

# Impact of Project Managers' Personalities on Project Success in Four Types of Project

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**Abstract.** The compatibility between project manager's behaviors and project types are crucial for project success. This study focuses on the relationship among three aspects, project types, project manager's personality, and project success. A questionnaire was designed and it figured out self-confidence in three projects out of four projects has no effect on success criteria, but about another project, influences of manager characteristics for each type of project are different.

**Keywords:** project manager, personality, success criteria, project type, characteristic

## 1. INTRODUCTION

The oil industry as the oldest industry of IRAN has specific and important role in country growth and development [1]. Due to this reason, there are several mega projects executed in Iran. In this regard, management of projects especially in oil and gas industry is vital because more than 50% of Iran budget [2] is dependent on oil and gas export, then inaccurate approach in management can cause project failure and it could have irrecoverable detriment. In project management, there are several factors affects on project outcome. One of them is personality of project managers. In this regard researchers have tried to study impact of project managers' behaviors and traits on projects. Each Project manager as a person has varied behaviors, traits, beliefs, values, and skills. And without implementing all of them, project could not been completed successfully [3]. Affecting personal characteristics of project managers on project success has attracted researchers' attention to itself. Although personality of project managers has impact on project success, but it should not be forgotten each type of project needs special characters for management. Unfortunately compatibility between project manager's personality and project type was not considered properly. Just some ones studied different type of projects and managerial approach suitable for specific type ([4]; [5]; [6]). Therefore the effect of managers 'personality cannot be ignored as an important issue in project success. So that revealing personal characteristics differences could help to determine how project manager affects on different type of projects. In this article, it was tried to be done a comprehensive survey about project success, project managers' characteristics, project type has impact of each personality factors on project success criteria and show in considered project type, this impact is similar or not. Therefore in following it will be presented:

- thorough literature review about project types, project success , project managers' personality, and relation between them
- relation between personality and project type
- impact of each managers' behavior on project success criteria

## 2. RESEARCH METHODOLOGY

As a first Step for each research, literature study is prominent. Finding related references is so hard there so extensive search have done in this regard. There were found enough references about project managers' characteristics and personalities, but about relation between this issue and project success, have limited

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sources. The chosen methodology for this article is quantitative. This method gives the opportunity to categorize responses and then based on statistical approach, illustrate the results. In quantitative method, research could have accurate outcomes by using statistical method, So that this method with designing questionnaire was selected. However questionnaire has some constrains such as don't have open ended questions, taking time to fill, and having limitation to explain about each item. About 14 personal characteristics for project managers were picked. Meanwhile 6 project success criteria were opted and for getting complete outcome, it was asked respondents to opine about those items for 4 types of project. Data for analyzing was gathered from 85 experts of oil and gas industry with more than 3 years experiences in this industry. Among them, 40respondents works in client organization, 24 from contractor, 9 from consultant organization, 8 ones are from MC, and 4 remained persons did not defined organization. Analyzing gathered data is divided into several parts. First the impact of each behavior is recognized based on 6 project success criteria. Thereafter, correlation between personalities and their influence on project success is discussed. Data analyzing was done by SPSS software. Before any discussion about results, it should be noted evaluating Data reliability was tested by Alpha and this factor is 0.9421.Cronbach's alpha is used as a measure of reliability for sampling examinees. When it is near one, it can be said the reliability of the research data is appropriate.

### 3. RESEARCH CONTENT AND CONTRIBUTIONS

#### 3.1 Project Classification

A common fallacy among people involved in projects is that all projects are similar, so they can be managed by equivalent tools. Unfortunately, this attitude made project failure because of incompetent techniques in management. Therefore project difference should be noticed. One project classification method suggested three dimensions for project to categorize. They are uncertainty, complexity, and pace ([5]; [7]). Risk and uncertainty are existed in all projects from the beginning in several dimensions especially technologically. Complexity of a project is depended on scope of work, variety of disciplines and number of people work in a project. Pace is related to time each project needs to be completed. Some projects are urgent and achieving time is goal of project. Beside of these three dimensions, other one is transpired. It is Novelty[8]. This factor is about new product or technology used in a project. Briefly, this categorization was called NCTP model. This model as shown in Figure 1 can guide project managers to apply proper management procedure during project implementation. .

