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عنوان البحث

تأثير إدارة سلسلة التوريد على الأداء التنظيمي دراسة تطبيقية على أرامكو

The impact of supply chain management on organizational performance: an applied study on Aramco

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Abstract

This study aims to analyze the relationship between supply chain management efficiency and the organizational performance of Aramco, to identify strengths and weaknesses, and suggest improvements to enhance efficiency and flexibility through a sample of several private sector companies in Yanbu, the number of which was 10 companies, then measuring the quantitative impact and converting the theoretical relationship between supply chain management and performance into numbers and statistics, which helps in assessing the strength of this impact and identifying the precise factors within supply chain management that contribute most to improving or deteriorating organizational performance, as supply chain management is considered one of the most important factors affecting companies' performance.

The descriptive analytical approach was followed by an electronic questionnaire that was prepared and distributed to 500 individuals.

The results of this questionnaire showed a positive relationship between the efficiency of supply chain management and Aramco's performance, identifying the strengths and weaknesses in the current supply chain, and proposing a set of recommendations to improve performance, including adopting modern technologies such as enterprise resource planning systems, big data analytics, and the Internet of Things, while enhancing cooperation with partners by building strong relationships with suppliers and customers, and developing human competencies by investing in developing employee skills, improving the flexibility of the supply chain, and the ability to adapt to sudden changes in the market.

Based on these results, it was recommended to improve its operations in the field of supply chain management, thus enhancing its performance in general, and building and enriching scientific knowledge that contributes to the development of academic knowledge about supply chain management and its impact on organizational performance.

Chapter One: The Problem of the Study and its Importance

1.1 Introduction

Supply chain management is the process of planning, implementing, and controlling the flow of goods and services from the point of origin to the point of consumption, including the flow of financial information associated with this process. The primary goal of supply chain management is to integrate all parties involved, from suppliers to manufacturers, distributors, and end-users, to maximize customer value while reducing costs.

Organizational performance is a set of measures to evaluate how well an organization achieves its strategic objectives. These measures may include efficiency, flexibility, quality, innovation, and sustainability. Organizational performance is also influenced by several factors, including the work environment, internal policies, employee skills, technological infrastructure, and supply chain management. The relationship between supply chain management and organizational performance is a close and reciprocal one. Effective supply chain management contributes to improving organizational performance by increasing efficiency, reducing costs, improving the quality of products and services, and responding quickly to market changes. On the other hand, good organizational performance enables an organization to invest in improving supply chain management, which leads to continuous performance improvement. This study discusses in detail this impact on the supply chain in companies and the private sector and contributes to improving the performance of organizations and giving them new ideas within private organizations.

Saudi Aramco is an excellent choice to study the impact of supply chain management on organizational performance. As the largest global oil industry. Aramco also has a very complex supply chain that spans countries and includes hundreds of thousands of suppliers and customers, making it an excellent model for studying the challenges and opportunities facing large companies in managing their supply chains. In addition, Aramco enjoys the advantages of strategic ambitions that aim to enhance its operational efficiency, transform it into an integrated energy company, and contribute to achieving the Kingdom's 2030 goals.

To achieve these goals, this study relies on Aramco's possession of effective and flexible supply chain management, and this study aims to contribute to a deeper understanding of how supply chain management contributes to achieving the strategic goals of large companies.

2.1 The Problem of the Study

Aramco is a large and complex company, so in this research, we will talk about understanding the relationship between supply chain management and organizational performance, as this issue has wide-ranging implications for other companies in the private sector.

3.1 The Importance of the Study

The importance of this study lies in several points:

- Understanding causal relationships by identifying the relationship between supply chain management practices and various performance indicators in Aramco.
- Identifying strengths and weaknesses by analyzing the strengths and weaknesses of Aramco's supply chain and proposing effective improvements.
- Develop new strategies by innovating new supply chain management strategies that are consistent with Aramco's strategic objectives.
- Improving the decision-making process by providing decision-makers with the necessary information to make informed decisions about investments in supply chain management.

Therefore, the importance of this study contributes to:

- Enhancing efficiency by revealing opportunities to improve efficiency in the supply chain.
- Increasing flexibility by enhancing the company's ability to adapt to changes in the market.
- Improving quality by ensuring the quality of products and services provided.
- Reducing costs by identifying opportunities to reduce costs in the supply chain.

4.1 The Objectives of the Study

- Identify the key elements of supply chain management in Aramco, including identifying the key elements that directly impact organizational performance, such as planning, forecasting, supply, logistics, and inventory management.
- Measure the impact of these elements on key performance indicators, which requires measuring the relationship between the identified elements and performance indicators such as efficiency, flexibility, quality, and innovation.

- Identify best practices in supply chain management, including identifying practices adopted by Aramco that contribute to improving its performance.
- Propose recommendations for improving supply chain management based on the results of the analysis, as it is important to propose specific recommendations for improving supply chain management in Aramco.

5.1 The Questions of the Study

- 1) What are the key elements that make up Aramco's supply chain? How is planning and forecasting done in Aramco's supply chain?
- 2) What technological tools are used in supply chain management?
- 3) How are relationships with suppliers and customers managed?
- 4) What are the key performance indicators used to evaluate supply chain performance?
- 5) How do oil price fluctuations impact supply chain management?
- 6) What are the global best practices in supply chain management that can be applied in Aramco?

6.1 The Hypotheses of the Study

- Hypothesis 1: There is a positive relationship between supply chain management efficiency and organizational performance in Aramco.
- Hypothesis 2: Investing in modern technology in supply chain management improves flexibility and operational efficiency in Aramco.
- Hypothesis 3: There is an inverse relationship between supply cycle length and operating costs in Aramco.
- Hypothesis 4: Improving collaboration and integration between different parties in the supply chain increases customer satisfaction and product quality.
- Hypothesis 5: Improving the accuracy of demand forecasting reduces levels of surplus and shortage in inventory.
- Hypothesis 6: Sustainability practices introduced in this industry improve Aramco's reputation and enhance its product portfolio.
- Hypothesis 7: Investing in human development resources in the field of supply chain management contributes to increasing overall efficiency.
- Hypothesis 8: There is a positive relationship between the degree of supply chain sensitivity and Aramco's ability to respond to market changes.

7.1 The Scientific Theory Adopted in the Study

This research fits the theory of integrated logistics for several reasons:

- **Comprehensive integration:** The theory of integrated logistics focuses on linking all aspects of the supply chain from supply to distribution, which enables you to analyze the complex interactions between these activities. Costs, speed, and response quality.
- **Efficiency:** The theory is concerned with improving the operational efficiency of the supply chain by reducing costs, in addition to increasing speed and response.
- **Flexibility:** The theory encourages the chain in this way to create a flexible supply, which can be able to adapt to market changes and demand.
- **Customer importance:** The theory of integrated logistics places customer needs at the forefront of its concerns, in addition to increasing customer satisfaction and loyalty.

Chapter Two: Previous Studies

2.1 Introduction

Previous research provides a theoretical and practical background for the research and enables the researcher to identify knowledge gaps in it. Accordingly, in this research, I studied previous studies and accomplished the:

- Building a strong theoretical framework based on the theories and concepts that previous studies have developed
- Identifying all important variables for the research based on the conclusions of previous studies.
- Building testable hypotheses resulting from the existential results of previous studies.
- Determining the appropriate research method for the study based on its nature and objectives
- Contributing to the development of knowledge in the field by replicating the results of previous research or providing new results.

Therefore, supply chain management is one of the main factors driving performance within organizations, especially in complex industries such as the oil and gas industry in Saudi Aramco. A large part of this research has focused on analyzing the serious relationship between supply chain management and organizational performance, as many studies have shown a strong link between supply chain efficiency and improving the financial and operational performance of organizations. However, most studies focus on small and medium-sized companies, as they have not yet worked with some large companies such as Saudi Aramco, and many of them have not reached the degree of technological and economic changes in supply chain management.

This research aims to bridge this knowledge gap by analyzing the potential impact of supply chain management on organic revenue performance at Saudi Aramco, with a focus on technology and complexity in supply chains in the oil and gas industry.

2.2 Previous Studies

1

Study Title:

The impact of administrative process re-engineering on green supply chain management: A field study on some renewable energy companies in the Gulf of Suez

Year of Study:

2024

Study author:

Khaled Abdullah Awad Hijazi
Mamdouh Abdel Aziz Rafaei
Mohamed Hassan Abdel Aziz

Study results and recommendations:

This researcher has several objectives to achieve. First, to assess the extent to which the renewable energy company is interested in the impact of BPR and SCM applications. Second, to assess the impact of BPR on SCM practices in the organization under study. Third, to propose research-based recommendations for the company for generalization and practical application. A post-survey descriptive analytical approach was implemented in collecting data from the company's employees. The data of this study revealed significant effects of variables such as the nature of organizational structure arrangement, organizational procedures, and activities, use of information technology, and performance improvement and development on SCM as they are statistically significant. Thus, the research provides vital recommendations for the company's achievements in SCM.

