SURESH GYAN VIHAR UNIVERSITY, JAIPUR

SCHOOL OF MANAGEMENT

PROJECT REPORT ON

A STUDY ON SIX SIGMA IMPLEMENTATION AND SUCCESS IN THE OIL AND GAS INDUSTRY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF MBA PROGRAMME OF AMITY SCHOOL OF DISTANCE LEARNING

PROJECT GUIDE:

MR. XXXXXXXXXX

SUBMITTED BY:

XXXXXXXXXX

ENROLLMENT NO.: XXXXXXXXXX

MBA 2 YEARS

Declaration

I, XXXXXXXXXXXXX certify that the project report entitled **"A STUDY ON SIX SIGMA IMPLEMENTATION AND SUCCESS IN THE OIL AND GAS INDUSTRY"** "is an original one and has not been submitted earlier to Suresh Gyan Vihar University or to any other institution for fulfillment of the requirement of a course of management programme (MBA)

Name: XXXXXXXXXX

Enrollment No.: XXXXXXXXXX

ACKNOWLEDGEMENT

The excitement, satisfaction, and pleasure that come with successfully finishing any task would not be complete without giving appreciation to those who made it possible. Hard work is the key to success in any activity, but it may be impossible without the correct guidance. I thus want to sincerely and respectfully thank everyone who helped me finish this project.

I used this opportunity to express my sincere gratitude to XXXXXXX throughout the project, as her essential advice enabled me to concentrate my efforts in the right path.

Lastly, I would want to thank everyone who filled out the survey and provided me with information that enabled me to generate the sample data.

TABLE OF CONTENTS

ABSTRACT / EXECUTIVE SUMMARY

Within a well-defined framework, this research offers a concise summary of Six Sigma adoption and success in the oil and gas sector using the ideas of process quality management, safety, and environmental protection. Included is a review of the literature that addresses both positive and negative viewpoints about the use of Six Sigma in business. The main conclusions drawn from the oil and gas industry's successful use of lean are examined and collected. Companies may discover that the Lean Six Sigma methodology enhances the effectiveness and functioning of their processes. Six Sigma's primary goal is to implement a process that systematically eliminates errors and inefficiencies. Six Sigma applies a set of quality management techniques by using statistical data and the creation of specialized human resources, often called "champions," inside the company.

Every Six Sigma project is carried out internally inside an organization with specific financial objectives and a predetermined schedule. In the end, Six Sigma is customer-focused, with the primary goal being to provide outstanding performance, value, and dependability to the client. Today, one of the fundamental principles of Total Quality Management (TQM) is Six Sigma.

Although Lean Six Sigma is often linked to manufacturing processes, it may be applied to any business, regardless of the kind of operation. The use of Lean Six Sigma concepts has produced noteworthy breakthroughs and advantageous enhancements. This is true in the oil and gas sector.

Due to variations in procedures, supply chain anomalies, and other problems, the oil and gas business is a massive one that has an impact on the whole globe. A large portion of these challenges are caused by innovation, unforeseen environmental circumstances, price volatility, and the use of strategies to increase total productivity with little waste. Business process training, lean management, IS 9000, Total Quality Management, Kaizen, Just-in-time manufacturing, and enterprise sourcing planning are just a few of the techniques that have been developed to enhance industrial engineering and quality management.

CHAPTER 1: INTRODUCTION

It should be noted that senior management is just as crucial to the success of Six Sigma initiatives. If these tactics aren't backed up by sensible management choices, they work. Adoption of Six Signs or Leen requires these strategic decisions. Rather than the technique itself or its limitations in a given industry, the inability to use Six Sigma is often caused by the intricate organizational structures of certain firms or a lack of communication between all participants, supervisors, and senior management. Before putting any of these improvement ideas into practice, it is essential to examine, recognize, and assess the performance, management choices, and circumstances that exist now. If a company already has a successful performance and process improvement project that regularly meets customer-focused objectives or is very comparable to Lean or Six Sigma, then using Six Sigma, Lean, or any other approach is not required. Many firms find it difficult to implement new improvement projects because they need a substantial culture shift and may require a substantial amount of training time. The timing of implementation may not be optimal if the existing situation is already taxing people and resources. The previous sections discuss the terms and methods used in Six Sigma, Lean, and Kaizen.

