

Leadership In Project Management: A Study of The Relationship Between Leadership Styles and Project Success

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Abstract

The main purpose of this research paper would be to examine the influence of three totally different leadership styles, specifically democratic, autocratic, and laissez-faire: on oil and gas megaproject success in Malaysia. This research focuses on a mixed method approach whereby both quantitative and qualitative assessment using a questionnaire mechanism is administered to a control group of employees under the Project Management Department by using the convenience sampling technique and several face-to-face interviews. The data from both methods would be crucial to determine the final outcome on which leadership style reigns over the other. In order to evaluate further the leadership styles and project success, the design of the questionnaire consist of a one to five-point scale, and then the data interpretation is done using SPSS software. Demographic and descriptive techniques came in handy as it contributes to an in-depth analysis of the sociology approach, while Pearson's correlation and regression analysis subscribe to examining relationships between variables to justify the study hypotheses. The results and outcome showcase that both democratic and laissez-fair leadership tends to lean towards a more positive impact on mega project success, while autocratic leadership has a negative impact on project success.

Keywords: Leadership Styles, Project Success, Megaprojects, Oil, and Gas

1. Introduction

There are many demanding situations that today's mega projects face justifying their success. Some of those demanding situations include staying within the budget and schedule, creating shareholder value, and profitability. Many organizations undertaking such mega projects spend huge amounts of time and effort to ensure that the project governance is under the right leadership to achieve those objectives and remain relevant and hence successful in their project execution. One primary initiative to achieve the desired targets is by commissioning the right skills and appropriate leadership team to deliver the required results.

Megaprojects commonly have many complex characteristics. Such projects are fundamentally risky due to the long development process and complicated interfaces. Decision-making, policy, and planning is often not unilateral process that involves many stakeholders with conflicting interests. Normally the project scope or objectives changes substantially over time. Statistical evidence shows many unplanned incidents are often unaccounted for, leaving budget and other contingencies greatly inadequate. Regular misinformation about costs, benefits, and risks is a norm. Cost overruns and/or benefit shortfalls with most projects (Flyvbjerg, 2014).

Due to their unique nature and characteristics, delays in project are one of the problems that often occur on mega oil and gas projects in Malaysia and around the world (Abdul Kadir, 2020). These megaprojects will require high design knowledge, technical skills, competent human resources, professional managerial capabilities, and large-scale investment. Understanding and developing the right leadership style to manage such complex megaprojects is becoming an alarming issue that need to be addressed. Many previous studies have identified the criticality of project manager that would determine the success of the project (Zwikael, 2019). Leadership style is regarded as a mixture of various characteristics, traits and behaviours that are utilized by leaders for interacting with their subordinates. (Al Khajeh, 2018)

In contrast, developing countries like Malaysia might suffer if proper leadership styles are not quickly adopted, adequately trained, and awareness created amongst the practicing professionals which ultimately challenge the development of these megaprojects and towards assisting the government in Malaysia to achieve their sustainable progress objectives. The aim of this paper is to find the best leadership style for the success of a mega project mainly in oil and gas industry. Understanding the right leadership style would help organization to be successful by aligning their business processes and policies. This helps organization to create the best work culture and to develop the teams required to be successful in the mega projects and be able to sustain in the long run.

2. Background Of Study

Mega projects are complex, large-scale undertakings generally with huge CAPEX and can take several years to complete. The widely used or accepted definition of a mega project is a project with at least USD 1 billion in budget. It also can comprise of many stakeholders and influential people which factors out that they are always "trait-making", which means they are designed to change the structure of society in a certain way in comparison to smaller projects,

which are "trait-take". Past findings have often expressed concern that important megaprojects have repeatedly failed due to massive overruns, misunderstanding of outlooks, or both.

