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## RESEARCH ARTICLE

### PERCEPTION OF OPERATIONAL EFFICIENCY AMONG WHITE COLLAR EMPLOYEES IN ABU DHABI NATIONAL OIL COMPANY (ADNOC), UNITED ARAB EMIRATES.

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#### ABSTRACT

The project entitled 'A Study on the Perception of Operational Efficiency Among White Collar Employees in ADNOC, Al Ain, UAE' is a study of the operational efficiency of the white collar employees in different categories in order to measure the efficiency with reference to the operational side of the Abu Dhabi National Oil Company at Al Ain, a province of United Arab Emirate. The researcher conducted this study amongst 30 White collar employees of the company with the help of Questionnaire method of data collection consisting of 20 closed ended and one open ended questions in the relevant areas of the study. The operational efficiency is one of the important and crucial area of the management of an organisation in the operations management that influence the success, survival and efficiency. This area is of most important in the present era of the globalised and privatized business environment globally. In this study, the researcher conducted the data collection and analysis of operational efficiency with respect to the, product design, redesign, planning, material planning, handling, control and the distribution, logistical issues, maintenance management, and the utilisation efficiency of ADNOC, Abudhabi.

## INTRODUCTION

Operations Management forms the base of every organization, whether in manufacturing, service or non-profit industries. Operations Management & Logistics is a multidisciplinary field that comprises disciplines such as product development, quality management, logistics, information systems and human resource management. Operations extend from the performance management of a group of design engineers or building in quality-feedback loops to the precise prediction of production and delivery performance. Logistics has been performed since the beginning of civilization. Logistics involves the integration of various processes like transportation, inventory, warehousing, material handling, information and packaging. Implementing best practice of logistics has become one of the most exciting and challenging operational areas of business and public sector management. One of the several competencies required to create customer value is efficient logistics. The oil and gas industry is one of the key sectors of the UAE economy. Oil policy for Abu Dhabi is determined by the Supreme Petroleum Council that was set up in June 1988. Its chairman is the Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, Sheikh Khalifa bin Zayed Al Nahyan, and its Secretary-General is Yusif bin Omair Yusif, the Chief Executive Officer of ADNOC. Among the Supreme Petroleum

Council's responsibilities is management control of ADNOC. This company in turn owns a range of subsidiaries in the UAE and overseas which specialize in upstream and downstream oil and gas operations, as well as distribution, shipping and all other aspects of the hydrocarbons industry.

#### Review of Literature

Christopher M. Chima, Supply Chain Management Issues in the Oil and Gas Industry, *Journal of Business and Economic Research*, 2007, <http://cluteinstitute.com/ojs/index.php/JBER/article/view/File/2552/2598>: The oil and gas industry is involved in a global supply chain that includes domestic and international transportation, ordering and inventory visibility and control, materials handling, import/export facilitation and information technology. Thus, the industry offers a classic model for implementing supply chain management techniques. In a supply chain, a company is linked to its upstream suppliers and downstream distributors as materials, information, and capital flow through the supply chain. The purpose of this paper is to investigate the role of supply chain management in the oil and gas industry. This paper also discusses the application of the Uniform Commercial Code (UCC) to supply chain management issues. Then, several strategies are examined for improving supply chains in the oil and gas

industry. Finally, two case studies are introduced to show how improving supply chain logistics in the oil and gas industry can improve efficiency and the bottom line.

*Derek Anienwelu, An Investigation into the Effectiveness of the Local Content Policy in the Nigerian Oil and Gas Sector*, [http://www.academia.edu/8871974/An\\_investigation\\_on\\_the\\_effectiveness\\_of\\_the\\_oil\\_and\\_gas\\_sector\\_in\\_Nigeria](http://www.academia.edu/8871974/An_investigation_on_the_effectiveness_of_the_oil_and_gas_sector_in_Nigeria), Date of Retrieval: 12<sup>th</sup> October 2015. Present research has been conducted in order to investigate the effectiveness of the Local Content Policy in the Nigerian Oil and Gas Sector. With the help of this research, efforts are made to identify whether this policy has implemented or not in a desired manner. Also, barriers to entry of small local firms have been evaluated in oil and gas industry through this research. Meanwhile, skill shortage areas of the oil and gas industry have also been recognized for local firms in this study. It is an exploratory study that offers an idea about the actual scenario of Nigerian Oil and Gas Industry Development Bill, 2010 and benefits that has been attained through it.

In present research, both set of data has been collected in order to conclude this research in a precise manner. Primary data has been collected with the help of interview techniques that involves semi structured questions. For this, four local firms have been chosen that are operating in oil and gas sector of Nigeria. Among these firm, senior officials are selected in order to gain different sort of information from them. Present study has involved non probabilistic sampling techniques under which purposive sampling have been employed in order to select four local firms that are operating in Nigerian oil and gas sector. Further, two officials from each firm are selected in order to attain different sort of data from it. Therefore, a total of seven to eight respondents are chosen for interview in order to gain desired inferences through this study. Qualitative data analysis has been done in order to attain detailed description of effectiveness of local content policy of Nigerian oil and gas industry. In this context, thematic method has been engaged. With the help of this study, it has concluded that local content policy possesses effectiveness for local firms of Nigeria through which they are able to operate appropriately under oil and gas sector. It is evident that local companies gains different sort of benefits from this policy such as support from government, contracts to work with multinational companies, experiences of working effectively and as per the industry standards and other related. Further, this bill boosted the level of employment in Nigeria that certainly boosted overall growth rate. Now, local firms are able to compete with foreign firms in an effective manner as local content favors Nigerians in terms of first preferences for training and development, bidding, employment and in numerous other contexts.

*Sameer Kumar, Ralph Harms, (2004) "Improving business processes for increased operational efficiency: a case study", Journal of Manufacturing Technology Management, Vol. 15 Iss: 7, pp.662 – 674. www.emeraldinsight.com:* In manufacturing, corporate growth and profitability are more challenging than ever before. The company reviewed in this study has been and is currently suffering tremendous growing pains with poor record of profitability. This paper reports learning and application of a few significant techniques to improve basic business practices in a company, which manufactures large volume, high quality optical thin film coatings. Some of the tasks involved in identifying opportunities for improving operational efficiencies included

analysis of current business processes, identification of non-value-added activities including wastes and proposing process changes. Process mapping and *kaizen* “blitz” activities were utilized during analysis of key business processes within this company. The study demonstrates measurable results realized through use of process mapping tools, *kaizen* blitz activities, formalized and documented work instructions and work measurement tools. To ultimately be successful, a company must educate their workforce and create a fulfilling work environment for each of their employees. Worker involvement is essential and critical in today's society. Gaining the worker's trust and commitment is extremely important

Peter R. Hartley, Kenneth B. Medlock, III., *The Quarterly Journal of the IAEE's Energy Economics Education Foundation Volume 34*, [www.iaee.org/en/publications](http://www.iaee.org/en/publications): Using data on 61 oil companies from 2001-09, we examine the evolution of revenue efficiency of National Oil Companies (NOCs) and shareholder-owned oil companies (SOCs). We find that NOCs generally are less efficient than SOCs, but their efficiency increased faster over the last decade. We also find evidence that partial privatizations increase operational efficiency, and (weaker) evidence that mergers and acquisitions during the decade tended to increase the efficiency of the merging firms. Finally, we find evidence that much of the inefficiency of NOCs is consistent with the hypothesis that government ownership leads to different firm objectives.