Comparison of the study with the current study:

This research aims to assess the level of interest of a renewable energy company in reengineering operations and implementing supply chain management. The research also aims to determine the impact of reengineering operations on green supply chain management in this company. Based on these results, the research provides important recommendations for company officials to enhance the organizational structure, improve product design, and use information technology more effectively in the context of green chains. This study aims to enhance efficiency by identifying opportunities to improve efficiency in the supply chain, increase flexibility, and improve the company's ability to respond to changes in the market, in addition to improving quality and ensuring the quality of products and services provided and reducing costs by identifying opportunities to reduce costs.

2

Study Title:

The impact of green manufacturing practices on sustainable performance:
The mediating role of green supply chain management integration: An
applied study on industrial companies in Egypt

Year of Study:

2021

Study author:

Ahmed Rashwan

Study results and recommendations:

In this regard, the interest in the environment and achieving integration issues with organizational performance has increased, especially during the past three decades, by many parties interested in environmental issues and the environmental dimension. Many potential factors drive organizations to adopt and apply green manufacturing practices and green supply chain management integration as a type of operational improvement initiative. In this context, the researcher developed ten valid assumptions to determine the impact of good manufacturing practices on sustainable performance in the presence of green supply chain management integration as a facilitating factor. The questionnaire developed by the researcher was used to obtain primary data that could serve the purpose of this study, and confirmatory factor analysis of Cronbach's alpha was used to confirm the stable measurement of the research variables. Finally, the path analysis approach was used to test the hypotheses of the current study. The results of the current study confirm the positive impact of green manufacturing practices on sustainable performance in the studied companies. Moreover, green supply chain management integration plays a full mediating role in the relationship between good manufacturing practices and sustainable economic performance. It is a partial mediator of the relationship between good manufacturing practices and sustainable social performance. It is also not a mediator of the relationship between good manufacturing practices and sustainable environmental performance.

Comparison of the study with the current study:

The current research aims to identify the importance of applying green manufacturing practices and integrating green supply chain management as a modern and contemporary system and reflects through the application of these practices the most important positive effects that they have on the organization, which are represented in reducing defects as well as reducing the cost of discovering those defects and reducing the depletion of natural resources and environmental pollution, while this study contributes to enhancing efficiency by identifying opportunities to improve efficiency in the supply chain and increasing flexibility by improving the company's ability to respond to changes in the market, and it also works to improve quality by ensuring the quality of the products and services provided and

reducing costs by identifying opportunities to reduce costs in the supply chain.

3

Study Title:

The impact of supply chain quality integration on supply chain prowess in public sector companies in the pharmaceutical industries in Egypt

Year of Study:

2021

Study author:

Abdul Qader Mohammed Abdul Qader

Ahmed Nagi Mohammed Fawzy Khashaba

Marina Magdy Wadih Semaan

Study results and recommendations:

The results confirmed the existence of a positive moral effect of internal quality integration on customer quality integration and a direct positive moral effect of the dimensions of supply chain quality integration on supply chain efficiency. In light of the results reached by the study of its implications, a set of recommendations can be presented, including the recommendations that companies operating in the field of pharmaceuticals can provide: creating a stimulating quality system environment based on management, where all departments bear full responsibility for the quality of the final product, encouraging the establishment of sustainable partnership and cooperation with suppliers and customers, in addition to adapting mechanisms and choosing a strong organizational chain that reflects the extent of the company's interest in responding positively to the resources generated to implement workloads through natural weight while maintaining contractual operation that continues in the best ways necessary to ignite the equipment.

Comparison of the study with the current study:

This study aimed to determine the direct impact of supply chain quality integration dimensions on the supply chain dexterity of public sector pharmaceutical companies in Egypt. The study relied on a questionnaire to collect the necessary data to conduct the study. The sample size was 236 individuals. The path analysis method was used to test the study hypotheses by applying the statistical program (Warp PLS.7). While this study contributes to determining the impact of supply chain management on organizational performance in Aramco in the energy sector and supply chain

4

Study Title:

Sustainable Marketing as a Mediating Variable in the Relationship between Sustainable Supply Chain Management Practices and Sustainable Performance of Food Manufacturing Companies

Year of Study:

2021

Study author:

Asmaa Azmy Abdel Hamid Mohamed

Study results and recommendations:

The results also showed that there is a significant positive impact of the relationships between sustainable supply chain management practices, sustainable marketing, and sustainable performance at the level of. The study also showed that sustainable marketing and sustainable performance mediate the relationship between sustainable supply chain management practices and the level of. Based on the results of this study, several recommendations were proposed that could contribute to supporting and enhancing the pivotal roles of this research in raising the performance of sustainable management.

Comparison of the study with the current study:

The study aimed to identify the relationship between sustainable supply chain management practices and the sustainable performance of the organization when mediating sustainable marketing, by applying it to food manufacturing companies in the industrial zone of New Damietta City. The study was conducted on a sample of 400 individuals from marketing, purchasing, and warehouse managers in the companies under study. Using the AMOS structural equation to test the relationship between the study variables, it was found that there is a significant positive association between sustainable supply chain management practices and the sustainable performance of the food manufacturing companies under application and sustainable marketing. This study contributes to providing a deeper understanding of how to effectively manage the supply chain to enhance Aramco's performance and strengthen its competitive position in the market.

5**Study Title:**

The role of green human resource management in the relationship between the integrated supply chain and the sustainable performance of the organization with application to Ezz Steel Company

Year of Study:

2023

Study author:

Inas Ahmed Ismail Ibrahim Ali

Rafiq Wagdy Louis

Study results and recommendations:

The study asked about the relationship between the integrated supply chain and the sustainable performance of the organization. The researcher aims to identify the extent to which the availability of an important aspect of the organizational climate and the current trend of the state, which is the green management of human resources (GMHR), affects the relationship between the integrated supply chain and the sustainable performance of the organization. The study applies to Ezz Steel Company, as the study follows the descriptive analytical approach. The researcher also relies on the stratified random sample method to determine the sample size, as the sample size reached 370 individuals.

Comparison of the study with the current study:

This research aims to build results that indicate the existence of a positive first-degree relationship between the study variables: dimensions of supply chain integration: internal integration, external integration, and strategic integration. There is also a statistically significant positive relationship between the integrated supply chain with its dimensions and the sustainable performance of the organization with its dimensions. There is also a statistically significant positive relationship between the integrated supply chain with its dimensions and the dimensions of green human resource management. There is also a statistically significant positive relationship between green human resource management with its dimensions and the sustainable performance of the organization with its dimensions and an effect between green human resource management on the relationship between the integrated supply chain and the sustainable performance of the organization. There is also a statistically significant relationship between the dimensions of green human resource management and the dependent variable, which is the sustainable performance of the organization, which is a direct relationship, while my study aims to explore the relationship between supply chain management practices and organizational performance in Aramco.

6

Study Title:

The Impact of Logistics on The Development of Singapore's Exports

Year of Study:

2024

Study author:

Sarah Al-Diasti email

Halah A. M. Bassiony

Mohammed Amin Hanfy

Study results and recommendations:

This study mainly examined the impact of logistics performance on Singapore's export trade by applying the gravity model using time series data analysis techniques to sectoral data. Five different statistical methods were used to estimate the gravity model: pooled ordinary least squares, fixed effects model, random effects model, random effects with robust standard errors, and generalized least squares with likelihood. The statistical results showed that the random effects model was better than the fixed effects model. However, both the fixed effects and random effects models yielded similar results for the relationship between the Logistics Performance Index and Singapore's total exports. However, it can be seen that the random effects model outperformed the fixed effects model and pooled ordinary least squares method, and the results provide strong evidence that logistics performance is positively related to export value. The results reveal further evidence that export performance is an important factor in improving Singapore's total export value, and the study recommends that policymakers adopt strategies to promote outbound exports that have not been improved, especially in Indonesia. The importance of improving the low export performance indicators in Indonesia, Vietnam, and Thailand should not be overlooked to achieve better results in terms of time, cost, reliability, ease of organizing international shipments, and successful tracking and tracing. This in turn can boost international trade, both in terms of total exports and sectoral priorities in Singapore.

Comparison of the study with the current study:

The main objective of the study is to investigate the impact of logistics performance level on Singapore's export trade using a gravity model using railway data analysis and sectoral data. Five specific gravity modeling methods were used: LGCs, fixed effects models, random effects models, single-causal random effects, and LGS with full effects. The results indicate that the random effects model was a better model than the negative effects model. However, both negative and random effects provide similar results for the relationship between the LPI and Singapore's total exports. However, the random effects model can outperform the effective effects models and the aggregated small parts method. On the other hand, the random effects models and random effects models yielded positive and significant fixed effects on the LPI, while the current study aims to evaluate the impact of supply chain integration on efficiency and responsiveness in Aramco's operations.

