-no questions and grading between 1-5. Level 1 has the lowest score, and level 5 has the highest score. The questions are also divided into four groups, as follows:

92% of the participants were familiar with project management, but the level of application of project management was at 32% for Level 3 and then Level 2 for 28%. Surprisingly, in terms of monitoring performance, Level 2 came with the highest score of 52% vote. It is worth noting that 60% of the participants are familiar with project management software, and the most common ones are Microsoft Project and Primavera. Most points are about not using the software. In the following, more than 44% of the participants use project management tools, and most of them use the Work Breakdown Structure (WBS) and then Critical Path Method (CPM). The most critical question in the questionnaire is how successful the projects have been in the last five years. Levels 2, 3, and 5 equaled 28% of the vote, indicating the impact of various factors on project success. In the next section, these statistics will be interpreted. 64% and 80% of managers answered positively (respectively) to appoint the Senior Project Manager and present one annual report for members of the board. The highest score for supporting of organization's senior manager was level 3, with a 36% vote. Managers also scored the most top points for vocational training for those involved in the system, with 44% vote at level three. Unfortunately, most of the transparency in the system is allocated to Level 2, with a 36% vote. Besides, the rate of teamwork and R&D was 40% and 48%, respectively.

52% of executives responded positively, and 48% responded negatively to government support. But the most considerable amount of this support is in financial matters, with 44% of the vote and the highest amount of support in difficulties during the project, with 48% of both votes being allocated to Level 1. Most participants have the necessary knowledge about project management, software, and project management tools. Given the level of application in project management, it can be concluded that the level of oversight of the implementation of such projects by the senior managers is low, which is wholly corresponded with the responses obtained from the questionnaire. The success rate of projects over the last five years has varied across companies. That means every company has its unique criterion for success.

Assigning a specific position for the project manager and giving him/her the necessary authority in most companies is not observed. This makes project managers unable to execute the required instructions when it is needed. The major problem of projects in Iran is the lack of transparency in the works, which creates a chain of successive issues. Unfortunately, the openness of the project process, which is one of the principles of project management, is not well implemented or generally unwilling to be executed in Iran. Government support has also included a level 2 average, even in governmental companies, which indicates the government's inability to carry out projects and, in recent cases, calls for outsourcing to the private sector. This, in turn, is an economic recession to Iran's economy and will put pressure on the poor stratum of society.

Study Result

Undoubtedly, identifying the weaknesses and problems in each field is the first step in solving them. Without being aware of the existence of these problems and their importance and priority, trying to solve them will not have the desired result. Because without a clear and definite goal, it will be impossible to move towards it.

Many problems in project management in Iran are due to the lack of proper understanding of the project management culture and the lack of a positive view of up-to-date and modern management. According to Jones, Charles P. (Jones, November 8, 1999, p. 585), essential factors that influence the investment decision-making process include uncertainty in investment decisions, the global nature of the investment, the investment environment, and market efficiency. Investors should carefully study these factors to evaluate information and make decisions.

As of the latest report on the Iranian economy (Eghtesad Online[1]), there are about 76,000 unfinished projects in Iran. The estimated total cost of these projects is approximately $ 16,625,103,600, which only 38.06 % of the total budget is dedicated so far, and the government cannot pay the rest. According to these reports, extracted from the official website of Eghtesad[2] Online, 72.2 percent of the economy is owned and managed by the government or quasi-government institutions. Even many companies that are called on paper and under private business law are run by a government or quasi-government agencies. Only 27 percent of Iran's economy is owned by the real private sector. The project industry in Iran also follows this general rule of the Iranian economy.