In this context, leadership styles and governance have been found to have significant relationship with the megaproject's performance and success. Project governance is very critical for project success and there is a need for clear definition and principles which are yet to be achieved (Al-Subaie A. A., 2021). In this research, we contend that there is a strong relationship between the leadership style to manage such megaprojects hence ensure the success of these projects. Rather than measuring the success of these megaprojects, we are exploring whether there is any notable leadership style have anything to do with the success of these megaprojects. A leader must have the good skills such as the critical thinking skills to know how the best way is to use the resources available at an organization disposable (Ward, 2020)

We observed that the extend of successful megaprojects are distinguished by three prominent leadership styles: democratic leadership, autocratic leadership, and laissez-Faire leadership. However, majority of the research on megaprojects success stories are based on the Western perspectives, emerging economies in Asia have seen their share of these megaprojects in recent times. This provides us a unique setting to test various theories on leadership styles suited to manage and ensure the success of these megaprojects. The aim of this research is to find out what leadership style best suits for the success of executing mega oil and gas projects in Malaysia.

3. Objectives

The main objective of this research is to examine the effects of the various leadership styles and the influence it has to the success of mega Oil & Gas projects in Malaysia. Three fundamental management patterns which can be autocratic, democratic, and laissez-faire had been the principle focus of this study.

- i. To identify the relationship between Democratic Leadership and the Success of Mega Oil and Gas Projects.
- ii. To identify the relationship between Autocratic Leadership and the Success of Mega Oil and Gas Projects.
- iii. To identify the relationship between Laissez-Faire Leadership and the Success of Mega Oil and Gas Projects.

4. Methodology And Findings

Our research approach is using the mixed method approach by combining the qualitative and quantitative methods to derive the solution on the purpose of the research. As depicted from John W. Creswell in his 3rd Edition Research Design, Qualitative, Quantitative & Mixed Method Approaches (Creswell, 2018); we were looking into all three methods to understand how all three methods define the outcome of success of mega projects based on different leadership styles. Data on qualitative and quantitative were gathered before looking at the possibility for combination of both to find a suitable combatant on the research objective.

This research targeted a set of audience or a control group of leaders that are directly involved in a mega oil and gas project in Malaysia. This control group will be the Quantitative control group which will be presented with a set of questionnaires which will be specific to

determine the outcome of the leadership style that these control group have dealt with while being part of the mega projects. Another method would be based on Qualitative research design which will target a set of specific leaders that are or been part of mega projects to be interviewed to measure the success rate of the mega project composed with the leadership style that is prominent with them.

This will aid in identifying which method has a better directive sets of data for a more comprehensive solution. Once both the sets of data are collected, our research will determine the final method applicable based on Creswell's research which is either Qualitative, Quantitative or a combination of both.

In the **Quantitative** method, we have received a total of fifty-five respondents that are working as part of the project management resources including Project Managers, Project Engineers, and Project Leaders. The Multifactor Leadership Questionnaire was used to ensure that team members are on the same page in terms of preferred leadership styles. This helps for easier management of survey data. (Chancy, 2017) The questionnaires were device into three parts. Part A was created to look at the respondents' demographics facts and basic statistics. Part B focused on the many types of leadership styles that were chosen based on the tasks that were distributed at work. Finally, Part C is to evaluate the megaproject's success. In this study, we examined the overall performance of megaprojects to perceive applicable combos of management skills and complexity. Six casual situations, three situations of complexity (i.e., structural, social, and emergent), and three management skills (i.e., technical, emotional-social, and adaptive) had been concurrently analysed to characterize and assess the megaproject performance (i.e., short- and long-term).

From the analysis using the Statistical Product and Service Solution (SPSS), we have run the data for Reliability Test, Normality Test, Correlation Test and finally run the Multiple Regression Analysis.

To ensure we have a clean set of data, the Reliability test was done with outliers' data eliminated for further regression analysis. Based on the analysis the data set was reliable as the Alpha Coefficient is greater than 0.60.

Leadership Styles	Cronbach's Alpha Coefficient	N of Items
Autocratic Leadership	0.713	6
Democratic Leadership	0.693	4
Laissez-Faire Leadership	0.771	6
Project Success	0.912	15

Table 1 – *Summary of Reliability Tests*

Normality Test shows that the data is normally distributed. From the histograms, all data found to be normal.