*David Fine, Maia A. Hansen, and Stefan Roggenhofer, From lean to lasting: Making operational improvements stick, McKinsey Quarterly, November 2008, www.mckinsey.com:* For companies seeking large-scale operational improvements, all roads lead to Toyota. Each year, thousands of executives tour its facilities to learn how lean production—the operational and organizational innovations the automaker pioneered—might help their own companies. During the past 20 years, lean has become, along with Six Sigma, one of two kinds of prominent performance-improvement programs adopted by global manufacturing and, more recently, service companies. Recently, organizations as diverse as steelmakers, insurance companies, and public-sector agencies have benefited from “leaning” their operations with Toyota's now-classic approach: eliminating waste, variability, and inflexibility.

The broader challenge underlying such problems is integrating the better-known “hard” operational tools and approaches—such as just-in-time production—with the “soft” side, including the development of leaders who can help teams to continuously identify and make efficiency improvements, link and align the boardroom with the shop floor, and build the technical and interpersonal skills that make efficiency benefits real. Mastering lean's softer side is difficult because it forces all employees to commit themselves to new ways of thinking and working. Toyota remains the exemplar: while many companies can replicate its lean technology, success on the softer side often eludes them.

*Sheila Shaffie, Shahbaz Shahbazi, Dennis Campbell, Operational Efficiency: Process Improvement Opportunities for Credit Unions.*, [www.fileline.org](http://www.fileline.org): A competitive marketplace requires that companies provide quality products and services at the right value in order to capture market share.

To achieve this, they have to actively measure and improve their operational efficiency across their entire value chain.

Efficiency at its core is about producing more and better products and services with the same or fewer resources. This requires minimization of waste and maximization of resource capabilities. The end result has a direct impact on the organization's profit margin: Getting rid of waste and inefficiency reduces operational cost while improving the overall quality of service, which allows for capturing more market share.

### Process Efficiencies of Unconventional Oil & Gas.” Canadian Energy Research Institute (CERI).

**www.ogj.com/articles:** Measures can be taken by operators in the expanding resource-intensive Canadian oil and gas sector to improve both energy efficiency and operational efficiencies, according to a report from the Canadian Energy Research Institute (CERI). Primary options for improving energy efficiency include using readily available, economically viable technologies that reduce overall energy consumption, which may not be used currently because of the age of a facility or slow adoption of new technologies, the report says. Strategies range from optimizing the operations of existing equipment to replacement of outdated equipment with more modern, energy efficient versions. CERI cites as an example that “significant” energy savings can be had in steam assisted gravity drainage (SAGD) operations by adding mechanical down hole pumps rather than using reservoir pressure to retrieve bitumen from a well. In oil sands mining, use of paraffinic froth treatment to partially upgrade bitumen through asphaltene removal can eliminate the need for an onsite upgrader, which reduces the overall life cycle emissions of mined oil sands bitumen. Adopting best practices can result in a 10% reduction in energy consumed per unit of production, with improvements by way of lower GHG intensity, lower air emissions, and lower operating costs, the report says.

C. B. Tilanus, Department of Industrial Engineering, Eindhoven University of Technology, Measuring Operating Efficiency, *Journal of the Operational Research Society* (1975) 26, 63–69. doi:10.1057/jors.1975.8, www.palgrave-journals.com. An efficiency of a given variable is often defined as the actual value expressed as a percentage of the maximum value. It seems attractive to generalize the efficiency concept to the overall operation of a (sub-) system, e.g. a plant or a division of a firm. Two such operating efficiency measures are developed. One is based on that part of total deviation of overall operating result from the maximum for which management may be held responsible. The other is computed as the average of the efficiencies of the decision variables weighted by the elasticities of operating result with respect to the decision variables involved. Hung-Chung Su<sup>a</sup>, Kevin Linderman<sup>b</sup>, Roger G. Schroeder<sup>b</sup>, Andrew H. Van de Ven<sup>c</sup>, *A comparative case study of sustaining quality as a competitive advantage*, www.sciencedirect.com. Many organizations have achieved high levels of quality performance only to lose it later on. These firms that were once quality leaders can no longer compete on the quality of their products or services. This research develops a theoretical understanding of how organizations can sustain a quality advantage. It offers a conceptual definition of sustaining a quality advantage which involves not only sustaining a high level of quality performance, but also sustaining a high consistency of quality performance. A comparative case study provides evidence of three capabilities that distinguish firms with different levels of sustaining quality.

These capabilities include: (1) meta-learning, (2) sensing weak signals, and (3) resilience to quality disruptions. The case analysis argues that meta-learning helps sustain a high level of quality performance, while sensing weak signals and resilience improves the consistency of quality performance. This study offers a dynamic capability-based strategy that explains how to sustain a competitive advantage in quality, which may also have implications for sustaining other operational competitive advantages. Evelyne Vanpoucke<sup>a</sup>, Ann Vereecke<sup>b</sup>, Martin Wetzels, *Developing supplier integration capabilities for sustainable competitive advantage: A dynamic capabilities approach.*, www.sciencedirect.com. Previous research describes supplier integration as a competitive resource that manufacturers use to create economic rents. Considering the mixed results obtained from linking supplier integration with performance outcomes, a ‘dynamic’ component – or the ability to reconfigure the supply chain to adapt to changing environments – appears critical to creating a sustainable competitive advantage. This study identifies integration sensing, seizing and transforming as sub-capabilities that together form a dynamic capability, referred to herein as supplier integrative capability (SIC). That is, SIC enables buyers to sense changes in the supply environment by sharing information with suppliers, seize opportunities presented by establishing procedures to analyse this information and make long-term changes to existing processes. A global sample from the industrial sector reveals that the three capabilities exhibit complementarity and must exist simultaneously for the capability to be effective, which then enhances both process flexibility and cost efficiency and helps firms avoid the traditional trade-off of cost and flexibility. In addition, market and technological dynamics strengthen the effect of SIC on operational performance; supply base complexity attenuates this link.