Study Title:

The Impact of Knowledge Management Processes on Strategic Vigilance: An Applied Study

Year of Study:

2024

Study author:

Abdul Rahman Al Shalash

Study results and recommendations:

The study relied on the descriptive approach, and the study sample consisted of (120) faculty members, to whom the theory of cognitive activity and the strategic vigilance scale were applied, they were analyzed by calculating arithmetic means, standard deviation, percentage, correlation coefficients, one-way analysis of variance test, and Scheffe test for post-hoc comparisons. The analysis indicated an increase in both knowledge management and strategic management processes and their sub-fields. A statistically significant relationship was also found between knowledge management and strategic management processes and their sub-fields ($P>0.01$). Statistically significant differences were also found in all study variables in terms of gender differences in favor of females, as well as the structure and all its branches, except applying the cognitive component from the point of view of faculty members with different years of experience ($P>0.01$). Statistically significant differences were also found in the variables of life expectancy, environmental optimism, and strategic vigilance ($P>0.01$). Training faculty members, and developing incentive programs, theories, and initiatives, to ensure the competitiveness and excellence of colleges.

Comparison of the study with the current study:

The study aims to identify the impact of knowledge management systems on the strategic implementation of prospects and to determine their reality and the interrelationships between them in the Unaizah Private Colleges, while the current study aims to study the role of technology in improving the supply and evaluating the chain vision and decision-making in Aramco and the impact of sustainability practices in the supply chain on its reputation and competitive position in the market.

8**Study Title:**

The impact of adopting the external contracting system for supply activities on the performance of the institution from the perspective of: cost, delivery times, and quality of service (a field study on a group of industrial institutions in Algeria)

Year of Study:

2017

Study author:

Yroual Boumediene

Sherif Omar

Study results and recommendations:

The results of the study on the survey of outsourcing activities indicated that the sample of institutions under study relies on experiences similar to those of European and American outsourcing offices due to the operational gains they achieve in three dimensions: cost, delivery time, and service quality.

Comparison of the study with the current study:

This study aims to determine the impact of outsourcing supply chain activities on the performance of a sample of Algerian industrial enterprises in terms of cost, delivery time, and service quality. The field test of our hypotheses is conducted using a survey method using a questionnaire tool, while the current study aims to study the impact of risk management policies on the resilience of the supply chain in Aramco because a strong risk management strategy helps Aramco to do so. Thus, identifying potential risks and mitigating them proactively in the supply chain, ensures the quality of operations.

9**Study Title:**

The Effect of Using Blockchain Technology on The Accounting Environment in Egypt (Field Theoretical Study)

Year of Study:

2023

Study author:

Rania Sultan Mohammed Abdel Hamid

Study results and recommendations:

Blockchain technology is a revolutionary technology that enables financial transactions to be tightly monitored and controlled through the largest distributed and open digital ledger that allows the transfer of ownership assets from one party to another at the same time (real time) without the need for mediation when obtaining superior protection against policy transfer in the face of fraud or misuse of efforts, and this ledger is shared by individuals all over the world. The researcher aimed to study and analyze the most important challenges facing the use of blockchain technology in audit

environments, the success factors in audit systems based on these technologies, and their impact and implementation on the sports environment in Egypt, by conducting two studies. These are theoretical studies and field studies using the note-taking method. The questionnaire and viewpoints were used to analyze a sample of (48) individuals, some of whom are accountants in companies and banking institutions, IT specialists, and accountants in accounting and auditing firms for statistical analysis.

Comparison of the study with the current study:

The researcher concluded in her study that there are many challenges facing the application of these technologies in audit environments, the most important of which are operational risks, lack of audit frameworks, and governance challenges, and they affect the audit and review function by modifying the nature of the function and expanding its scope. Therefore, the researcher recommends increasing the role of professional organizations and audit agencies in monitoring the use of this technology, with training courses for auditors and reviewers to learn everything new in this field, with increasing technical accounting courses for the possibilities of development and impact. for accounting information systems, while the current study aims to identify the potential benefits of applying the role of circular economy principles in Aramco's supply chain, as the circular economy focuses on reducing waste and extending product life. By adopting circular finance principles, Aramco can reduce its costs, improve environmental sustainability, and enhance its commercial reputation.

10

Study Title:

The role of the sustainable supply chain in improving the performance of Egyptian seaports: An applied study on Alexandria Seaport

Year of Study:

2024

Study author:

Dr. Mahmoud Farag Bakr Morsi
Naglaa Marai Hamdi Hamed

Study results and recommendations:

In these previous studies, the improvements that the organization can achieve in terms of economic and environmental outcomes, as well as societal outcomes, were identified, whether for consumers or the general public in society (Haffar & Searcy, 2017). The analysis of the results of improving the organization's performance showed a focus on sustainable supply chain management to increase and improve organizational performance and gain more market share and competitive advantage. The results also revealed that

effective supply chain management (Vafaei et al, 2019) improves productivity, customer satisfaction, and competitive advantage, due to its positive impact on human resources.

Comparison of the study with the current study:

In this previous study, its goals are no longer organizational profitability and market share size, especially due to its volatile environment, in addition to the internal environment and thus the competition, where each seeks to achieve leadership and excellence. At the expense of others, organizations have gone further in developing ways and means to achieve their goal, which is to seek diversity included in their goals to preserve the society and environment in which they operate, and this is what has become in our present era, the concept of sustainable development synonymous with the concept of sustainable development is linked to the achievement whose existence was an understanding and goal to reach progress in its three dimensions: life, environment. The United Nations report shows that the phenomenon of global warming, which was a future threat, has now become a direct threat and that humanity has a little more than a decade to achieve climate control (Davenport, 2018). Therefore, many companies in the last decade have turned to adopting sustainable supply chains due to the increasing interest in environmental, financial, and social sustainability issues. Organizations have also increasingly turned to adopting the philosophy of social responsibility and its inclusion of ways to gain competitive advantage by improving the performance of these practices in terms of financial, environmental, and social aspects (Liebertruth, 2017). While this study aims to evaluate the impact of talent management on the effectiveness of supply chain management in companies, Aramco, as a skilled and qualified workforce, is essential for effective supply chain management. This goal can explore how to attract the best talent.

11

Study Title:

Diagnostic Study of the Supply Chain of the Carpet Industry: A Case Study of a Leading Carpet Company

Year of Study:

2020

Study author:

Khaled Jaber Abdullah Al-Saqti
Sarah Hassan Al-Jazzar

Study results and recommendations:

The results of this study concluded that today's competitive business environment requires supply chain management practices among supply chain partners to ensure competitiveness and improve organizational efficiency through collaboration among partners to reduce wasted time, cut costs, improve efficiency, and increase profitability. A case study of a leading global carpet manufacturing company was conducted to demonstrate the feasibility of the proposed strategies. The most important finding was that ABC testing should be done based on purchase quantity, where it is recommended that most of the products should be in the C category. Furthermore, ABC testing should be done based on the annual application. This will identify fast-moving items (F), medium-moving items (M), and rare items (R). Other findings indicate that current KPIs measure employee evaluations rather than company goals, and there is a lack of communication and integration in the internal supply chain. It is also important to conduct specialized training for carpet company employees so that they can make all the required improvements.

Comparison of the study with the current study:

This study aims to be an applied study of the carpet industry supply chain by investigating the degree of interaction and integration between different supply chains and internal supply chain activities. The research methodology is based on several steps. First, an initial phase was conducted to analyze the current supply chain system in terms of vendor analysis, internal supply chain analysis, customer analysis, supply chain activity, and ABC analysis. Then, a study was conducted to evaluate the level of communication and integration between different supply chain partners and supply chain functions, highlighting weaknesses and areas for improvement. While the current study contributes to studying the role of technology in highlighting the importance of adopting the latest technologies to improve productivity, decision-making, and human resources, the goal of talent management emphasizes the importance of what requires effective focus on the energy required to manage the supply chain.

12

Study Title:

The importance and application of work teams in various fields to achieve the ideal level of performance

Year of Study:

2014

Study author:

Hatem Mohamed Fathy Idris
Abdel Fattah Mohamed Khedr
Ramadan Abdel Hamid El-Tantawy
Mahrous Ibrahim Mohamed El-Meadawy

Study results and recommendations:

The most prominent suggestion in the previous research was that each individual should reduce his interests and motivations for the sake of team cohesion and effectiveness. This does not mean that the individual is not important, as collective performance is what does not include effectiveness and individual motivations cannot be done individually. All work must be done together and in a team spirit. Politics, sports, arts, sciences, and all social fields are more successful if they are done in a team spirit that includes work groups in all areas of life. Therefore, the focus must be on creating and developing a culture of work groups - not committees and committees - to accomplish specific tasks within the desired goals and objectives to achieve good productivity. It will be dealt with as a tool that helps the management of the company that has achieved its goals, which is a technical perspective necessary to achieve growth, development, and prosperity together.

