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Attitudes to risk in petroleum projects

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Abstract

The paper identifies common personality traits and attitudes to risk management for people in the petroleum industry. The research was conducted with the aid of a survey and was addressed to people who have participated in the delivery of petroleum projects, with fifty responses obtained. The questions in the survey were based on Jung's personality theory and risk decisions identified from previous projects. Using Jung's personality classification, it has been concluded that people who deliver petroleum projects are judgers (Relationship with the world), more extrovert than introvert (Focus on attention), more intuitive than sensing (Seeking of information), and finally more thinkers than feelers (Decision makers). The results also show that the respondents are aware of different forms of risk in a project and prefer not to introduce any form of risk to a project.

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1. Introduction

As one of the biggest commercial sectors in the world, the petroleum industry consists of activities including exploration, extraction, refining, transportation and marketing of crude and natural gas¹. These activities are divided into three major sectors, namely downstream, upstream and midstream¹. The industry is the main driving force behind other sectors such as transportation and aerospace. Even though the industry has been hit with falling crude oil prices, it is still expected to grow by at least 4% by 2019².

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Project success, the focus of every project³, is still actively researched by both academics and industry⁴. The global petroleum industry is a very competitive environment with large multinationals such as Exxon Mobil and state run oil companies such as Saudi Aramco. Due to heavy competition in the industry, companies invest heavily in research to improve performance and capabilities and as such results are not shared; this makes developing countries dependent on those multinational companies⁵. All projects are accompanied with a variety of risk. Tsiga et al.⁶ identify the critical success factors for petroleum projects and their research also highlights the importance of risk management in such projects.

There is currently little research that focuses on project management in the petroleum industry. This gap has led to the implementation of generic project management techniques that have been developed by professional bodies such as the Association for Project Management and the Project Management Institute. Understanding each individual industry helps in the development of sector specific frameworks and methodologies that can contribute to project success and avoid project failures such as the Deepwater Horizon accident^{7,8}.

There are a variety of factors that can help improve the success rate of petroleum projects⁶. Various researchers and schools of thought have emphasized the importance of the skill set of the project manager in delivering projects^{9,10} and others have emphasized not only the role of the project manager but also the competence of the person in that role¹¹. Despite significant debate in the project management literature, there has been no clear cut differentiation between "competence" and "skill" with the two words often used interchangeably. Katz¹² suggests that the human, conceptual and technical skills of project managers have to be developed, whilst Fisher¹³ and Montequina et al.¹⁴ take this a step further by identifying the ideal skills required of project managers. Researchers such as El-Sabaa¹⁵ suggest a framework to be used when selecting the right project manager.

This research paper focuses on the identification of the risk attitudes and personalities of people who currently deliver petroleum projects, indicating the type of attributes and personalities of people who undertake such decisions.

The decision scenarios of the survey were derived from well-documented decisions that had been taken in already completed projects¹⁶. Some of the decisions led to successful delivery and others led to failure, while the personality aspect of the study was derived from Carl G. Jung's work on psychological theory¹⁷, as adopted by Montequina et al. ¹⁴. Jung's work looks at how people behave differently as a result of reasoning. The differences depict how individuals use their minds in selecting their preferences and how they individually digest information.

There have been various psychometrics questionnaires developed based on Carl G. Jung's work, with the Myers-Briggs Type Indicator (MBTI)¹⁸ and Temperament Sorter II (KTS II)¹⁹ particularly noteworthy. Researchers have highlighted the importance of using such tools in project management^{20,21}.

2. Methodology

For this research, a questionnaire was developed and divided into four sections. The first section was designed to collect background and demographic information about the respondents. The information collected was: location, educational qualification, project experience, project management experience, number of projects participated in, percentage of successful projects, number of projects managed and percentage of managed projects that were deemed successful. The second section of the survey explored the decision scenarios which asked participants to indicate whether they agreed or disagreed with various risk statements. **Table 1** shows the statements shown to respondents in this section. The third section was designed to collect information about the behavioral preferences of the respondents. Thirteen statements were shown based on Carl G Jung's work and similar to those adopted by Montequina et al. ¹⁴. **Table 2** shows each statement and the Jungian preference it measures.

 Table 1: Decision scenario statements.

Number	Statements
1	It is common for there to be tension between the need to get something right and the need to
	make progress. I would prefer to accept an imperfect solution and make progress, than to wait
	to improve the solution.
2	I find face-to-face meetings a more effective way of communicating than email.
3	Projects often start without an adequate amount of time spent on planning.
4	My customer introduces challenging new requirements after the project has kicked off and
	offers to pay for any costs incurred. In this situation I would happily accept the new

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