Barbara B. Flynn | Baofeng Huo | Xiande Zhao, The impact of supply chain integration on performance: A contingency and configuration approach, *Volume 28, Issue 1, January 2010, Pages 58-71*. This study extends the developing body of literature on supply chain integration (SCI), which is the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organizational processes, in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer. The previous research is inconsistent in its findings about the relationship between SCI and performance. We attribute this inconsistency to incomplete definitions of SCI, in particular, the tendency to focus on customer and supplier integration only, excluding the important central link of internal integration. We study the relationship between three dimensions of SCI, operational and business performance, from both a contingency and a configuration perspective. In applying the contingency approach, hierarchical regression was used to determine the impact of individual SCI dimensions (customer, supplier and internal integration) and their interactions on performance. In the configuration approach, cluster analysis was used to develop patterns of SCI, which were analyzed in terms of SCI strength and balance. Analysis of variance was used to examine the relationship between SCI pattern and performance. The findings of both the contingency and configuration approach indicated that SCI was related to both operational and business performance. Furthermore, the results indicated that internal and customer integration were

more strongly related to improving performance than supplier integration.

### Objectives of the study

- To analyse the operational efficiency in different areas of operations existing in Abu Dhabi National Oil Company (ADNOC), Abu Dhabi.
- To offer suggestions for enhancing the operational efficiency of the organization in areas of operations of the company, if required.

## RESEARCH AND METHODOLOGY

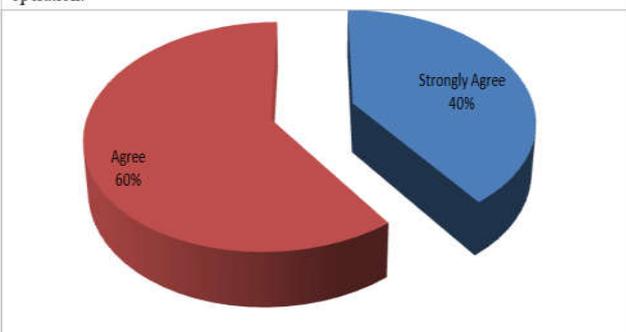
**Nature and Sources of Data:** The data used for this study is both primary and secondary. The primary data are collected from the employees of the organization of white collar job of 30 Nos. by using the methods like observation, interview and questionnaire. The primary data are collected from the various categories of employees white collar worked there at. The secondary data are collected from various journals, Thesis, websites, Dissertations and other published records.

**Sampling:** In order to collect the required primary data for this study the researcher was not in a position to conduct a census survey because it is practically beyond the reach of the researcher. Therefore the researcher should adopt the method of sample survey. The sampling chosen for this study is based on Judgement sampling technique. The researcher collected data from 30 white Collar employees.

**Tools and Techniques of Analysis:** In order to process and to analyse the data the researcher would proposes to use some statistical methods and techniques like measures of central tendency of Arithmetic Mean, and other data representation tables, charts and diagrams.

**E. Findings and Discussions:** With the help of a five point scaled questionnaire of 20 questions, the researcher collected data from the targeted respondents of 30 Nos. of white Collar employees of ADNOC Distribution Company from Al Ain Region. The questionnaire consisted of questions in order to evaluate the Operational Efficiency, update of technology, effectiveness of business process, design analysis, layout, facility location, scientific method of scheduling, design of processes, use of technology, Quality management, capacity planning, corporate culture, material planning, handling and control system, maintenance, replacement, cost reduction, corporate growth and profitability etc.. Sample Size: 30 Nos. Category of Respondents: White Collar

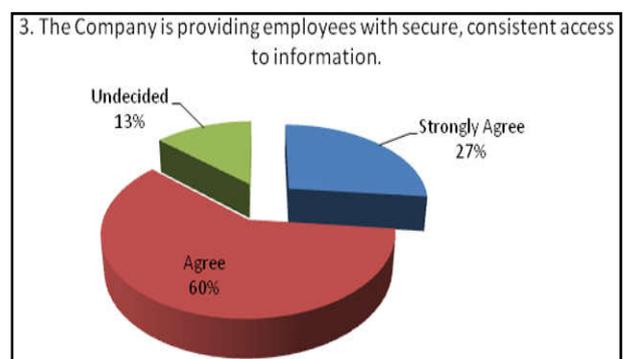
1. The machineries and equipment's of the company is updated to ensure the smooth operation.



**The machineries and equipment's of the company is updated to ensure the smooth operation:** For the smooth and efficient functioning of the organisation both cost effective and productivity efficient, the organizations in any sector are required to update their technology. The technologies in the Oil processing and distribution will change from time to time because of the Research and development taken place in the various parts of the world. The Researcher collected data related to the update of the machineries and equipments of the organisation for the smooth functioning of the organisation. In this survey Figure No. C5.1 shows that 40% of the participants Strongly Agree and 60% expressed an opinion of Agree with respect to the adoption of the updated machineries and equipments for the efficient and cost effective operation of the organisation.

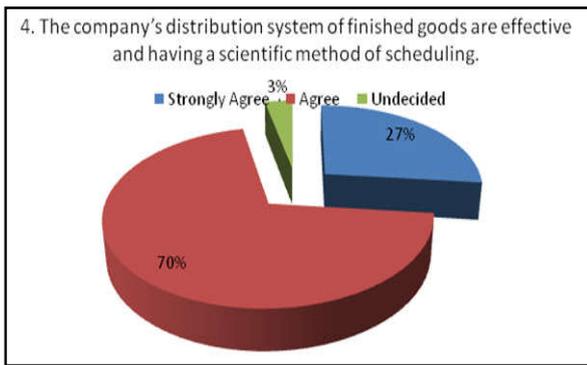


**The company is having effective business process with group organizations:** Regarding ADNOC's effective business processes and coordination with their group organisation, 20% of the respondents recorded a view of 'Strongly Agree', 70% of the respondents 'Agree' where as 10% recorded an attribute of 'Undecided'. With the above responses, the researcher can conclude that the Company is having a Good relationship, coordination and effective business process with the group organisation. This is one of the most important Strength of ADNOC for the success and to become one of the biggest company in the Oil extraction and refining sector in the world.