Comparison of the study with the current study:

This study aims to emphasize the importance of cooperation in business unit systems and its benefit in raising the level of the state to achieve higher goals. In this context, we briefly discuss the benefits of cooperation in religion, politics, education, and business, as a set of aspects, without neglecting other aspects such as science, art, sports, and others, while the current study aims to evaluate the cooperation between the two sides and the impact of inventory policies on the weakness of Aramco's supplies in the face of fluctuations in oil prices and global demand.

13

Study Title:

Sustainable Supply Chain Management: A Conceptual Perspective

Year of Study:

2022

Study author:

Mahmamy Asia
Mazhouda Nour El Din.
Ayadh Mohammed Adel.

Study results and recommendations:

The results of this previous study summarized and built the topic of sustainable supply chain management in recent years, which has received increasing attention from academic and commercial institutions, and this was emphasized in the objective aspects of the recommendations related to

increasing the number of conferences and studies, published in theory and practice.

Comparison of the study with the current study:

This previous study aims to present a set of research on sustainable supply chain management and identify the research areas in the subject of supply chain management, which are theoretical improvement, performance measurement, and qualitative and quantitative contributions to the decision, while the current study aims to investigate the relationship between the maturity of integrated resource planning (ERP) schedules and costs in the supply chain in Aramco.

14

Study Title:

The role of supply chain management in improving the competitive position of business organizations

Year of Study:

2019

Study author:

Amr Mustafa Mohamed Hussein

Study results and recommendations:

The researcher in this study sees and reached the following results that implementing effective supply chain management can lead to solving these problems by creating synergy between the different parts of the chain (supplier - institution - intermediaries and distributors - customers), the organization, and its various departments, internally through the interface. Between the customer and the supplier, so that it communicates through management with the customer's marketing and identifies his needs and desires (its customer relationship), then the organization communicates these desires and needs to the organization's suppliers through product management (supplier relationships). For customers, and by having better relationships with suppliers, they solve more supply chain problems, and by having better relationships with customers, they solve more marketing problems, and through coordination and cooperation between organizational departments, problems of inconsistency in internal operations are solved. Lack of communication between the organization's different departments, as many companies in Egypt suffer from problems that prevent them from achieving their goals and prevent them from reaching a good competitive position, such as supply chain problems, marketing problems, problems of inconsistency in internal operations, and lack of coordination between departments within the organization.

Comparison of the study with the current study:

In this previous research, the researcher aims and attempts to prove that the application of effective supply chain management leads to solving many organizational problems, such as supply chain problems, marketing problems, and difficulties facing internal operations, while the current study aims to study the impact of strategic partnerships with suppliers on Aramco's ability to produce new products and services with added value.

15

Study Title:

The role of some lean supply chain management activities in achieving logistics excellence

Year of Study:

2019

Study author:

Khairi A. Awso

Anna D. Habil

Farsat A. Shaaban

Study results and recommendations:

The results of the statistical analysis supported the study hypotheses and showed the relationship and impact of lean supply chain activities on logistics excellence. The researchers suggested conducting further future research on this topic to complete this study and report the success of the results. The contribution of the current study is to help research companies benefit from the concepts and results of the study because the study variables have not been studied in the Iraqi manufacturing sector before, according to the researcher.

Comparison of the study with the current study:

The study aimed to determine the relationship between lean supply chain management activities represented by (lean purchasing, lean transportation, and lean warehousing) in achieving logistics excellence, based on a set of concepts, as it was found that this role is related to and influential on logistics excellence. The questionnaire was applied to two companies, Coca-Cola and Pepsi-Cola, which produce beverages in the Kurdistan Region / Iraq, and the questionnaire was used as the main tool for collecting data (90). A questionnaire was distributed to supply chain and logistics managers, and several sufficient questionnaire questions (80) forms were used to determine the questionnaire criteria, while the current study aimed to evaluate the role of risk management in reducing the negative impact of unexpected events (such as natural disasters and political crises) on supply chain performance in Aramco.

Study Title:

Evaluating supply chain management using the Fuzzy Hierarchy Process technique.

Year of Study:

2022

Study author:

Ali Karbalai Ibra
Dawoud Darwish
Abbas Ahmadi

Study results and recommendations:

Results: The results showed that financial factors were the most important for experts and ranked first with a weight of 0.266, followed by administrative factors, organizational factors, and cultural factors. The study axes included adopting a business strategy that is in line with environmental goals with a weight of 0.0936 in the first place, and developing a competitive and positive price business model with a weight of 0.0878 in the second and trade for sampling policies from leading countries with a weight of 0.0846 in the third and obtained it.

Recommendations / Given the importance of unifying factors related to the implementation of supply chain management, this article recommends factors that affect managers to help find the appropriate model for their future budgets.

Comparison of the study with the current study:

This study aimed to integrate environmental management and supply chain management and determine whether implementation can not only improve the environment in the country but also increase the sustainable and environmental performance of the global supply chain. The current study deals with supply chain management in the medical system of selected public hospitals in Mazandaran province, where a questionnaire was developed and completed by experts to classify the factors influencing the supply chain analysis of the medical system. After collecting the data, it was analyzed using the fuzzy hierarchy analysis technique. For this purpose, through the post-survey study, factors and models were identified and experts in four core value categories and 16 sub-dimensions provided conceptual models for the survey. These factors include operational factors, personnel, financial factors, organizational factors, and cultural factors, while the current study aims to identify different types of strategic interactions, evaluate the impact of participation on the acquisition products to be marketed, and evaluate the

extent to which partners contribute to new technologies within Saudi Aramco.

17

Study Title:

The role of supply chain management in improving the performance of the economic institution

Year of Study:

2022

Study author:

AL-Tayeb sayeh

Study results and recommendations:

The study summarized the most important findings: The success or failure of supply chain management depends on its ability to achieve cooperation and integration between stakeholders in supply chain operations. Supply chain management has also gained an important position in all organizations, especially after the noticeable changes in the business environment, especially markets, economic units, comprehensive contracts, and technological challenges in this field. Accordingly, the recommendations are for organizations to adhere to the various key factors to overcome competition, including quality, function, and cost.

Comparison of the study with the current study:

This study aims to highlight the strategic role that supply chain management can play in improving the performance of a financial institution. Initially, the focus was on studying and exploring different practices to improve efficiency and reduce costs through supply chain management, and then focusing on how these practices were integrated into a leading institution in Algeria in this process. This study aims to identify the risks facing Aramco, evaluate the effectiveness of its contingency plans, and measure the impact of unexpected events in supply chains on performance.

18

Study Title:

Analysis and evaluation of business processes for supply chain management (SCM) system

Year of Study:

2018

Study author:

Mona Hassan

Study results and recommendations:

The results of the study indicated that there are many non-value-added operations and activities in the supply chain, and these activities were as follows:

- 1) non-value-added activities accounted for 71% of purchase orders.
- 2) The percentage of activities that do not add value to the supply chain was 54%.
- 3) The percentage of non-value-added activities for the shortage detection and replenishment system was 59%.
- 4) The percentage of activities that do not add value to the final goods supply chain was 33%.
- 5) The percentage of activities that do not add value to production was 50%.

The results also showed that these activities focus on communication activities such as sending messages and receiving information. The research recommendations highlighted the importance of virtual storage systems (cloud systems) in supply chain management instead of local systems, to reduce low-cost activities in the middle of the road.

Comparison of the study with the current study:

This study aims to explore and analyze the business processes related to supply chain management. The study used a case study approach, where data were collected from several well-known organizations. The data collected focused on several issues related to supply chain management in those organizations, which aims to identify stakeholders' assessments related to building a supply chain management model, followed by evaluating complementary business models in this chain to assess the weaknesses of this model. The current study aims to assess the maturity of current ERP systems, compare the operating cost of units with advanced ERP usage and non-users, and identify the factors that affect cost-effectiveness.

19

Study Title:

The role of supply chain management in e-commerce

Year of Study:

2023

Study author:

Arish, Haj

Shadli, Mohammed

Study results and recommendations:

The most important results of the study are the following: There is a positive impact between supply chains and e-commerce, as Amazon relies on multiple channels and enters into multiple partnerships to care for its customers and existing markets and seeks to target new markets for each of them, and today it seeks to completely control the global e-commerce market

Recommendation / Highlighting the reality of e-merchants in Amazon and the impact of product offerings on e-commerce in the company

Comparison of the study with the current study:

The research conducted in this previous study aimed to discuss the topic of the effects and roles of the supply chain among e-commerce merchants in Amazon to identify a rapidly spreading phenomenon in the world who are the e-commerce merchants, and how to identify the relationship between the supply chain and the characteristics of the e-commerce merchant to shed light on the reality of e-commerce merchants in Amazon and the impact of the supply chain on e-commerce in the company, as the study currently aims to compare the performance of different inventory strategies and determine the relationship between inventory levels and costs and evaluate the impact of inventory on lead time.