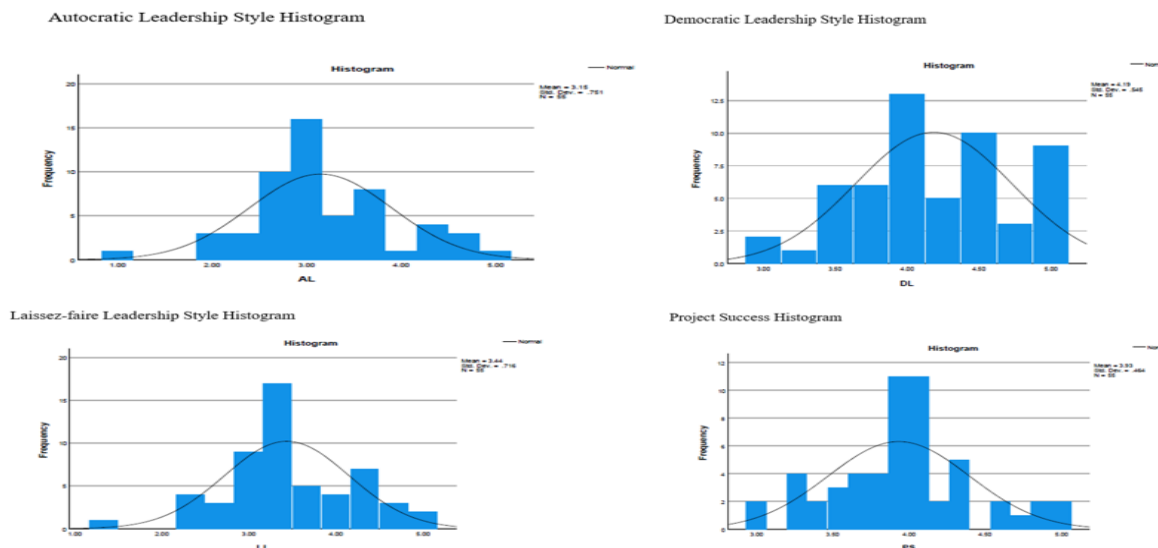


Table 2 – Summary of Normality Test

From the Correlation Analysis, we can see that there is a strong correlation between Democratic Leadership and project success where the r value is 0.648 and p value of less than 0.001. This clearly shows the positive and data is significant as the r value is more than 0.5. From Multiple Regression analysis and Pearson Correlation analysis, both analyses have been consistent where Democratic Leadership is the best and most preferred style for project success. The Laissez-faire is the average preferred style while the Autocratic Leadership style is the least preferred.

Hypothesis	Beta Value	Pearson, Correlation, r	Result
H1: Democratic Leadership has a positive influence towards the success of mega project in the oil and gas industry in Malaysia.	<0.001	0.648	Positive influence on Project Success
H2: Autocratic Leadership has a positive influence towards the success of mega project in the oil and gas industry in Malaysia.	0.693	0.054	Negative influence on Project Success
H3: Laissez-faire Leadership has a positive influence towards the success of mega project in the oil and gas industry in Malaysia.	0.010	0.343	Moderate influence on Project Success

Table 3 – Summary of Hypotheses Results

Qualitative data is vital in determining the frequency of behaviours or characteristics. The research also tested the qualitative data to understand how the leadership traits in context of emotions or perceptions of the leaders which were interviewed and what they feel. Using a Thematic Content Analysis, we have designed a set of questionnaires and submit them to the interviewees prior to the actual interview day for further analysis. Each leadership styles have 6 questions which comprises to a total of 18 questions. Questions 1,4,7,10,13 and 16 are for autocratic leadership, questions 2,5,8,11,14 and 17 are for democratic leadership whereas questions 3,6,9,12,15 and 18 are for laissez-faire leadership. From the reply and the scoring, we were able to identify the interviewees inclination on their leadership styles. During the

interview, we explained on the result with the interviewees and the interview topic was based on the interviewees leadership inclination.