Using six sigma techniques in the oil and gas industry requires a deep understanding of the underlying concepts and driving forces behind the procedures. Since Lean Six Sigma handles problems or difficulties with a new way of thinking rather than with new tools or old tools paired with new ones, it is difficult to replicate the successful deployments of GE, Toyota, 3M, and others. If replicated, the outcomes may also be surprising and difficult to sustain consistently.

To guarantee that Lean Six Sigma is seen as an improvement technique that aims to identify and address the organization's most critical challenges, instructors must adopt its tenets and practices. This offers a more direct, scientific method of working that enhances the organization's overall functioning, production, and supply, replacing the antiquated methods of working with complex signals, gut feelings, top-down management chains, etc.

CHAPTER 2: INDUSTRY PROFILE

One of India's The One of the top eight, the oil and gas sector has a big say in what the other main economic sectors decide to do.

India is expected to need more oil and gas since its energy demands are closely tied to its economic growth, which would increase the sector's appeal to investors.

To meet the increasing demand, the government has launched many programs. In a variety of industries, including refineries, natural gas, and petroleum products, it has supplied 100% Foreign Direct Investment (FDI). It currently draws both local and international investment, as seen by the existence of Reliance Industries Ltd. (RIL) and Cairn India.

According to IEĭ (India Industrial Revolution 2021), primary energy consumption is predicted to almost quadruple to 1,123 million tons of oil equivalent by 2040, when the country's GDP is projected to reach USD 8.6 trillion.

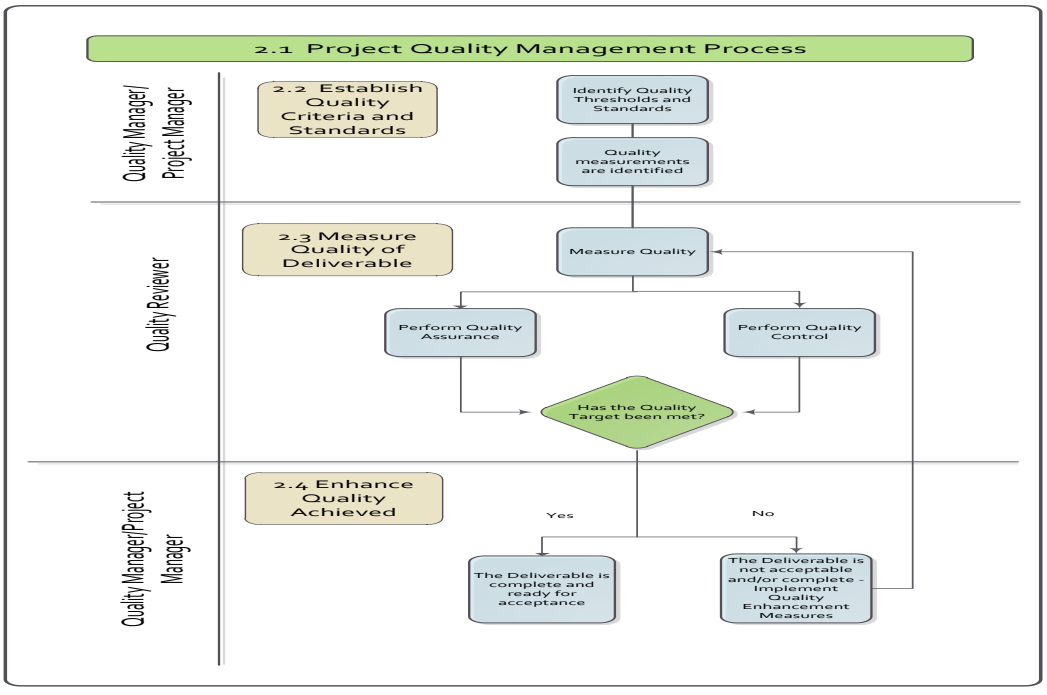
CHAPTER 3: REVIEW OF LITERATURE

Six Sigma and Quality Process

Overview

By using clearly defined quality assurance and control processes, the quality management process seeks to guarantee that the quality goals mentioned in the quality review form are met. Setting quality standards and criteria, assessing the quality of the items given, and raising the bar are the three key processes that this project will use to establish quality management.