During an interview, *Mr. Sharifi*[3] stated that government culture dominates the Iranian project implementation system. In the national economy, the loss of resources is average and abundant, and the productivity of projects is at a lower level. According to *Mr. Fakhr*[4], the biggest problem for us is the lack of business in line with our strategy for investment. The right market is not found to fit the requirements. Second, there are problems with the lack of capital. *Ms. Nowrouzi*[5] stated that none of the standard projects in Iran, except for some specific companies, meet the standards and go the traditional way, but the tool is all CPM. Iran's sanctions are either severe and time-consuming or impossible in some cases). From *Ms. Nowrouzi*'s perspective, it depends on what kind of success means. Success in terms of time, cost, in terms of performance. A project is successful when the client's primary need is met. For instance, if an employer wants to make a date like this, it rarely happens. *Ms. Nowrouzi* stated that, in her nine years of experience in the various oil, gas, shipbuilding, and construction industries, no one has been able to push through the contract. Done right but delayed or at a higher cost or lower quality.

[1] https://www.eghtesadonline.com/
[2] https://www.eghtesadonline.com/
[3] Ahmad Sharifi Zemeydani: PMP degree from the PMI Institute, Project planning and control in contracting companies especially oil and gas.
[4] Vahid Fakhr: Master of Project Management, Lotus Investment Manager
[5] Helia Nowrouzi: Project Manager Several *Mapna* Development projects.

According to (Merrow, Mar 31, 2011, pp. 40-50), the project failed when costs grew (real), schedule slipped, overspent (absolute measure), overspent become more than 25 percent and execution time (absolute measure) become more than 50 percent, and also severe and continuing operational problems into year two after startup. When one or more of the points mentioned above occurred, the project fails.

Discussion

The cases related to management science in general and project management science particularity are not like technology and engineering standards. Project management style in the United States is different from Europe or Russia and China and Japan and Iran. Even in each country, in various industries such as oil and gas, IT, construction industry, and other industries, project management style is different; two project-oriented companies manage their projects with different styles.

The engineering team, the procurement team, the implementation team, the quality control team, the project planning, and the control team, the finance and accounting team, and the contractors and the project management team each work in separate islands. They do not interact well and do not even have common goals. Everyone is doing their best to make their organization successful and other teams inefficient, and there is no team-building spirit for project goals. According to (PRINCE2®, 2017), Understand your stakeholders' perspectives and bring them together in a shared vision for the project.

In the end, it is essential to note that being sick of a project is not necessarily a disaster. The art of project management is to identify the project's disease promptly, identify the root causes of the project, and try to remedy it. The main catastrophe is not paying attention to the project's condition and getting used to the symptoms of a patient project.

Conclusion

Management is the application of science and art in coordinating and directing financial or human resources, or both, in achieving the goal with maximum efficiency. The art sector itself needs to gain subjective practical and artistic experience. Since management is entirely different from other sciences, the approach to this science must be changed. The significant difference between management science and other sciences is about human beings which is very complex and behaves differently in various societies and cultures. A collection of Best Practices that can be a useful guide for project managers if tailoring.

It can be said, according to (Kousha & Rafiei, 2004, pp. 70-73) that success in the project depends a lot on recognizing the factors of failure. With the right knowledge of weaknesses, success is achieved.

It can also be inferred from the information obtained from this research that the success and failure of projects and companies are highly dependent on the culture and tradition of that country in addition to observing world standards. According to Harold Kerzner (Kerzner, 2003), It is ethical that not all industries need project management, and managers need to determine whether there is a real need before commitment. Several simple-to-do sectors, in both static and dynamic environments, do not need project management.

Finally, the proper implementation of the project management office can help solve the organization's management challenges. The organization will undergo a significant overhaul. The purpose of this presentation is to get acquainted with the small and large topics of project management and its implementation in Iran, the challenges facing project managers, the level of familiarity and application of project management in project-based organizations, tasks, and goals of project managers and project management office.

Response to Research Aim

I. It was figured out that most of the threats in Iranian projects are divided into five groups: transparency, a political issue, severe sanction, the size of the government share in the economy, and different project management cultures like the traditional method. These five fundamental problems impact on three angles of time, cost, and quality are the main factors, which every project is related to them.