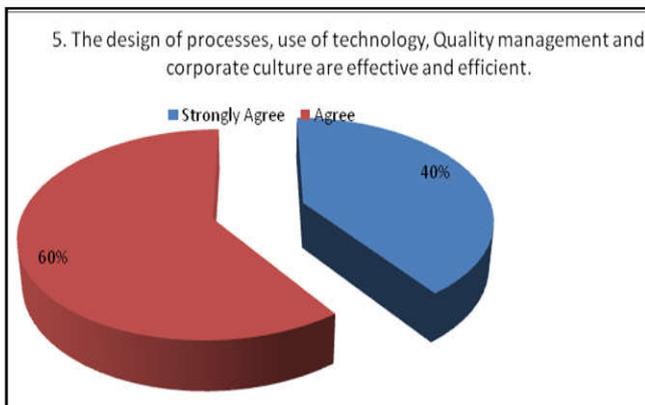


**The Company is providing employees with secure, consistent access to information:** Maintenance of the satisfied and efficient group of employees is one of the core competence and strength of the organisation that leads to the success of an organisation. For this the company has to provide secure and consistent access to information. In this regard, the researcher incorporated this question and the Questionnaire and collected data, 27% of the employees recorded a opinion of 'Strongly Agree', 60% recorded 'Agree', where as 13% recorded 'Undecided'. From the above discussion, the researcher can conclude that the employees are satisfied with respect to the

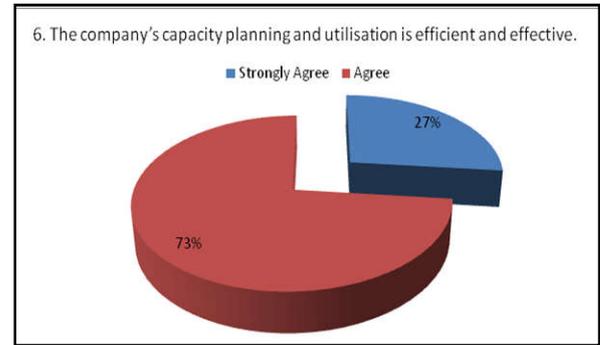
providence of secure and consistent information for the efficient management and operation of the enterprise.



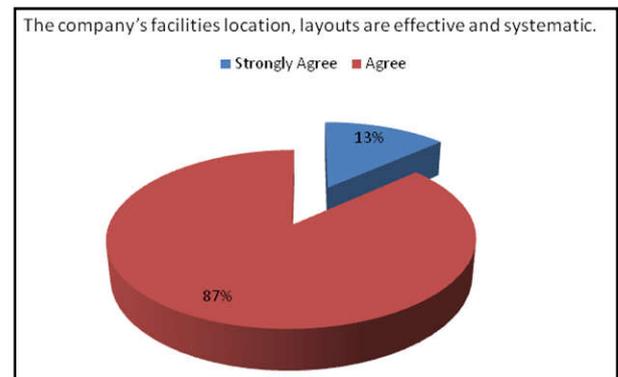
**The company's distribution system of finished goods are effective and having a scientific methods of scheduling:** The distribution system of finished goods of an organisation should be effective and efficient with scientific method of scheduling by using some operations research techniques like Transportation problem, CPM, PERT, Travel Chart etc. The success of an organisation depends up on the distribution of the finished goods systematically adopted method by minimizing cost and time. In this regard, the Researcher collected data and as per this survey 27% of the employees are recorded they are 'Strongly Agree', 70% of the respondents shown an opinion of 'Agree' where as 3% of them are recorded 'Undecided'.



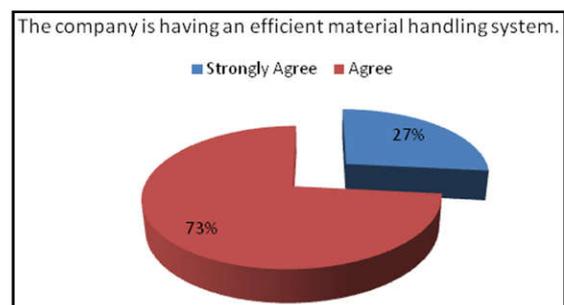
**The design of processes, use of technology, Quality management and corporate culture are effective and efficient:** The design of process and layouts, use of updated and modern technology, quality management of the various aspects on operations management, corporate culture etc. plays an important role for the efficient and effective operation of an enterprise. The company should plan, coordinate, organize and control the elements which related to the operation management of the organisation to enhance the productivity and efficiency of the organisation. In this survey with reference to the above mentioned question, 40% of the respondents recorded an opinion of 'Strongly Agree' and 60% recorded 'Agree', which shows that the ADNOC company is having an efficient and effective system of design of process, layouts, technological update, Quality Management System within the organisation for ensuring the providence of best quality products to the customers and the existing corporate culture in the company are good. ADNOC's one of the competitive strength especially at the present day business environment condition is best design of the processes, updated use of technology from oil extraction till distribution, quality management system and best corporate cultural practices.



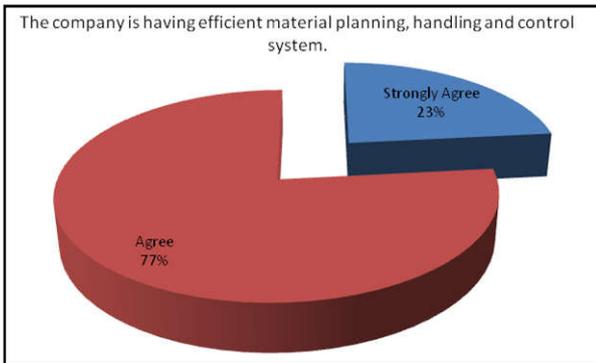
**The company's capacity planning and utilisation is efficient and effective:** One of the most important factor for the success of an organisation is the proper capacity planning and utilisation of the available resources in the best and optimum manner. With respect to the capacity planning and utilisation existing in the company's operation department, the researcher collected response from the 30 respondents from the company recorded that 'Good', 27% of the respondents recorded they are fully 'Strongly Agree' with this statement, where as 73% 'Agree'. So, the researcher can conclude that there is an efficient and effective system of capacity planning and utilisation existing in the company.



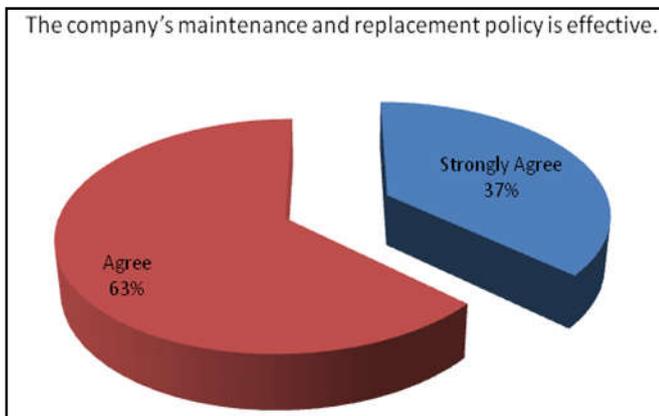
**The company's facilities location, layouts are effective and systematic:** As far as the Operations/Production Management of an enterprise is concerned, facilities location, layout of the plant and facilities are treated as the most crucial element for the effective and effective management of operations and there by the operational efficiency of the organisation. The company's facilities locations and lay out of the machines and services are properly and well planned for the effective utilisation of the resources in an effective and efficient manner. In this survey, the Researcher found that 13% of the participants of this survey recorded 'Strongly Agree' and 87% of them shown a response of 'Agree'. Therefore, the Researcher can conclude that the company is having an efficient and effective system of facilities planning and lay out existing in the organisation.