The following graphic illustrates the duties and procedures that must be followed in order to guarantee and control the caliber of deliveries and project operations.



Establish Quality Criteria and Standards

The project team must be well aware of the quality goals (objectives) and processes (approaches) in order to ensure effective project outcomes and high-quality outputs.

Establish Qualitative Goals

A company's purpose and strategy will dictate its quality goals. Quality objectives must be measurable, satisfy product specifications, and have customer approval. The Quality Review Firm's example below demonstrates the need of clearly and concisely defining quality goals:

Quality Target			
Project Requirement	**Project Deliverable**	**Quality Criteria**	**Quality Standards**
Example: New financial receivable and payables processes management solution with accounts	*Example: Implementation of General Ledger (GL), Oracle Financials Receivable (AR) system modules Accounts Payable (AP) and Accounts*	*<u>System functionality</u>* *GL tested/installed* *AP tested/installed* *AR tested/installed*	*System functionality* *GL operational, no errors* *AP operational, no errors* *AR operational, no errors*

Identify How to Measure & Assure Quality

A set of tools is needed to transform aspirational objectives into something that can be clearly defined and tracked since a company's purpose and goals may be too broad.

To determine if a project delivery or operation was successful or unsuccessful, certain measuring criteria will need to be established. Metrics like revenue, mistake rates, and key performance indicators are quantifiable data that will track the quality of deliveries and processes inside a project. The Quality Review form has to provide documentation of these standards.

Assess the Quality of Deliverables

This duty relates to the process of implementing quality control and assurance measures to determine the actual level of quality of each process and product used throughout the project.

Assurance of Performance

Quality assurance may be defined as "the preventative measures taken to increase the likelihood of delivering a deliverable and reaching the quality targets set." Quality assurance methods are often used at the project summary level by an outside project source. Either external third parties or internal project resources may be employed to ensure quality. **Examples include:**

• problems Perform project audits and process checklists.To clearly define the level of quality that is required and to identify the areas where quality issues are most likely to arise, it is essential to reiterate the quality criteria that must be met.

• Hiring competent people to oversee procedures and provide results

Setting exact quality requirements to make sure the project is moving forward according to schedule Modify the control to reduce the likelihood of quality.

CHAPTER 4: OBJECTIVES OF THE STUDY

Examine the six sigma techniques used for process improvement in the oil and gas sector;

(2) ascertain their role in the sector;

(3) evaluate their effectiveness; and

(4) offer suggestions for how the sector might better implement six sigma techniques for process improvement.

CHAPTER 5: RESEARCH METHODOLOGY

Research methodology is a approach for addressing the research problem in a thorough manner. It might be regarded as a science that studies scientific research methodologies. the explanation of the research question and the study's justification. What data was gathered, what specific method was used, and how and why was the hypothesis created? When assessing research methodology in relation to a project or study subject, we often take into account the rationale behind the employment of certain data analysis techniques in addition to other pertinent factors.

The research design connects the decisions made (the research aims) with the actions required to carry out the investigation. The study conducted for this project is conclusive. Data from proven studies help in rational decision-making.

The descriptive design was chosen in order to ascertain the degree of customer satisfaction based on a variety of aspects, including quality, pricing, features, technology, after-sales services, etc. This design guaranteed complete accuracy and clarity. Additionally, it ensured little bias in data collection and decreased errors in data interpretation. The statistical method was used in this study since the data was descriptive in nature and allowed for accurate generalizations.

Sources of Data

Primary data

Since primary data are recently acquired and gathered for the first time, they seem to be special in the field of chemistry. It was gathered using questionnaires and in-person interviews.