20

Study Title:

The impact of green supply chain management on achieving excellence in green warehousing activity performance

Year of Study:

2018

Study author:

Arwa Mohamed El Sayed

Study results and recommendations:

One of the most important results of this previous study was the positive impact of green supply chain management on improving green storage activity. The study recommended the need to pay more attention to green supply chain management because of its positive impact on developing green storage and operations management.

Comparison of the study with the current study:

The study aimed to determine the role of green supply chain management in carrying out green storage activity in green storage factories in the Arab Republic of Egypt. It used the descriptive research approach, developed a measurement tool, and distributed the questionnaire to a stratified random sample of workers in those companies. The SPSS statistical analysis program was used to select the study determinants, while the current study aims to evaluate the impact of inventory policy on Aramco's supply chain to adapt to changes in oil prices and global demand.

2.3 The Concept of the Supply Chain

2.3.1 Definition of the Supply Chain and its Basic Elements

Supply Chain Definition:

Supply chain is the set of processes and activities that follow each other with materials and include all the steps to make raw materials a final material ready for consumption by the customer. The supply chain consists of purchasing, storage, production, and distribution that is done by the transportation seller and controlled by the seller who sells and markets goods and provides services. The main objective of the supply chain is to achieve efficiency and cost while providing a high-quality product on time. The ranges extend from the originating area of the supplier to the end of the final area in the hands of the consumer.

Main sections of the supply chain:

- **Suppliers:** The supplier is the first and foremost home, as it provides the raw materials and resources needed for production. The right suppliers must be chosen as they play a role in the quality of products and production.
- **Production:** This is the process of converting raw materials into finished products. This type of activity includes manufacturing including the assembly of different elements. These elements must be efficient to make the existing quality.
- **Warehousing:** This involves storing raw materials and sorting products in the final stages of the process.
- **Distribution:** Finally, it involves distributing the goods in stock to customers. This process involves transporting the finished products from the factory to their customers. Managing distribution channels requires planning the final destination of the debt and its contents. Final consumption: They are the last part of the supply chain as the serious ones finish the process once the product is consumed. They help in understanding the needs and preferences of customers and help companies adjust them.
- **Technology:** Technology must play a role in all the sectors it covers. Use of electronic systems or advanced software. Smart coordination and expansion of scope

2.3.2 The Importance of Effective Supply Chain Management

Supply chain management is a cornerstone of the success of any organization, especially large companies like Aramco, as it plays a major role in improving efficiency, reducing costs, increasing customer satisfaction, and enhancing competitiveness.

Supply chain management is very important:

First: Improving operational efficiency by streamlining processes and reducing waste. Effective supply chain management improves the operational efficiency of the company, leading to increased productivity and reduced costs.

Second: Greater flexibility as flexible supply chain management helps companies respond to market and demand changes faster, making them more prepared to face unexpected challenges.

Third: Improving product quality by supervising the quality of materials and production processes. Supply chain management ensures the quality of final products and customer satisfaction.

Fourth: Reducing costs as companies save a significant amount of money by improving inventory management and reducing transportation and storage costs.

Fifth: Promoting sustainability as supply chain management can help companies achieve sustainability goals by reducing carbon emissions, improving waste management, and promoting social responsibility practices.

Sixth: Increase customer satisfaction, as companies that meet customer expectations in terms of delivery time and product quality can build strong relationships with customers and increase their loyalty. Seventh: Improve competitive advantage, as companies that have effective supply chain management can compete better in the market by providing high-quality products and services at competitive prices.

2.4 Dimensions of Supply Chain Management

2.4.1 Strategic Planning for the Supply Chain

Supply chain management is a comprehensive process that aims to develop and implement a supply chain capable of achieving the strategic objectives of the organization. It is about defining a future vision for the supply chain, setting long-term goals, and developing the processes and systems necessary to achieve these goals.

Importance of strategic supply chain management planning:

Improving efficiency: Strategic planning contributes to increasing the effectiveness and efficiency of the supply chain, reducing costs, and increasing profits.

Increasing flexibility: It helps in building flexible supply chains that can adapt to changes in the market and demand. **Improving customer satisfaction:** It helps in ensuring that goods and services are delivered to customers on time and efficiently.

Enhancing competitiveness: Providing a competitive advantage to the organization by providing high-quality products and services at competitive prices.

Achieving sustainability: Strategic supply chain management can help achieve sustainability goals through the environmental and social impact that will be reduced.

Key considerations for the strategic delivery system:

Modern technology: Using modern technologies such as materials management, artificial intelligence, and data analytics to improve delivery performance.

Sustainability: Integrating sustainability principles into all aspects of the supply chain.

Resilience: Building a supply chain that can adapt to unexpected changes.

Collaboration: Building strong relationships with suppliers, customers and partners.

Innovation: Encouraging continuous innovation to improve processes and products.

Strategic management challenges:

Rapid market changes: Supply chains require constant adaptation to changes in demand, technology, and legislation.

Increasing complexity: The supply chain has become increasingly complex due to globalization and the increasing number of partners.

Increasing risks: The supply chain is exposed to many risks such as natural disasters, political changes, and price fluctuations

2.4.2 Inventory Management

Inventory management plans implement, and control the flow of goods and materials within an organization, from the time they are purchased and stored until they are sold or used. The primary goal of inventory management is to maintain adequate inventory levels to meet anticipated demand while minimizing the costs associated with excess inventory or unnecessary understocking.

Importance of inventory management:

- Ensure that products are available to customers at the right time and in sufficient quantities.
- Reduce storage costs, waste, and duplication, and improve cash flow. Improve planning, production, and distribution processes.
- Reduce the risk of undersupply or overstocking. Provide the data and analysis needed to make informed decisions about inventory management.

Components of inventory management Determine the optimal quantity of each item to keep in stock:

- Use computer programs to track inventory movement and update records.
- Check the level at which each product should be in stock before ordering more.
- Determine the quantity of each item to order when it arrives at the checkout.
- Plan and organize storage, and ensure the safety of materials

Inventory management techniques Continuous reordering system:

- Automated reordering system that allows items to be automatically reordered when a certain level of inventory is reached.
- Point of order system A system that relies on determining the point of order and the order size for each product.
- Demand-driven inventory management is a system that focuses on accurately forecasting demand and making inventory decisions based on those forecasts.
- An integrated inventory management system is a system that integrates different supply chains, such as planning, manufacturing, and distribution, to improve inventory management.

Challenges in inventory management:

- Difficulty accurately forecasting changing demand.
- The impact of market changes on demand and supply.
- Some high storage costs.
- Insufficient information to make informed decisions.

Technology is important in inventory management and data collection and analysis:

- Predicting exactly what is needed.
- Automating the process.
- Improving the overall concept of the supply chain.

Examples of inventory management systems:

- Integrated resource planning (ERP) systems: Provide comprehensive solutions to manage all aspects of a business, including inventory management.
- Warehouse management systems (WMS): Focus on managing warehouse performance.

2.4.3 Logistics and Transportation

Logistics and transportation are two interconnected sectors that form the backbone of most industries, especially those that rely on logistics and distribution, which is the process of moving products from production to consumption, and includes a wide range of activities such as storage, transportation, packaging, distribution and inventory management.

Importance of logistics and logistics services:

The effective use of supply chains contributes to the efficiency of exports by reducing the time and cost required to transport goods. It ensures that goods are delivered to customers on time and efficiently, which contributes to increased customer satisfaction. It also helps companies compete in the market by providing faster and more efficient services. Logistics and transportation services can contribute to achieving sustainability by reducing carbon emissions and improving waste management.

Logistics and logistics services:

- 1) Transportation: includes all means of transportation, such as trucks, ships, planes, and trains.
- 2) Warehousing: includes storage facilities in warehouses and delivery areas.
- 3) Packaging: protecting goods during transportation and storage.
- 4) Inventory: managing inventory levels to meet demand and avoid shortages or surpluses.
- 5) Order processing: receiving, preparing, and delivering orders to customers.

Challenges in Logistics and Transportation

- Changes in demand
- High costs
- Government regulations
- Natural disasters

Technological tasks in logistics and transportation:

- A system that tracks the movement of goods in real time.
- Using data to improve decision-making.
- Connecting devices to assets in the supply chain.