**The company is having an efficient material handling system:** Systematic and efficient methods of material handling system is another important factor for the success of an organisation. The material handling system of an organisation should be properly planned and executed according to the nature of the company. This system will vary from one company to another because of according to the nature of the production the system will differ. In this case, the Researcher executed questionnaire survey amongst the employees of this company and 27% of the respondents expressed an opinion that of ‘Strongly Agree’ and 27% recorded ‘Agree’ with respect to this statement. According this response, the Researcher can conclude that the respondents recorded an average response of ‘Good’, therefore the company’s material handling and distribution system is well designed, planned and systematic.

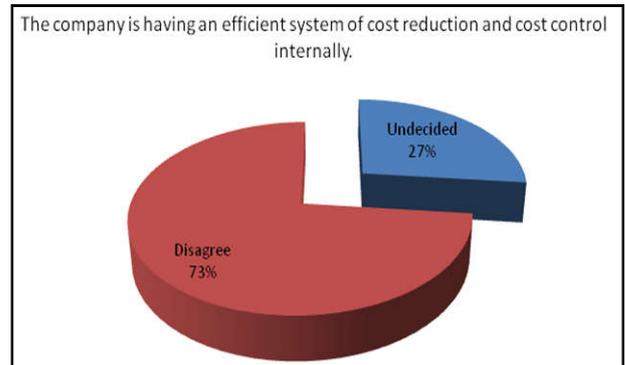


**The company is having efficient material planning, handling and control system:** The proper system of material planning, handling and material control is one of the important element in the efficient and effective conduct of an organisation because material is the most important element in the cost of production of any organisation. In a manufacturing company, on an average 60% of the total cost of production is the important resource called as material. So, the proper planning and handling of this important resource is most important for the production and effective selling of the product. Material control, cost reduction and value engineering system should be helpful to reduce the consumption of the material in an optimum manner and reduce the cost production and to offer products to the customers at the maximum possible minimum price.

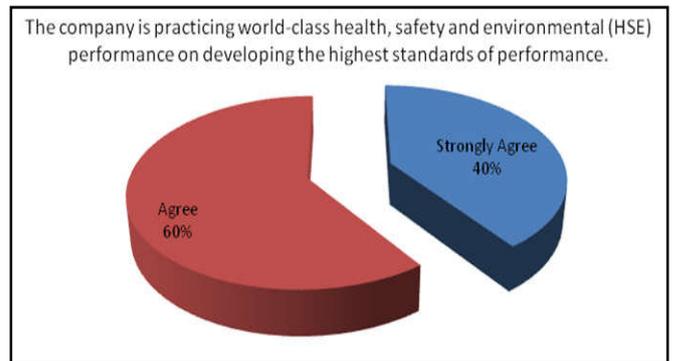


In this survey, the Researcher is given proper importance to this question and from the data collection, found that 23% of the respondents ‘Strongly Agree’ with this statement, where as 77% recorded an opinion of ‘Agree’.

The average response of the respondents of this survey showing ‘Good’, therefore the Researcher is in a position to conclude that the company is having an efficient and effective material planning, handling and control system existing in the organisation helpful to face the competition effectively.



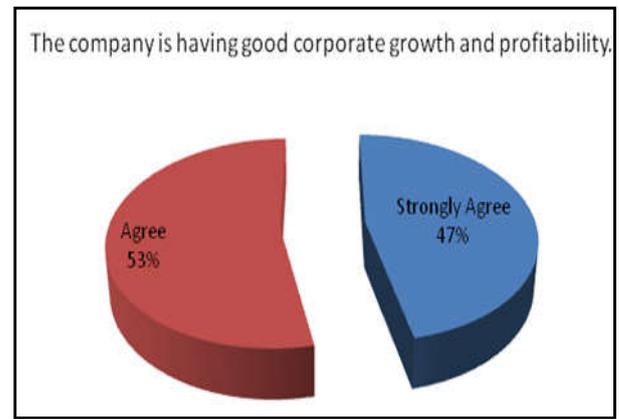
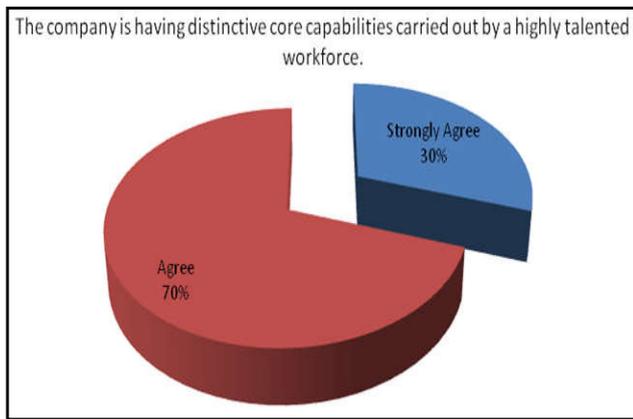
**The company's maintenance and replacement policy is effective:** Every machine and other service facilities are subject to deterioration due to their use and exposure to environmental conditions. If this process of deterioration is not checked, it may render them unserviceable. It is therefore necessary to attend to them from time to time, to repair and recondition them so as to enhance their life economically. A proper attention means lubrication, clearing, timely inspection and systematic maintenance. The maintenance is responsible for the smooth and efficient working of an industry and helps in improving the productivity. Maintenance Management and Replacement policy of the organisation is one of the crucial and important elements in the operational efficiency of any organisation. Every company’s operations department should pay more attention for the proper maintenance and replacement of the Plant and Machinery, equipments, facilities and service devices for the efficient and effective operation of the production uninterruptedly.



**From the manager’s point of view, the reasons for improving maintenance methods include;**

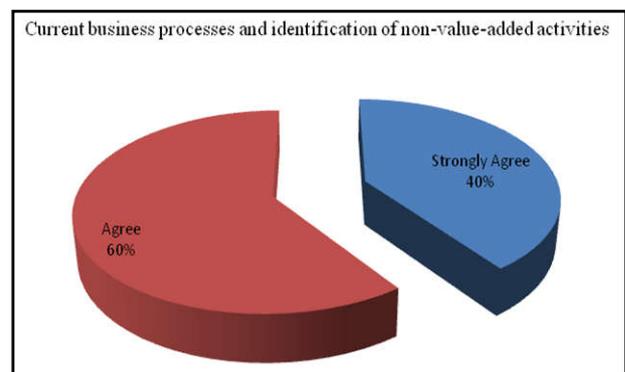
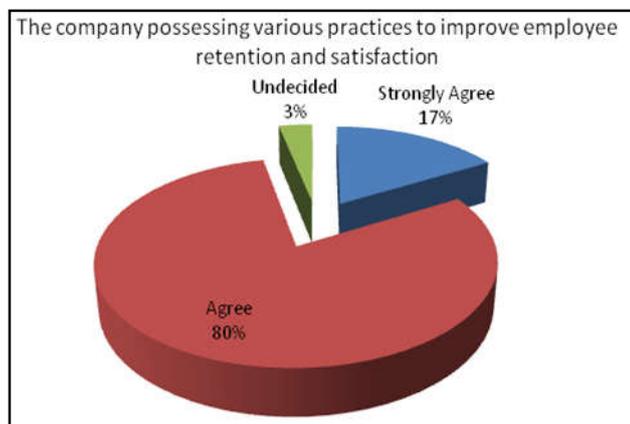
- Protecting the buildings and plants.
- Increased utilization and reducing downtime
- Economizing in the maintenance department
- Maximising utilization of resources
- Preventing wastage of tools, spares and materials.