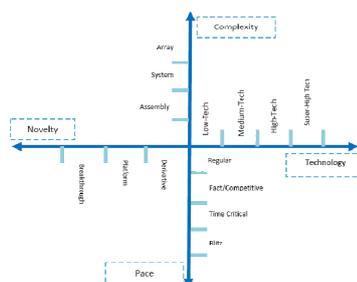


Figure 1: the NCTP framework “based on research by Dvir et al. 2006”

#### 3.2 Success Definition in Project

Some literatures ([9]; [10];[11]) define project success is noticeable from two areas:

- Project success factors , independent variables, effective to increase probability of project success
- Project success criteria, based on the criteria someone can judge if project outcome is successful or not.

Lim and Zain Mohamad [12] stated a difference criterion and factor of project success. Criterion is a standard or a reference point against which project success can be evaluated on judged, but factors is a fact that contribute to project success.

Criteria of project success are changeable in different projects. It depends on main organization' strategy, natural of projects, and different industries of projects [13]. Iron Triangle or Golden Triangle consisted time,

cost, and quality ([14],[15],[16],[17]) is a traditional success criterion, but it is not adequate. Many attempts were done to promote it. Some researchers presented a new expression about project success ([18], [19], [20]) like completion within distinct budget, at suitable level of performance, without changing corporate culture in project. It is also noted project success criteria could be assessed from different views of owners, developers, contractors, users, and especially society [16].

### 3.3 Project Managers Character

It has been realized specific personality of each human can be helpful in a certain role and position [21]. For this purpose, some tests were used to determine this issue. For instance, MBTI categorizations were used by some researchers to find best type for project manager's role. Shenhar and Wideman [22] reported many types of MBTI can be proper for being project manager, but ESTJ type is the favorite one. Some other ones confirmed it[23]. Also it was found that being S (sensing) type was prominent for project manager ([24].Other writers ([25], [26]) stated thinking type had more tendencies for being manager. Some other authors and researchers suggested several personal characteristics and behaviors for project managers that are not based on psychological test such as MBTI or Big Five. In this regard there are lots of studies done to identify manager's behavior in project. Table 1 depicted brief managers' characteristics which were found by different authors from the early ones.

**Table 1: Personal Characteristics of Project Managers and Authors**

Item	Ref.	Personal Characteristics (Focus on Project Manager)
1	[27]	Flexibility and Adaptability; Preference For Significant Initiative and Leadership; Aggressiveness, Confidence, Persuasiveness, Verbal Fluency; Ambition, Activity, Forcefulness; Effectiveness As A Communicator and Integrator; Broad Scope Of Personal Interests; Poise, Enthusiasm, Imagination, Spontaneity; Able To Balance Technical Solutions With Time, Cost, and Human Factors; Well Organized and Disciplined; A Generalist Rather Than A Specialist; Able and Willing To Devote Most Of His Time To Planning And Controlling; Able To Identify Problems; Willing To Make Decisions; Able To Maintain Proper Balance In The Use Of Time
2	[28]	Multidisciplinary Oriented, Global Problem Oriented, Effective Decision Maker And Problem Solver , Have Management Knowledge, Have Analytical Ability, Creative, Impressive Communicator, Motivator, Flexible, And The Most Important One Proper Temperament Such As Calm, Realistic, Quick Thinking, Etc.
3	[29]	Drive And Ambition; The Desire To Lead and Influence Others; Honesty And Integrity; Self-Confidence; Intelligence; Technical Knowledge.
4	[11]	Problem-Solving Ability; Results Orientation; Energy And Initiative; Self-Confidence; Perspective; Communication; Negotiating Ability.
5	[30]	Having Vision and Clear Picture About Future; Goal Directed; Clear Purpose For Going Ahead and Achieving The Goals; Self- Control/ Self Discipline; Ability For Communication; Energy; Persistence; Positive Minded (Attitude)
6	[18]	Dealing With Problems; Risk Evaluations; Honesty and Integrity; Understanding Project Team Problems; Having Knowledge About Project Technology; Business Management Competence; Management Principals; Communications; Alertness And Quickness; Versatility; Energy and Toughness; Decision Making Ability
7	[31]	Self-Awareness, Self Management, Social-Awareness, Relationship Management.
8	[32]	Honest; Competent; Forward Looking; Inspiring; Intelligent; Fairness; Open Minded; Courageous; Straightforward; Imaginative
9	[33]	Ambition; Drive and Tenacity; Self-Confidence; Psychological Openness; Realism and An Insatiable Appetite For Learning
10	[34]	Loyalty; Joyousness; Ethical; Self-Awareness; Invention; Love; Firmness.