2.4.4 Supplier Management

Supplier management is the process of selecting, evaluating, and establishing relationships with suppliers who provide the products and services that an organization needs. This strategy aims to ensure that the organization obtains high-quality raw materials and services at competitive prices, which contributes to achieving its strategic objectives.

The importance of supply chain management Quality assurance:

- By selecting reliable suppliers, the organization can ensure that it obtains high-quality raw materials that contribute to quality.
- By negotiating with suppliers and securing competitive prices, the organization can reduce production costs.
- By maintaining good relationships with suppliers, the organization can obtain raw materials and services that are delivered on time, which helps in delivering finished products on time and effectively.
- The organization can work with suppliers to develop new products and services.
- By diversifying its suppliers, the organization can reduce the risks associated with its dependence on a single vendor.

Stages of supplier management:

- Planning by identifying the organization's needs for products and services, and determining the criteria that suppliers must meet.
- Evaluation and selection by evaluating potential suppliers based on specific criteria and selecting the best suppliers. Negotiation by negotiating with suppliers on prices, payment terms, and quality.
- Contracts where contracts are concluded with suppliers and define the responsibilities and rights of each party.
- Monitoring and periodic evaluation of supplier performance.

Supply chain management tools and methods Supply chain performance analysis:

- Using key performance indicators to evaluate supply chain performance.
- Supplier development programs by providing support to suppliers to improve their performance.
- Strategy by building long-term relationships with suppliers.
- Information system used to manage supplier relationships

Supplier management challenges Market fluctuations:

- The impact of market fluctuations on prices and availability of raw materials.
- The impact of geopolitical events on the supply chain.
- The impact of climate change and natural disasters on supply chains

The future of digitizing supplier management:

- Using digital technologies to improve supplier relationship management.
- Focus on suppliers that follow sustainability practices.
- Building supplier and partner networks.

2.4.5 Management Back

The return of management is a term that refers to the shift in the focus of organizations from focusing on employees and customers to re-emphasizing the importance of the leadership role of management in achieving the organization's goals. After a period in which concepts such as distributed leadership and flat organizations gained wide popularity, there is a growing tendency to recognize that effective management leadership is essential to ensuring the long-term success of the organization. There are reasons for the return of management to the forefront, including the complexity of the work environment, as the work environment has become more complex due to globalization, technology, and rapid changes in the market, which requires strong leadership and quick and decisive decision-making, in addition to the

need for stability, as organizations feel after periods of constant change the need for stability and strong leadership to guide them towards the future, and the importance of strategic vision, as organizations need leaders with a clear vision and long-term strategy to lead them towards success. Many studies have shown a shortage of qualified leaders, which has led to increased interest in the role of management. This has led to the return of management to focus on results, as the focus returns to the importance of achieving tangible results and achieving the strategic goals of the organization and developing leadership skills, as the focus is on developing the leadership skills of managers, such as decision-making, problem-solving and effective communication, in addition to building a strong organizational culture, as organizations seek to build a strong organizational culture that supports shared values and strategic goals, and a focus on continuous development, as managers are encouraged to constantly develop themselves and learn from new experiences. This leads to challenges facing the return of management, including resistance to change. This shift may face resistance from employees who are accustomed to a more flexible work environment, in addition to a shortage of qualified leaders, as it may be difficult to find leaders with the necessary skills and experience and a balance between leadership and flexibility. Organizations must find a balance between strong leadership and the flexibility needed to adapt to changes. In the future, the return of management to the forefront is a positive development, as it emphasizes the importance of effective leadership in achieving organizational success. However, organizations must be careful not to return to traditional and authoritarian leadership styles. Instead, they must focus on developing flexible and innovative leaders who can deal with the complex challenges imposed by the changing business environment.

2.5 Performance indicators in the supply chain

2.5.1 Efficiency indicators (delivery speed, inventory level, supply cost)

Efficiency metrics are vital tools for measuring the effectiveness of supply chain operations. By tracking these metrics, companies can identify strengths and weaknesses and improve their overall performance. In this explanation, we will focus on three of the most important efficiency metrics in supply chain management: delivery speed, inventory level, and cost of supply.

Indicator	Target value	Actual value (last month)	Actual value (current month)
Delivery speed (days)	5	6	4
Inventory level (days sales)	30	35	28
Supply cost as a percentage of sales (%)	15%	16%	14%

Table 1 Key Performance Indicators (KPIs)

1. Delivery time

Definition: It is the period it takes for a product to move from the supplier to the end customer.

Importance: Delivery speed reflects how responsive a company is to customer orders and its ability to meet their expectations. Delivery speed directly affects customer satisfaction and the level of competition in the market.

Measurement indicators for measuring delivery speed:

Cycle time: It is the total time it takes for a product to move from the order stage to the delivery stage.

Average delivery time: It is the average time it takes to deliver an order.

Percentage of orders delivered on time: It measures a company's commitment to delivering orders on time.

2. Inventory level

Definition: It is the number of products stored at different stages of the supply chain.

Importance: The inventory level directly affects a company's operating costs. Excess inventory increases storage costs and spoilage, while low inventory can lead to shortages and delayed deliveries.

Inventory Level Measurement Indicators:

Inventory Turnover: Measures the number of times inventory is sold and replaced during a given period.

Days of Sales in Inventory: Represents the number of days it takes to sell available inventory.

Storage Cost as a Percentage of Inventory Value: Measures the cost of holding inventory as a percentage of its value.

3. Supply Chain Cost

Definition: It is the sum of the costs associated with purchasing, transporting, storing, processing, and delivering raw materials to customers.

Importance: Supply chain cost is one of the most important factors affecting a company's profit margin. By reducing supply costs, a company can improve its competitiveness and lower prices.

supplier	Delivery speed (days)	Product quality (defect rate)	Supply cost (SAR per unit)
Supplier A	6	2%	10
Supplier B	4	1%	12

Table 2 Supplier performance comparison

Supply Cost Measurement Indicators:

- Supply Cost as a Percentage of Total Sales: Measures the ratio of costs associated with the supply chain to total revenue.
- Transportation Cost per Unit: Measures the average cost of transporting one unit of a product.
- Storage Cost per Unit: Measures the average cost of storing one unit of a product.

Relationship between Indicators

These three indicators are closely related. For example, a company can increase delivery speed by reducing inventory levels, but this may increase the cost of supply. Therefore, companies must balance these indicators to achieve optimal performance.

Objectives for improving efficiency indicators:

- Increase customer satisfaction: by delivering orders on time and with high quality.
- Reduce costs: by improving inventory management and reducing transportation and storage costs.
- Enhance competitiveness: by providing high-quality products and services at competitive prices.

2.5.2 Flexibility indicators (ability to adapt to changes)

Resilience is one of the most important qualities that individuals, companies, and societies must have in our rapidly changing world. It is the ability to adapt to new challenges and opportunities, deal with pressures, and return to normal after crises. To assess this ability, a set of indicators are used that allow for measuring the level of resilience. Resilience indicators are quantitative or qualitative measures used to assess the ability of a given system (individual, organization, society) to adapt to changes and challenges. These indicators help identify strengths and weaknesses, and direct efforts to improve resilience. There are also types of resilience indicators. Resilience indicators can be classified into several types, including Economic indicators: such as economic growth, economic diversification, income level, investments, and the ability to withstand economic shocks; Social indicators: such as education level, health, social cohesion, equality, and community participation; Environmental indicators: such as biodiversity, air and water quality, natural resource management, and the ability to adapt to climate change; and finally, governance indicators: such as transparency, accountability, citizen participation, and institutional stability. Examples of resilience indicators at the individual level include the ability to cope with stress, flexibility of thinking, ability to build relationships, and social skills. At the organizational level: workforce diversity, supply chain flexibility, ability to innovate, and organizational culture that supports change. At the community level: social safety nets, volunteering, inter-institutional collaboration, and community ability to learn and adapt. The importance of resilience indicators comes finally in assessing risks, as they help identify risks that threaten resilience and

develop strategies to reduce them. Then, they guide policies, as they help guide policies and programs aimed at enhancing resilience and improving the decision-making process, as they provide accurate information to decision-makers to make informed decisions while monitoring progress that helps track progress in building resilience over time. There are also many challenges in measuring resilience, such as the complexity of the concept, as resilience is a multidimensional concept that is difficult to measure accurately, in addition to the lack of data, as the data available to measure resilience may be insufficient or inaccurate, and finally, rapid changes, as conditions may change quickly, making it difficult to update indicators continuously.