In this survey, the Researcher executed the questionnaire with 30 respondents, 37% recorded ‘Strongly Agree’ and 63% ‘Agree’ with this statement. So, the researcher is able to conclude that, in this company, the management is providing utmost importance for the proper planning, maintenance and replacement of the machineries, plants, equipments, facilities and services.



**The company is having an efficient system of cost reduction and cost control internally:** Attaining high degree of customer satisfaction on performance front must be coupled with lower cost of producing the goods or rendering a service. Thus cost minimisation is an important systems objective. Costs can be explicit (visible) or implicit (hidden or invisible). The success of an organisation is highly depends up on the system of cost reduction and cost control system existing in an organisation and how efficient it is, especially at the present day of competitive business environment. In this regard, the Researcher conducted questionnaire survey in order to measure the degree of cost reduction, cost control and value engineering system existing in the organisation. 73% of the respondents of this survey recorded that they 'Disagree' with this statement, where as 27% recorded an opinion of 'Disagree'. From this response, the Researcher can conclude that, the company is providing least importance for the cost reduction, cost control or value engineering measures to improve the competitive edge of the organisation.

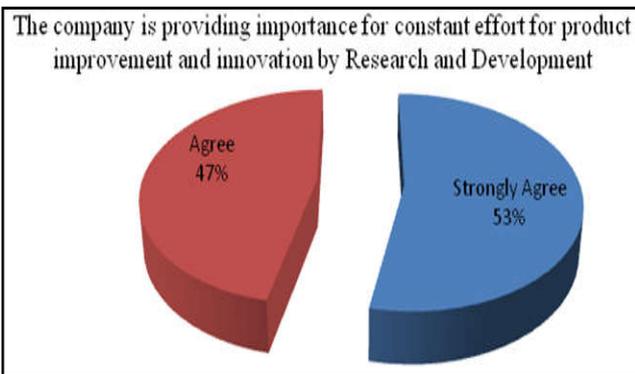
**The company is having distinctive core capabilities carried out by a highly talented workforce:** The core capabilities and talent of the work force/employees is one of the core competence of any organisation. This is the most important element for the success of an organisation, that is why the Researcher given more importance towards this perspective. In response to this statement, the employees recorded the senses that 30% of the employees recorded that 'Strongly Agree' with this point of view, 70% 'Agree' with this statement, showing on an average response of the attribute of 'Good'. The Researcher is strongly able to conclude that the company is possessing the distinctive features of core capabilities and competence and highly talented and skilled workforce to execute the operational activities result in the high operational efficiencies.



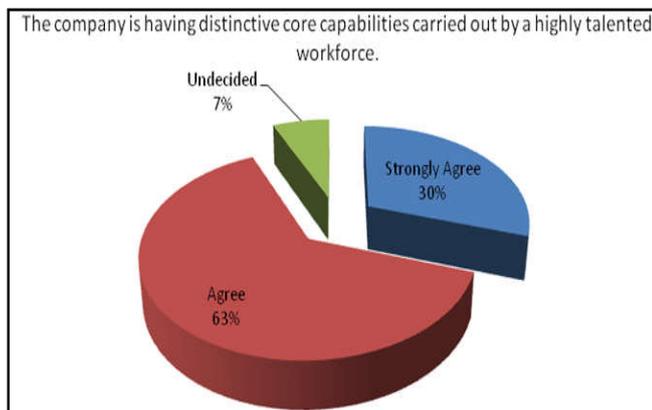
**The company is practicing world-class health, safety and environmental (HSE) performance on developing the highest standards of performance:** The safety, health and welfare of the employees are the most important element for obtaining best productivity from the employees. More over it is compulsory to provide such kind of safety, health and welfare measure as per law to run the enterprise legally. Regarding this issue, the researcher collected data from the respondents of this survey, 40% of them expressed 'Strongly Agree' 60% recorded 'Agree'. In this case, it is very clear from the statement that the employees of the organisation are satisfied with the health, safety and environmental performance of the company for the improvement of the productivity of the organisation and the company's efforts towards this is up to the mark.

**The company possessing various practices to improve employee retention and satisfaction:** The employees retention and satisfaction and reduction of the employees turnover and absenteeism is one of the important factor to improve the productivity and operational efficiency of any organisation. Therefore, the company should take appropriate measures to improve the employee retention and satisfaction of them. The researcher collected data in this regard, and found that 17% of the employees are 'Strongly Agree', 80% recorded 'Agree' and 3% responded 'Disagree' showing an average response of the attribute 'Good'. Hence, the Researcher can conclude that the employees are satisfied with the measures and amenities taken out by the company to improve employees retention and satisfaction and the management is conscious about the various issues related to employees turnover and absenteeism.

**The company is having good corporate growth and profitability:** According to the strategic operational management point of view, the corporate growth, productivity and profitability is an essential and one of the core area of study requires more attention and management.



In this regard, the Researcher gave more importance to this issue and collected data from the respondents, 47% of them recorded an opinion of 'Strongly Agree' and 53% recorded 'Agree' showing that the company is providing adequate and more importance for the corporate growth and profitability of the company. The proper attention and management of the company towards the corporate growth and profitability results in the increase of the operational efficiency of the overall performance of the organisation.

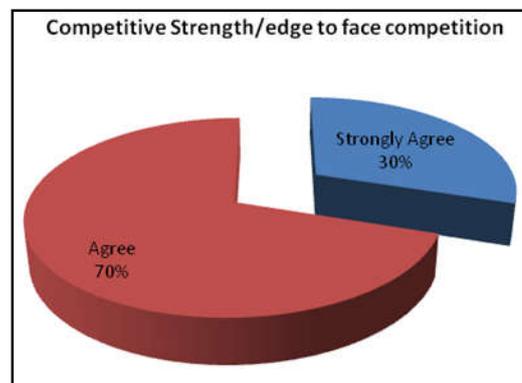


**The company possessing capacity to make analysis of current business processes, identification of non-value-added activities including wastes and proposing process changes:** Reduction of waste and increase the operational efficiency by managing wastes and changes in the production processes by opting updated technology, also the proposal recycling of wastes if any and waste management is important for improving the operational efficiency of an organisation. To reduce and effective management of the waste in all the operational areas of the business of production, material handling and distribution is utmost important at the cost of production perspective also. The researcher realized the importance for this issue and collected data from the respondents through questionnaire, revealed that 40% of the respondents recorded an opinion of 'Strongly Agree', 60% recorded 'Agree' showing that the company is providing more importance and attention for the identification of the non-value-added activities including the reduction waste and process changes.