So, it is realized several personal characteristics and behaviors for project managers are listed. But choosing suitable factors for this role is not an easy task.

### 3.4 Relation between character, project success and project type

Some researchers have studied relation between project management style and project types, but there was no mention about impact of project manager personality on project performance and project success ([4]; [5]; [6]).Some characteristics for effective project managers were suggested by Pinto and Trailer [35]. Also it was supposed skills in technical and leadership fields were important to be a good project manager; nevertheless there was not clear relationship between skills, personality and project success. One research about project success and related success factors was focused only on time, cost, and quality; in this regard it was defined related success factors. Interestingly, project managers' competence and leadership skills were not as success factors[36]. Westerveld [37] showed a link between success criteria, success factors, and project types are existed. It was illustrated success criteria and success factors can be mixed differently and used in types of projects. In recent study done by Muller and Turner [13], it was shown ranking success

criteria by project types is different. For example, when project is complex and fixed price, customer satisfaction is more considerable. Also Turner and Müller [38] expressed previous researches ignored project managers' personality, skills, and knowledge effect on project success. Later it was stated a close dependency is existed between project success and project managers personality [39].

A combination research about project types, personal characteristic of managers, and project success was done. Three groups of projects included derivative (new product with a little improvement in old production), platform (new product but low technology risk), and high tech (high uncertainty in technology) were considered as project type. Interestingly it was found project managers tend to choose projects closed to their personality. For example, managers who are perceiving and intuitive prefer to be involved in high tech projects. Inversely, managers who have rebellious dreamer and avoidance attachment style prefer to manage derivative or platform projects [8]. Briefly, it could say that project manager characteristic affect project success in some ways. Also considering to project types is important for choosing effective project managers.

#### 4. RESEARCH DELIVERABLES

As it was cited in methodology, according to literature and our experience in projects, a questionnaire was designed. In this research, 4 project types are defined including:

- Urgent project: The project that time is essential and achieving goal is critical, but it doesn't have more than 3 disciplines and the technology is known.
- Complex Project: the project that has more than 5 disciplines and it is estimated to take more than 2 years but its technology is known. It could be said mega projects.
- Novel Project: The project that uses new technology and there is not enough experience to implement it.
- Normal Project: The project that was done before in different situation and doesn't have complexity, urgently and novelty in discipline, time and technology. There are many experiences in that field.

About criteria for measuring project success, 3 items as primary ones called Iron Triangle are considered. They are time, cost, and quality of project. But for gathering complete and accurate result, 3 other ones as secondary criteria are used including client satisfaction, achieving strategic goal of organization, and compatibility between executed project and requested specification by the client.