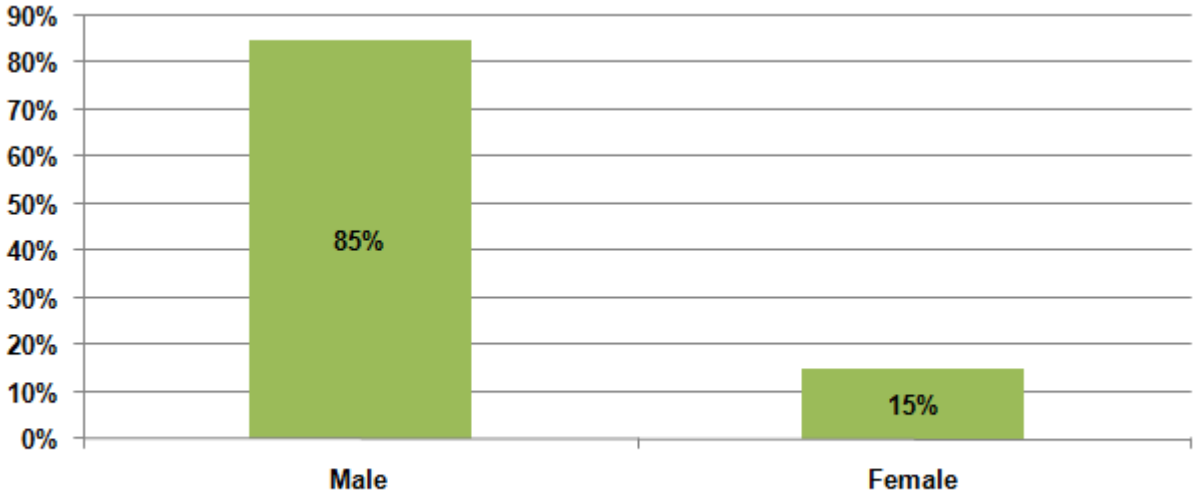
The number of answers: Delhi/NCR: 100 The area of research

Data presentation method: Primary data is presented using bar graphs and basic perimetric techniques.

Secondary data is information that has already been gathered and statistically analyzed by another organization. After the data was gathered, company profiles were created using the websites and news articles. Some of the texts were cited for theoretical reasons.