**The company is providing importance for constant effort for product improvement and innovation by Research and Development:** The constant efforts and measures for the product improvement, innovation and Research and Development is the back bone of the success of any organisation in the production management and marketing management perspective.



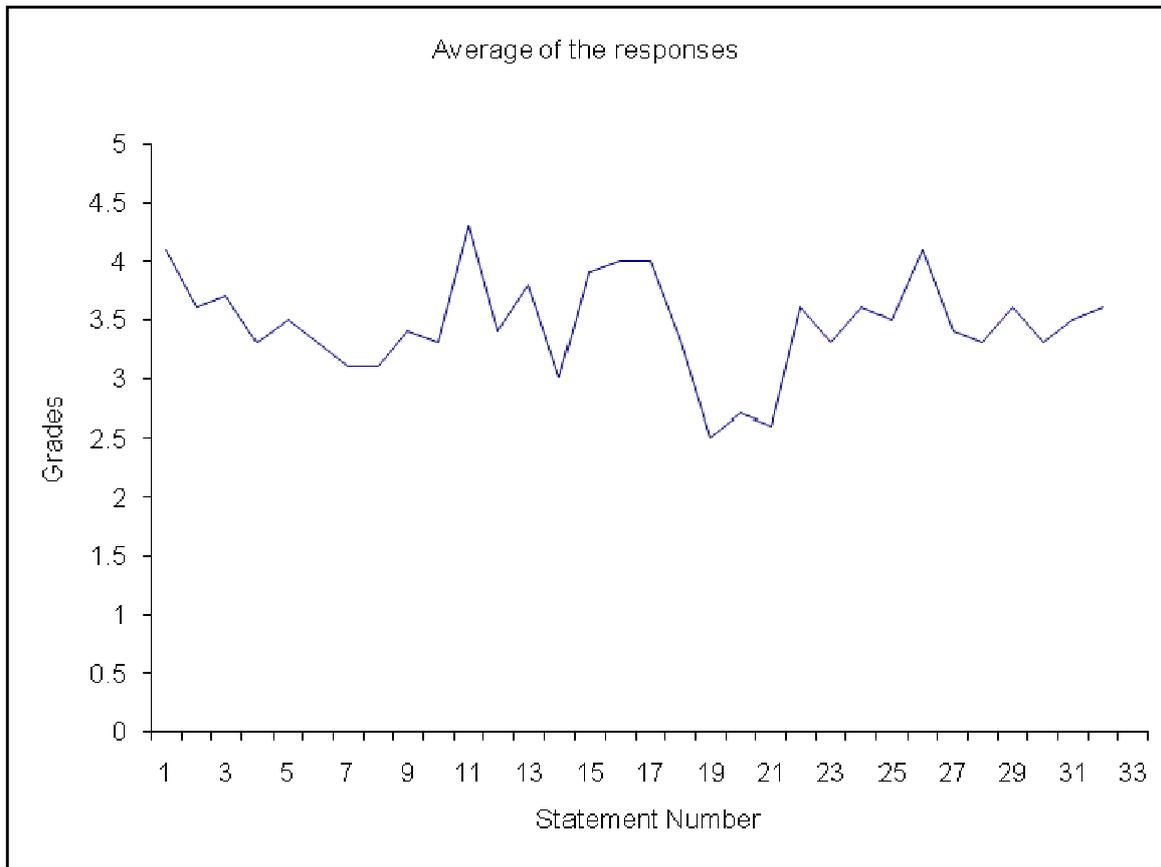
Those organisation who can introduce the innovated products and services and providing such kind of efforts by research and development can survive in the market especially at the present competitive and globalised environment. In this direction the Researcher collected data and found that 53% respondents recorded 'Strongly Agree' and 47% 'Agree' up on this statement. As per the analysis of this statement, the researcher can conclude that the company's attitude towards the product innovation, improvement and research and development is positive and providing most importance in this regard.



**The company is having distinctive core capabilities carried out by a highly talented workforce:** The core capabilities and competency is the most important asset of any organisation leads to success in the operational efficiency. The company can acquire this distinctive core capabilities by retaining highly talented work force. In this direction the researcher collected opinion from the respondents showing an overall performance of company is providing more and enhanced importance for this attribute. 30% of the respondents recorded an opinion of 'Strongly Agree', 67% recorded 'Agree' and 7% are 'Undecided' regarding the core capabilities and competency of the work force. From the overall responses of the respondents, the researcher are able to conclude that, the company realized the importance and having distinctive core capabilities and competence carried out by highly talented workforce.

**The company is giving importance for efficient operations and sustainable business practices:** Sustainable business practices and operational efficiency is the most important element in the success of an organisation and required for the long term existence of the organisation. In this regard, the researcher realized the importance of this subject and collected data from the respondents found that 27% 'Strongly Agree' and 73% 'Agree' related to the efficient operations and the sustainable practices followed by ADNOC. The company conducted the sustainability studies and prepared a detailed report on 2009 related to the issues in the area of Oil extraction, refining and distribution.

Statement/Question Number	Average of the responses	Results of the attribute
1	4.4	Good/Satisfied
2	4.1	Good/Satisfied
3	4.13	Good/Satisfied
4	4.23	Good/Satisfied
5	4.4	Good/Satisfied
6	4.27	Good/Satisfied
7	4.13	Good/Satisfied
8	4.22	Good/Satisfied
9	4.23	Good/Satisfied
10	4.37	Good/Satisfied
11	2.27	Not good/Dissatisfied
12	4.4	Good/Satisfied
13	4.3	Good/Satisfied
14	4.13	Good/Satisfied
15	4.13	Good/Satisfied
16	4.4	Good/Satisfied
17	4.53	Good/Satisfied
18	4.23	Good/Satisfied
19	4.27	Good/Satisfied
20	4.3	Good/Satisfied
Average of the average response		
	4.172	Good/Satisfied
Grades:		
Between 3.1-5.0	= Good/Satisfied	
Point 3.0	= Satisfactory	
Between 1.0 -2.9	=Not good/Dissatisfied.	



Test Statistic: Chi-square test.

Chi-Square =  $\frac{(O - E)^2}{E}$

No.of Samples	1	2	3	4	5	6	7	8	9	10	Total
Observed Values (O) (Average Response)	4.4	4.2	3.8	4.0	4.1	3.8	4.4	4.0	4.2	4.1	41
Expected Values (E)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
$\frac{(O-E)^2}{E}$											
E											.7073

Degrees of Freedom:  $n-1$  d.f =  $10-1 = 9$  d.f

Critical Value: The table at 9 d.f is 16.919

Hence the Researcher can conclude that, ADNOC is giving proper importance in this issue.