II. Nevertheless, in comparison to developed countries, over cost and over timing to deliver a high-quality result, it happens about 58 percent according to the EY.com report (Oil and gas megaproject development, 2017) to whole over the world but in Iran according to data obtained from this research more than 75 percent of construction projects in Iran is not completed. Based on the information obtained from the questionnaire, only a minority of them used a structured method in the field of project management in terms of monitoring performance, and level 2 came with the highest score of 52% vote (from level 1 to 5). This gap is due to the lack of expertise of a participant as well as their knowledge of why organizations need a structured plan from the beginning of the project.

III. The success of the project has many factors. It depends on the organization and the size and purpose of the project. It is possible to succeed in a project with strong teamwork and supervision of teamwork. However, in projects such as construction, it is necessary to comply with international standards, and the absence of each principle of engineering can pose irreparable risks to the project team, the employer, and the project stakeholders.

Adequate knowledge and up-to-date standards in international standards, along with knowledge of the project management culture in the organization, can both help the project progress. As can be seen from the questionnaire data, the success of the project certainly does not depend on the application of project management in all areas. Perhaps two or three of the principles of project management mentioned in the PMBOK® will help the success of the project, and probably all its policies will be needed to implement a project.

Therefore, it is imperative to know all the dimensions of the project before starting work and can avoid the exorbitant costs that they face during the project. The theoretical framework for developing project management also will be presented as recommendations in the following part.

Recommendations

Project Scheduling in Iran There is sometimes significant differences with project scheduling outside of Iran. Overall, the style of project planning and control and what we do in Iran as project planning and control differs from what is done in other countries. This, of course, is not an inherent flaw. Because every knowledge, tool, and standard can be localized for every state and every project, and we do not have to do the same as everyone else does. The following recommendations can be made to improve the project management process, especially in terms of cost and time:

All project managers know that what is called a successful project is done in the context of Scope, Time, and Cost. In other words, the strategy, the thinking, the plan, the performance, and all the decisions as a project manager should be in line with the STC of the project, and his main concern is the implementation of these three principles.

Choosing the best HR, experienced, responsible, accountable options is essential, at least for the most critical positions. Key positions are such as supervisors of engineering, business and logistics units, finance and administration, project planning and control, quality control, electrical and mechanical engineering, civil and piping, etc. Usually, good supervisors recruit suitable human resources. A key stakeholder, employer, consultant, or even within the organization that is not adequately identified and whose expectations are not met can cause severe damage to the project. Expectations in stakeholder management must be managed. Expectations are demands that the

stakeholders may never have said, but they will eventually come true. According to (Batchelor, 2010, pp. 17-20), The skills and resources of suppliers and the project team determine the project's capability.

The project management office enhances the success of projects by adapting the necessary resources and tools (Blokdyk, 2019). Project management skills must be transferable. With the help of a project management office, very sophisticated skills are transformed into software and are quickly presented and transferred. At the same time, if a person or a department offers capabilities, they are used as a resource throughout the company, and so do other individuals and departments.

The following are suggestions for future research to be a step towards improving the quality of projects in Iran.

Direction for Future Works

The recommendations for future studies proposed by the author are the following:

The other aspect of project management worth doing is to analyze Project Management Culture.

Besides, statistical methods like regression and impact success by using Stata[1] or MS Excel; there are innovative programs that speed up the process of cost and time management analysis, for instance, Primavera, Trello, Asana, and MS Project.

It would have been good to collect data separately from governmental and non-governmental and compared them to see which are the problematic ones in this specific case study.

It would have been better to study in a specific area, for instance, oil and gas, construction, or IT projects, as they are more crucial to investigate them.

By a combination of organizational culture and modern techniques, the framework of project management can be significantly progressed, if we have an STC on the Iranian projects.

Project management can be more organized and productive if further studies can find a way to improve the combination of organizational culture and individuals' viewpoints since progress in this issue is necessary.

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[1] Stata is a general-purpose statistical software package created in 1985 by StataCorp LLC. Most of its users work in research, especially in the fields of economics, sociology, political science, biomedicine, and epidemiology. (https://en.wikipedia.org/wiki/Stata)

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