Resilience Indicator	Zone A	Zone B
Unemployment Rate (%)	5	8
Infrastructure Quality (1-10)	7	5
Healthcare Spending (SAR)	500	300
Energy Source Diversity (1-10)	8	5
Small and Medium Businesses (%)	15	10

Table 3 Aramco Key Performance Indicators for Region A and Region B

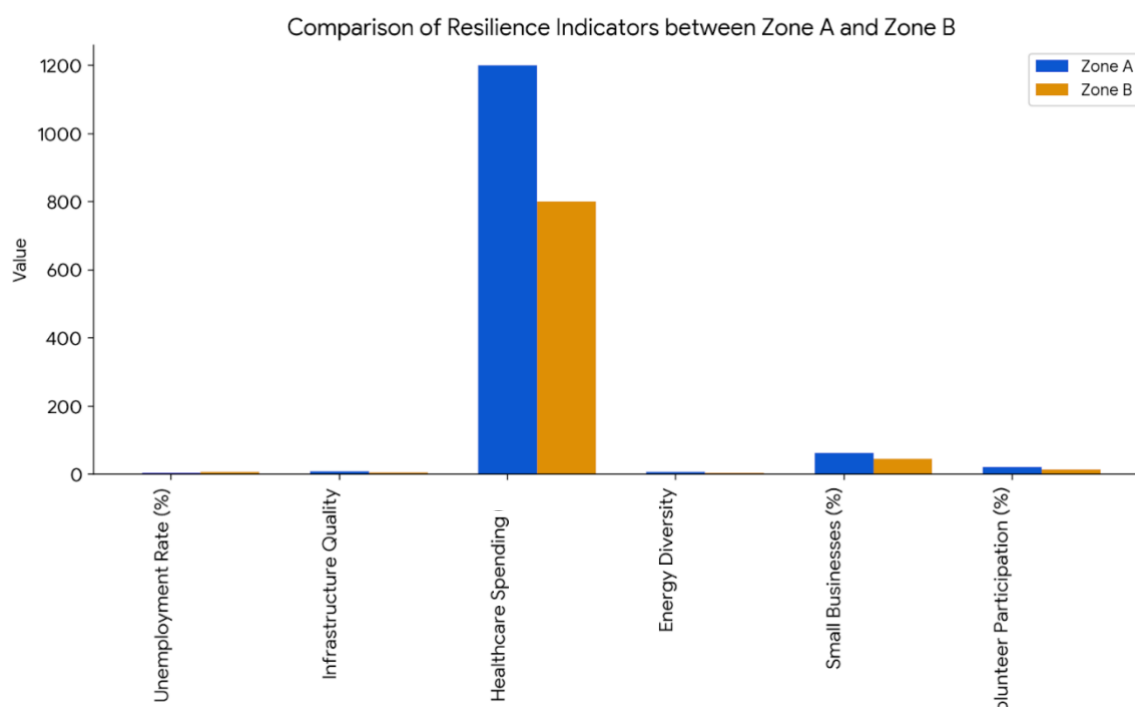


Figure 1: Aramco key performance indicators for Region A and Region B.

2.5.3 Quality indicators (quality of products and services)

Quality indicators are standard tools used to determine the level of quality of products and services provided. These indicators play a crucial role in improving performance, increasing customer satisfaction, and enhancing the competitiveness of companies.

What are quality indicators?

Quality indicators are quantitative or qualitative criteria used to evaluate the extent to which a product or service conforms to specified specifications and standards. These indicators help identify strengths and weaknesses and guide quality improvement efforts.

Types of quality indicators

- Quality indicators can be classified into several types, including:
- Manufacturing quality indicators: such as defect rate, downtime, and production efficiency.
- Service quality indicators: such as response time, information accuracy, and customer satisfaction.
- Total quality indicators: cover all aspects of quality, including manufacturing quality, service quality, and administrative process quality.

Examples of quality indicators:

- In industry: defect rate in the final product, delivery time, and resource efficiency.
- In services: waiting time at the call center, percentage of satisfied customers, and accuracy of bills.
- In the health sector: hospital-acquired infection rate, waiting time for an appointment, and patient satisfaction.

Importance of Quality Indicators:

- Improving performance: Helps identify areas that need improvement.
- Increasing customer satisfaction: Helps meet customer expectations and improve their experience.
- Reducing costs: Helps reduce costs incurred due to rework or repairs.
- Enhancing competitiveness: Helps differentiate products and services from competitors.

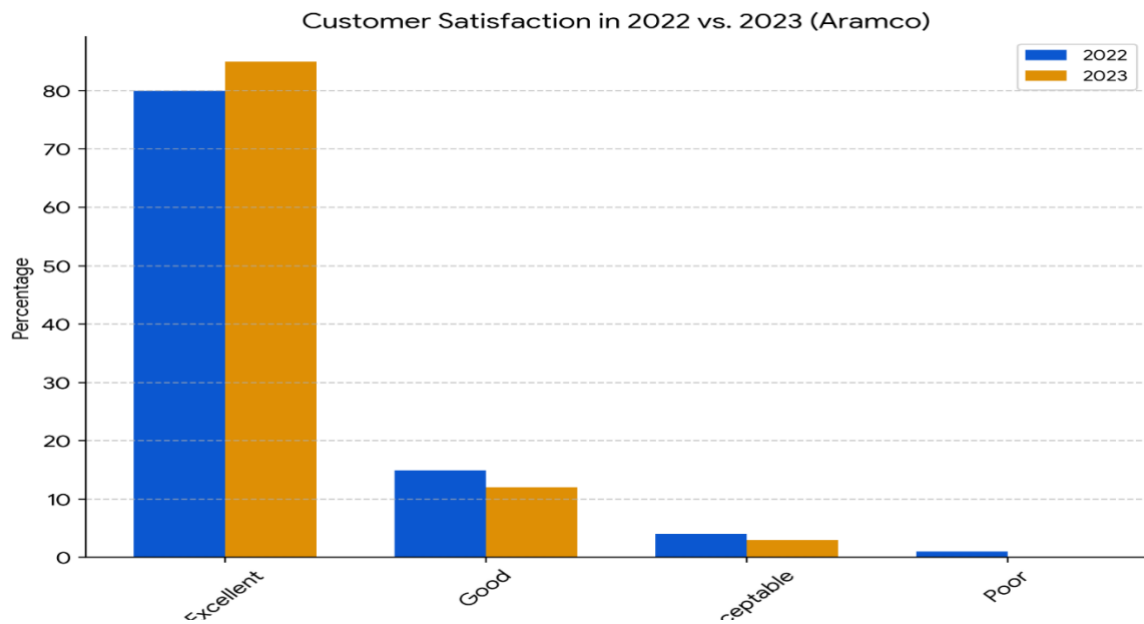


Figure 2: Aramco customer satisfaction with quality

2.5.4 Conclusion

Aramco is a world-leading energy company with a global reputation for quality and efficiency. Its supply chain plays a vital role in achieving these goals, directly impacting the quality of products and services provided and, consequently, customer satisfaction. The relationship between supply chain, quality, and customer satisfaction is linked to the quality of raw materials, as the quality of final products depends largely on the quality of raw materials used and an efficient supply chain that ensures obtaining high-quality raw materials from reliable sources, in addition to production processes, as efficient production processes contribute to improving product quality and reducing defects, and an integrated supply chain supports these processes by providing the necessary resources at the right time and in the right quantities, in addition to on-time delivery, as on-time delivery is one of the most important factors influencing customer satisfaction and a flexible and responsive supply chain that ensures that products are delivered to customers on time. Tracking products and raw materials helps identify any quality issues at an early stage, allowing for the necessary corrective actions to be taken. A sustainable supply chain contributes to protecting the environment and reducing the negative impact on local communities, which enhances the company's reputation, customer satisfaction, and Aramco's role in improving the supply chain and quality by adopting global quality standards. Aramco follows global quality standards such as ISO 9001 to ensure the quality of its products and services and invests in technology. Aramco uses the latest technologies in supply chain management, such as enterprise resource planning (ERP) systems and customer relationship management (CRM) systems, in addition to collaborating with partners. Aramco works with its supply chain partners to develop innovative solutions to improve quality, efficiency, and employee training. Aramco invests in training its employees on best practices in quality and supply chain

management. Therefore, the supply chain plays a critical role in achieving customer satisfaction at Aramco. By focusing on the quality of raw materials, efficient production processes, on-time delivery, and sustainability, Aramco can maintain its position as a leading energy company.

2.6 The relationship between supply chain management and organizational performance

2.6.1 The impact of supply chain management on profitability

Aramco is one of the world's largest oil companies, and supply chain management plays a critical role in its profitability. Through effective supply chain management, Aramco can improve efficiency, reduce costs, and enhance customer satisfaction, ultimately leading to increased profits. The importance of supply chain management in Aramco lies in the complexity of the supply chain, as the oil supply chain includes many complex stages, from the extraction of crude oil to its delivery to end customers. Managing this chain efficiently requires careful planning and coordination between different parties, in addition to fluctuations in oil prices, as Aramco's profits are greatly affected by fluctuations in oil prices in the global market. By managing the supply chain flexibly, the company can respond to changes in the market and reduce risks. With the increase in global demand for energy, Aramco faces the challenge of meeting this demand while maintaining quality and efficiency. Effective supply chain management helps achieve this goal.