**The company, in your opinion having the competitive strength/edge to face competition, changes and challenges according to the changed commoditized and globalised business environment:** No industry is free from completion at the present day dynamic business environment of globalization and globalised markets. At this point of view, every company is required to give more importance for improving the competitive strength to face completion and prolonged survival of the organisation. The researcher realized the importance of this issue and collected data in this regard, 30% of the respondents recorded that they 'Strongly Agree' and 70% 'Agree' showing an overall response grade of 'Good'. So, the researcher can conclude that the company is providing more importance for improvement of the competitive strength/edge to face competition according to the changes and challenges of the changed commoditized and globalised business environment.

### Summary of the results of the Questionnaire survey

#### (Questions and Average responses)

In order to identify the independence of the survey, Chi-square test applied by taking 10 questionnaires of the respondents on random basis.

**Null Hypothesis (Ho):** There is no significant difference between the respondents regarding their response.

**Alternative Hypothesis (H1):** There is significant difference between the respondents.

**Decision:** Since the computed value of Chi-square is 0.7073 is lower than that of the table value of 16.919, falls in the acceptance region. Hence accept the null hypothesis there is no significant difference between the response of the respondents. On the basis of this testing of hypothesis, the researcher can conclude that the difference of the senses/response between the employees with respect to the questions in this questionnaire survey is insignificant or negligible. The employees are having a common sense of responses towards the opinion survey.

#### Summary of Findings

- The machineries and equipment's of the company is updated with effective business process with group organizations.
- The Company is providing employees with secure, consistent access to information.
- 3. The company's distribution system of finished goods are effective and scientific method of scheduling with efficient design of processes, use of technology, Quality management and corporate culture.
- The company's capacity planning and utilisation, facilities location, layouts are effective, efficient and systematic.
- The company is having an efficient material handling system with efficient material resource planning and control system.
- The company's maintenance and replacement policy is effective.

- The company is having an inefficient system or company providing least importance for cost reduction, cost control and value engineering.
- The company is practicing world-class health, safety and environmental (HSE) performance on developing the highest standards of performance.
- The company is having distinctive core capabilities carried out by a highly talented workforce adopting by various practices to improve employee retention and satisfaction
- The company is having good corporate growth and profitability.
- The company possessing capacity to make analysis of current business processes, identification of non-value-added activities including wastes and proposing process changes.
- The company is providing importance for constant effort for product improvement and innovation by Research and Development.
- The company is giving importance for efficient operations and sustainable business practices and competitive strength/edge to face competition, changes and challenges according to the changed commoditized and globalised business environment.

#### Suggestions/Recommendations

- The company should give more attention towards one of the crucial areas for the success of the operation at the present era of globalization, that is the area of cost reduction, cost control and value engineering.
- The company should improve the communication system and timely execution of decision.
- The centralization process to be studied properly and to develop a new organisation structure based on the core business strategy of the global market.
- Company's distribution of finished goods, company has to use some of the scientific methods of operations research like Transportation problem, PERT, CPM, Travel Chart etc.
- The company should plan, coordinate, organize and control the elements which related to the operation management of the organisation to enhance the productivity and efficiency of the organisation.
- The company's facilities locations and lay out of the machines and services are properly and well planned for the effective utilisation of the resources in an effective and efficient manner.
- The material handling system of the organisation should be properly planned and executed according to the nature of the product.
- The company has to provide the best core competencies and thereby increase the retention and turnover of the employees.
- The company has to provide sustainable growth and expansion in the operating point of view especially at the market point of view of reduction of the crude oil prices.

#### Limitations Of The Study

- The method of study adopted for this project is sample survey, therefore the study is faced with the disadvantages of the sampling and it is one of the

important limitation of sample survey that it may not possible to ensure the representativeness of the sample.

- This study is based on the primary and secondary sources of data. The secondary data had limitations as the available data may not be accurate as desired, not up to date.
- The topic selected for study is operational efficiency involves the concepts and practices from other sciences also. Therefore the generalization is limited, because of the dynamic nature of the subject.
- The respondents may not be willing to deliver the right answer because of the fear about the actions from the management, and hence there are some response errors. The accuracy depends upon the accuracy of the data delivered by the respondents.

## Conclusion

The project entitled 'Operational Efficiency of Oil Companies- A Case Study of ADNOC, Abu Dhabi, United Arab Emirates' is a case study of one of the renowned public sector and biggest oil extraction, refining and distribution company in the world related to the operational efficiency of the organisation. The study carried with the help of an execution of questionnaires amongst the white color employees showing that the operational efficiency of the company in various perspective are showing an index of 'Good' performance except the areas related to the cost reduction, cost control and value engineering side. The overall performance of the company in the operational point of view is good enough to face the competition and the changes in the dynamic global business environment. Whereas, the company also should provide importance to the cost perspective, one of the competitive strength or edge of any business concern at the liberalized and globalised business environment.

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***A Survey to Assess the Operational Efficiency in ADNOC, Al Ain, UAE The researcher hereby declares that the information provided by you will be kept confidential and ensured that in no way divulged to any outsiders or to the management. This data/information is used only for academic purposes. Demographic Information:***

7Age:

8Qualification:

9Designation:

10Nationality:

11Years of Experience(Current Organization):

### 1. The machineries and equipment's of the company is updated to ensure the smooth operation.

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

### 2. The company is having effective business process with group organizations.

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

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**3. The Company is providing employees with secure, consistent access to information.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**4. The company's distribution system of finished goods are effective and having a scientific method of scheduling.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**5. The design of processes, use of technology, Quality management and corporate culture are effective and efficient.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**6. The company's capacity planning and utilisation is efficient and effective.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**12. The company's facilities location, layouts are effective and systematic.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**8. The company is having an efficient material handling system.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**9. The company is having efficient material planning, handling and control system.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**10. The company's maintenance and replacement policy is effective.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**11. The company is having an efficient system of cost reduction and cost control internally.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**12. The company is practicing world-class health, safety and environmental (HSE) performance on developing the highest standards of performance.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**13. The company is having distinctive core capabilities carried out by a highly talented workforce.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**14. The company possessing various practices to improve employee retention and satisfaction**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**15. The company is having good corporate growth and profitability.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**16. The company possessing capacity to make analysis of current business processes, identification of non-value-added activities including wastes and proposing process changes.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**17. The company is providing importance for constant effort for product improvement and innovation by Research and Development.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**18. The company is having distinctive core capabilities carried out by a highly talented workforce.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**19. The company is giving importance for efficient operations and sustainable business practices.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**20. The company, in your opinion having the competitive strength/edge to face competition, changes and challenges according the changed commoditized and globalised business environment.**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

21. Your suggestions for improving operational efficiency of ADNOC.....  
 .....  
 .....  
 .....

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