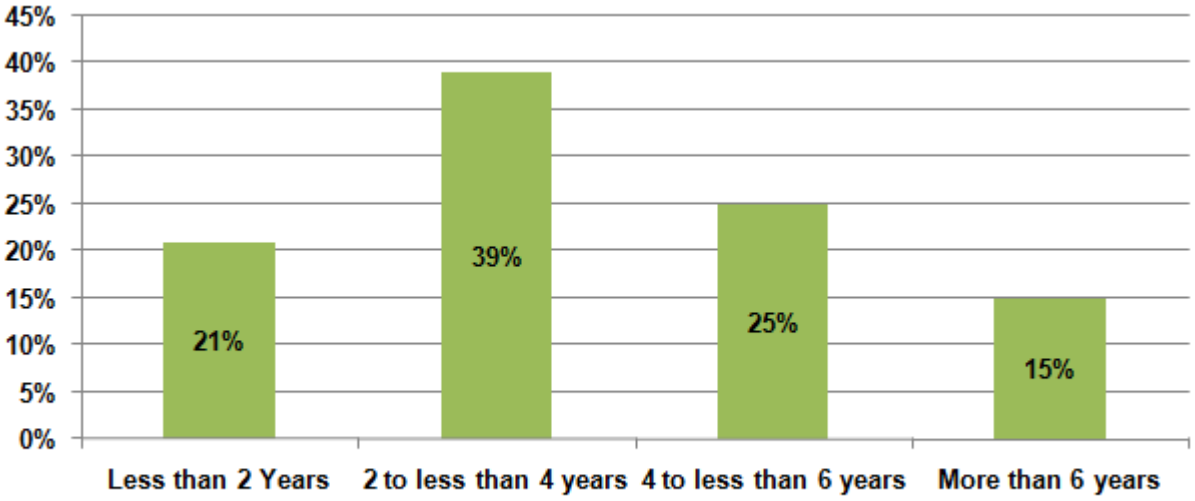
CHAPTER 6: DATA ANALYSIS & FINDINGS

Q1. Gender

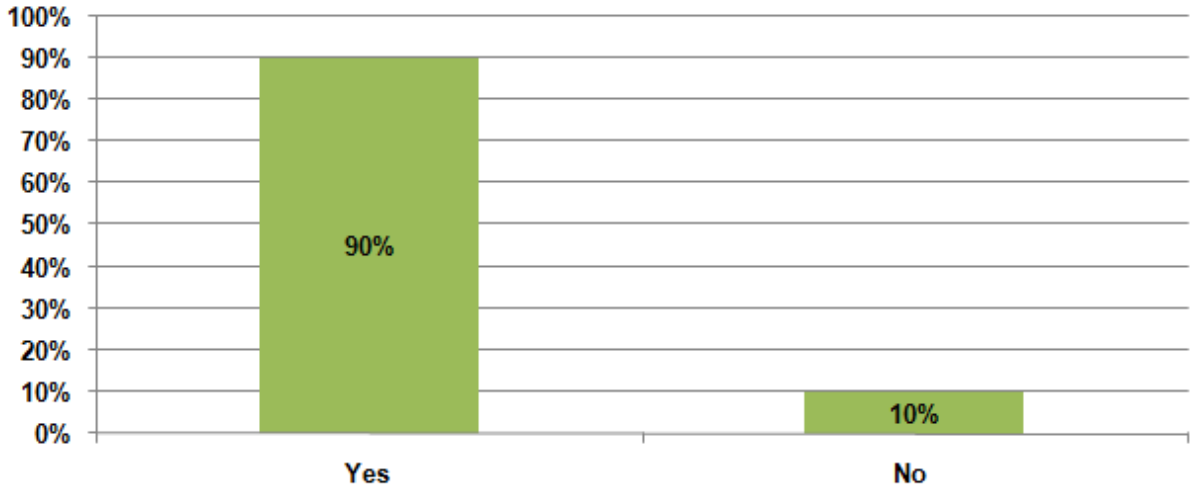


Male respondents made up 85% of the sample, while female respondents made up 15%.

Q2. From how many years you have been working in oil and gas industry?

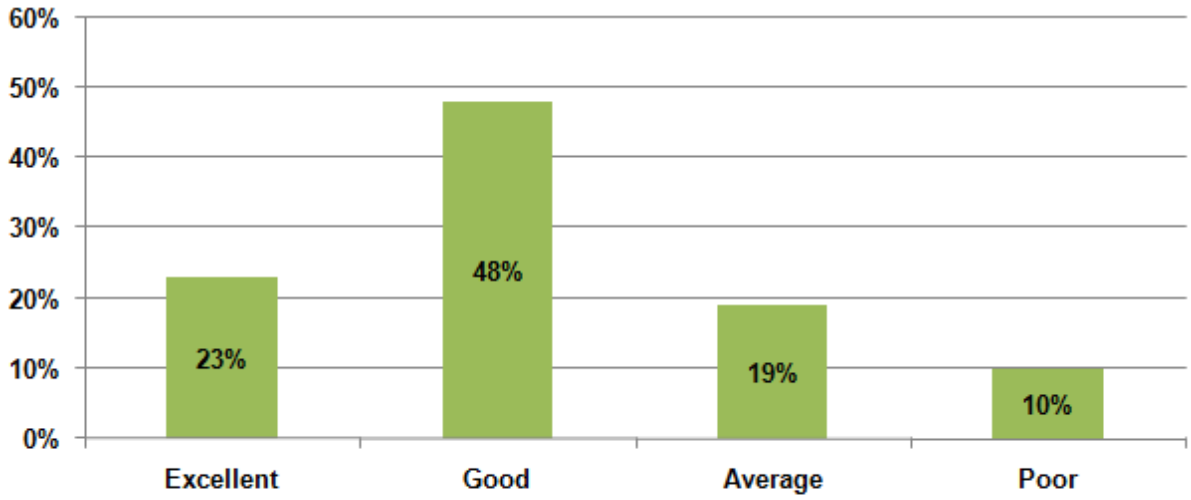


Q3. Did you participate in your company's Six Sigma implementation process?