In our simplistic study, we have managed to get one Senior Vice President and two Vice Presidents working in oil and gas companies to be interviewed. All three interviewees have showcased inclination towards Democratic Leadership style, and all have completed and managed more than one major projects under them. Based on the interview inputs, we have gathered that the Democratic Leadership style is the most preferred, followed by the Laissez-Faire and last the Autocratic styles. We have also noted that even though the Democratic Leadership style is the most preferred, the style could change depending on the type of team and the maturity of the team they were handling. They measured project success almost similarly i.e., success is not just about completing the project on time and in budget but also spoke about long term sustenance.

5. Recommendations

The findings of this study revealed which leadership styles employees favour and what they want from their managers for projects to succeed. Based on the findings, democratic leadership appears to be the key to the project's success. The leader promotes more involvement, engagement, and participation from the team member. Team members normally feel that they are part of something larger and meaningful rather than just numbers. (Zhang, 2018) As a result, to advise and help their subordinates in accomplishing tasks or activities, leaders must get a deeper understanding of them. Leaders should also constantly allow subordinates to contribute their thoughts and ideas to the decision-making process, as this will foster a good rapport. The role of democratic leadership in creating a psychologically safe environment is to develop interpersonal skills. (Edmondson, 2019)

The relationship between managers and subordinates is crucial to any project's success. Some techniques, such as the creation of specialist executive training programs, might be proposed to strengthen the leadership of leaders in firms. It has also been discovered that the practice of laissez-faire leadership leads to the success of a project since leaders are more inclined to providing employees flexibility under this form of leadership. According to the results of the conducted survey, when subordinates are given the flexibility to handle difficulties in their own way, the project is more likely to succeed. It is critical for a leader to develop and apply good interpersonal skills to be successful and effective leaders (Micik, 2016)

Subordinates or employees must be prepared with the necessary skills and information for laissez-faire leadership to perform effectively. As a result, the firm or organization may wish to create a mentoring program for the employee or send them to be trained so that they may improve their abilities and expertise in their field. Autocratic leadership, on the other hand, should be avoided because it has been shown to have detrimental consequences to project success. It can either lead to inspiration or disenchantment among employees resulting in increase or decrease productivity. (Fiaz, Su, Ikram, & Saqib, 2017)

To fulfil the organization's objectives, managers must develop strategies to strengthen communication and relationships with employees. Project Managers take on too many responsibilities or place too much responsibility on their team members. (MacNeil, 2021) Leaders must also encourage employees to participate in the decision-making process so that they may creatively identify issues and challenges. Having more group engagement and teamwork would develop a strong and clear direction working towards the same goal. They are also able to identify other ways to lead that might better serve to the current goals and

understand how to work with the teams and even with the managers who follow a different style than our own. (Team, 2022)

6. Conclusion

The main purpose of this study is to analyse and evaluate the impact of leadership styles on the performance of Malaysia's large oil and gas projects. A survey questionnaire was sent to 55 project management team members who were participating in the Malaysian Oil and Gas Project. The purpose of the structured questionnaire was to collect primary data from the participants.

The Multi Factor Leadership Questionnaire (MLQ) was used to assess leadership styles, while the multiple regression method was used to determine how the independent variable is connected to the dependent variable, in this case the success of these mega oil and gas projects. Data was analysed using demographic and descriptive approaches, while Pearson's correlation and regression analysis were utilized to evaluate correlations between variables to justify the hypotheses of the study.

To summarize, the outcomes of this study suggest that both democratic and laissez-faire leadership have a significant impact on project success, based on data analysis using SPSS. Autocratic leadership, according to this research, has a detrimental impact on project success. For future work, it is recommended that more comprehensive survey is done to access more respondents in the oil and gas industries. Due to the time constraint of this project, the focus of the respondents was limited to few oil and gas companies. The limitation on the Qualitative method is also profound due to limited number of interviews that could be carried out. The analysis of the quantitative data could consider the demographic variables. For more accurate study, information on project financial data, and other project data including project schedule, resources and team sizes would enable future research to gauge the successful of mega projects in oil and gas.

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