##### 4.1 Impact of Project Managers' Personality on Project Success

For this analysis, it is asked "Do project managers' characteristics impact on project success?" for this purpose, two hypothesis are build up. H0, it means project managers has no impact on project success and H1 has impact on project success. Statistic hypothesis of this theory is:

$$\begin{cases} H_0 : \mu < 0.5 \\ H_1 : \mu \geq 0.5 \end{cases}$$

That  $\mu$  is the mean of population. The hypothesis is one tail, therefore, If  $p\text{-value} = \frac{\text{sig}}{2}$  is less than 0.05, so  $H_0 : \mu < 0.5$  is not acceptable and it means this item has efficacy on success criteria. The result is shown H0 is rejected and therefore it is realized personal characteristics overall has impact on project success. Study of other projects are also present the same result.

However it is found there are relationship existed between project managers' character and success criteria, but this question is still unanswered: "Which project manager personalities are more effective than others on project success for each type of project?" The analysis of each type of project for this issue is presented in table 3.

**Table 2: effective and ineffective personalities of project managers in each project type**

Project Type	Most Effective Personalities	Less Effective Or Non Effective
Urgent Project	Honesty, Conscientious, Intelligence	Self Control, Passionate Emotional, impartially & Fairness
Complex Project	Honesty, Conscientious, Creativity& Imaginative	Impartially & Fairness, Passionate Emotional, Enthusiastic & Curiosity
Novel Project	Honesty, Creativity & Imaginative, Intelligence	Passionate Emotional, Impartially & Fairness, Self Control
Normal Project	Honesty, Persistence, Conscientious	Passionate Emotional, Impartially & Fairness, Enthusiastic & Curiosity

In addition it is answered to the question that "which project managers' characteristics are more effective in which project success criteria according to Organization and Project Types". It is derived in urgent project; client satisfaction is the most affected criterion based on parties' idea, however in complex project, quality

and satisfaction are the most ones like normal project. For novel project, all parties agree that quality is criterion that project manager's personalities can affect on it.

## 5. CONCLUSION AND RECOMMENDATION

In current exploratory research, analysis for presenting impact of personality on project success was done. As it is studied, it is hardly find some authors considered on the relationship of project manager character, project success criteria and project type. But in little efforts it just focuses on two dimensions of them. In this article three dimensions are studied together and it found out interesting result. So comparing this result with previous studies in this regard would not be possible. But in general, it chose some way, like ignoring one dimension, to do comparison between results. Project manager's character impact on project success result is chosen. Honesty as one of the most important characteristics has influence on almost project success criteria. Self confidence and self belief of project managers as Lee-Kelley et al.[40] illustrated have significant role in project completion successfully, but in our result self confidence is not very effective on project success. Table 4 briefly shows this comparison.

**Table 3: Relation between Project Managers' Personality and Project Success Criteria**

Project Type	Most Important Character	Project Success Criteria					
		Time	Cost	Quality	Client Satisfaction	Goal Achievement	Specification Compatibility
Urgent	Self Confidence	-	-	-	-	X	-
	Intelligence	X	X	-	-	X	-
	Honesty	-	-	X	X	-	X
Complex	Self Confidence	-	-	-	-	-	-
	Honesty	-	-	X	X	X	X
	Self Control	-	-	-	-	-	-
Novel	Creativity & Imaginative	X	X	X	-	X	-
	Self Confidence	-	-	-	-	-	-
	Visionary	X	X	-	-	X	-
Normal	Honesty	-	X	X	X	X	X
	Self Confidence	-	-	-	-	-	-
	Conscientious	-	X	X	X	-	-

X= Effective

- = Ineffective

Based on this summary, some issues are recommended:

- For selecting project managers, personality test should be done to define their characteristics and behaviors. Although one time test is not enough and personality test should be done during working period till personal characteristics of a manager understood.
- In choosing manager for a project, type and context of project should be taken into consideration. In this regard, organization should categorized projects and based this categorization, suitable project manager is chosen.

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