Ninety percent of those surveyed claimed to be aware of the company's Six Sigma practices.

Q4. How will you assess your level of knowledge about the Six Sigma techniques used at the company?



Although 23% of respondents claimed to understand the Six Sigma methods employed in the organization extremely well, 48% of respondents claimed to know a lot about them.

CHAPTER 7: CONCLUSION AND SUGGESTIONS

7.1 Conclusion

• When used properly, Six Sigma offers several benefits, regardless of whether the problem is management, operational, logistical, financial, or something else completely. Positive outcomes are assured if all prerequisites are satisfied before proceeding.

•The oil and gas sector is unfamiliar with many of the tools and ideas used in Sigma. The case studies also show that when the right statistical tools and up-to-date information are used, a rigorous approach combined with change leadership and vision may provide positive outcomes.

• Any company that wants to flourish must use Six Sigma, which ensures continuous improvements and defect reduction, especially in the oil and gas sector.

•Collaboration and communication are also essential for success at the management and technical levels. The development or efficacy of the Six Sigma technique may be impeded by certain policies. It is necessary to modify, remove, or relieve certain limitations. For the purpose of the company's growth, management shouldn't change its regulations.

7.2 Suggestions

• Employees should be given the opportunity to voice their opinions or anything else they may like to.

• Management should communicate the organization's vision, mission, and objectives to staff members.

Management should include workers' representatives in managerial actions to maintain transparency and win over the workforce.

• Giving someone praise or a reward has a big influence on their life and motivates them to work more. • Management should give special attention to the social and cultural development of workers who put in a lot of effort for the firm.

• All tasks have to be well-defined and contingent on each individual's capacity to fulfill their responsibilities.

encouragement of a self-potential system; frequent comparisons and assessments of performance in the past and present to identify significant deviations from the plan; and the need for appropriate internal collaboration.

BIBLIOGRAPHY

- O'shaughnessy, K. C., and Þhire, S. L. (2016). The function of the senior management committee in quality management: an empirical examination of the automotive sector. Journal of Quality Science International, 3(1), 5–37.
- Kilmann, R. H., and Þllen, R. S. (2018). The role of the rewaard system in a strategy based on quality management. Organizational Change Management Journal, 14(2), 110-131
- Þnderson, J. C., Schroeder, R. G., Rungtusanatham, M., & Devaraj, S. (1995). Path analysis of a quality management theory supporting the Deming management method: preliminary empirical results. 637–658 in Decision Sciences, 26(5).
- L. Bani Ismail (2012). This dissertation from the University of Huddersfield examines the implementation of Total Quality Management (TQM) in the construction industry in the United Kingdom and Jordan.
- Porter, L. J., and S. Þ. Black (1996). Definition of the TQM critical factors. 1–21 in Decision Sciences, 27(1).
- Đ. Babshit (2006). TQM Implementation's Critical Success Factors (CSFs) in Saudi Arabian Industries, Industrial Study (PHD Thesis, King Fahad University Þl-Đnazi ID#932513).
- Day, S. (2016). Research on quality management practices in northern India's electronics sector (Doctoral dissertation, Chitkara University, Himachal Pradesh).
- Dow, D., Ford, S., & Samson, D. (1999). Dispelling the myth: do all quality management techniques lead to superior quality performance? Management of Production and Operations, 8(1), 1–27.

ANNEXURE-QUESTIONNAIRE

Q1. Gender

Male

Female

Q2. From how many years you have been working in oil and gas sector?

Less than 2 Years

2 to less than 4 years

4 to less than 6 years

More than 6 years

Q3. Are you involved in Six Sigma implantation process at company?

Yes

No

Q4. How will you rate your knowledge level about Six Sigma techniques used at company?

Excellent

Good

Average

Poor

Q4. Six sigma techniques used at company are much more accountable

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

Q5. Rate the Six sigma techniques used at company in terms of reducing the defects?

Outstanding

Excellent

Good

Average

Q6. Accenture Limited is successfully managing the quality of its process through sig sigma techniques?

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

Q7. Members in your team are well versed in Six Sigma and also able to apply the concepts to the company's strategic goals

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

Thanks for your co-operation!