How does supply chain management affect profitability?

- 1) Reducing costs: By improving the efficiency of logistics operations, reducing inventory, and reducing waste, Aramco can achieve significant cost savings.
- 2) Improve product quality: Effective supply chain management ensures the provision of high-quality raw materials and the application of strict quality standards throughout the production and distribution stages.
- 3) Increase customer satisfaction: By delivering products on time and with high quality, Aramco can increase customer satisfaction, retain existing customers, and attract new ones.
- 4) Respond quickly to market changes: Flexible supply chain management helps the company respond quickly to changes in demand and supply, increasing its competitiveness.
- 5) Sustainability: Sustainable supply chain management helps protect the environment, reduce negative impacts on local communities, enhance the company's reputation, and attract investors.

Examples of Aramco's supply chain management practices:

- Integrated planning: Developing comprehensive supply chain plans that cover all stages from sourcing to delivery.
- Information systems: Using advanced information systems to track inventory, manage orders, and plan production.
- Collaborating with stakeholders: Building strong relationships with supply chain partners to improve efficiency and reduce costs.
- Continuous improvement: Applying continuous process improvement methodologies, such as Six Sigma and Lean.

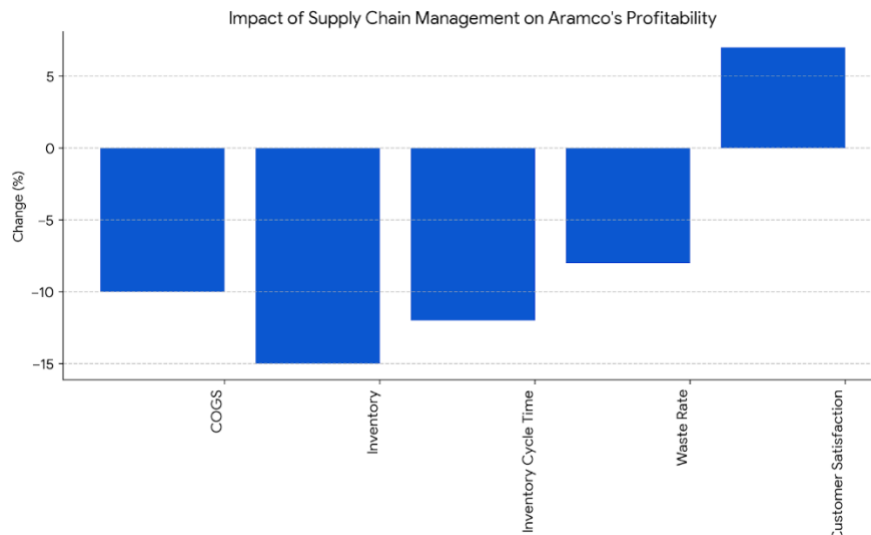


Figure 3: The impact of supply chain management on Aramco's profitability

2.6.2 The impact of supply chain management on customer satisfaction

Direct impact on quality:

Reduced defect rates: Reduced defect rates in Aramco products can be linked to improved inspection and quality control processes throughout the supply chain.

Increased durability: Improvements in raw material selection and manufacturing techniques can increase product durability, reducing the need for maintenance and repair.

Impact on delivery:

Timeliness of delivery: The impact of supply chain management on timeliness of delivery can be measured by calculating the percentage of orders delivered on time.

Reduced shipping delays: Reduced shipping delays can be linked to improved logistics planning and reduced reliance on unreliable suppliers.

Impact on cost:

Reduced production costs: Effective supply chain management can contribute to lower production costs by reducing waste and improving process efficiency.

Impact on sustainability:

Reduced emissions: Reduced carbon emissions can be linked to adopting sustainable practices in the supply chain, such as using renewable energy sources and reducing waste.

2.6.3 The impact of supply chain management on market share**The relationship between supply chain management and market share:**

- **Product quality and on-time delivery:** Product quality and on-time delivery led to increased customer satisfaction, which in turn increased customer loyalty to the company. Satisfied customers tend to repeat purchases and recommend the company to others, which contributes to increased market share.
- **Supply chain flexibility:** Flexible supply chain management allows a company to respond quickly to changes in demand and supply, enabling it to take advantage of new opportunities and meet evolving customer needs.
- **Cost:** Effective supply chain management helps reduce costs, allowing a company to offer competitive prices and attract new customers.
- **Sustainability:** Sustainable supply chain practices enhance a company's reputation and attract customers who care about social and environmental responsibility.
- **Innovation:** Innovative supply chain management can help a company develop new products and services that meet changing market needs, enhancing its competitive position.

Supply chain management contributes to increasing Aramco's market share by:

- **Stakeholder collaboration:** Building strong relationships with supply chain partners to improve efficiency and reduce costs.
- **Continuous improvement:** Applying continuous process improvement methodologies, such as Six Sigma and Lean.
- **Technology:** Using modern technologies such as artificial intelligence and the Internet of Things to improve demand forecasting and inventory tracking.
- **Personalization:** Meeting individual customer needs by offering customized products and services.
- **Rapid response:** Responding quickly to customer requests and inquiries.

Examples of successful practices at Aramco:

- **Digital transformation projects:** Implementing advanced information systems for enterprise resource planning and customer relationship management.

- Strategic partnerships: Building long-term partnerships with suppliers and logistics providers.
- Investing in infrastructure: Developing logistics infrastructure to ensure efficient operations.

Challenges facing Aramco:

- Oil price volatility: Oil price volatility has a significant impact on the oil industry, making long-term planning difficult.
- Transition to renewable energy: Global demand for renewable energy is increasing, posing a challenge for Aramco.
- Government regulation: The oil industry is subject to strict government regulations, which can impact the company's operations.

2.6.4 The impact of supply chain management on operational efficiency

The relationship between supply chain management and operational efficiency:

- Planning and forecasting: Operational efficiency depends largely on accurate planning and correct forecasting of market needs. By analyzing data and applying forecasting techniques, Aramco can identify future needs and plan production and distribution effectively.
- Inventory management: Effective inventory management means maintaining the optimal level of inventory to meet demand without incurring high storage costs.
- Logistics: Logistics plays a critical role in moving products from the point of production to the point of consumption efficiently and at a low cost.
- Product quality: Product quality affects a company's reputation and customer satisfaction. Through effective supply chain management, product quality can be ensured and waste can be minimized.
- Chain flexibility: A flexible supply chain allows a company to quickly adapt to changes in the market, such as changes in oil prices or demand for products.

Supply chain management contributes to improving Aramco's operational efficiency by:

- Reducing costs: By optimizing purchasing, inventory storage, and transportation, Aramco can achieve significant cost savings.
- Increased productivity: Effective supply chain management can increase productivity by reducing the time it takes to complete operations.
- Improved product quality: Product quality can be ensured by applying strict standards throughout the supply chain.

- **Reduced delivery time:** The time it takes to deliver products to customers can be reduced, which improves customer satisfaction and increases the company's sales.
- **Sustainability:** A sustainable supply chain can reduce a company's environmental impact and improve its reputation.

Examples of successful practices at Aramco:

- **Digital transformation:** Using modern technologies such as artificial intelligence and the Internet of Things to improve supply chain operations.
- **Strategic partnerships:** Building long-term partnerships with suppliers and logistics providers.
- **Investing in infrastructure:** Developing logistics infrastructure to ensure efficient operations.

2.6.5 Conclusion

Ultimately, this study is important because it identifies the relationship between supply chain management and organizational performance in the oil giants within Aramco. It will also contribute to providing practical recommendations for improving supply chain management in Aramco and other companies in the sector.

Chapter Three: Study Methodology

3.1 Introduction

Aramco is one of the largest global oil companies and plays a pivotal role in the global economy. To achieve this size and influence, it relies heavily on the efficiency and effectiveness of its operations, of which supply chain management is an integral part. Supply chain management is the process of managing and coordinating all activities related to the flow of products and services, from primary suppliers to the final product reaching the end consumer. These activities include planning, purchasing, production, storage, transportation, and distribution. Supply chain management is important to Aramco by reducing costs, improving the optimal use of resources, and increasing operational efficiency. It also ensures the quality of products and services provided to customers, which enhances brand confidence in addition to meeting customer needs on time, which increases customer satisfaction and loyalty. Therefore, there is a direct relationship between the efficiency of supply chain management and the organizational performance of the company. When the supply chain operates efficiently, this is positively reflected in financial performance by increasing revenues and reducing costs, operational performance by increasing productivity and improving product quality, and strategic performance by achieving the company's strategic objectives and outperforming competitors. This study addresses dimensions including strategic supply chain planning, inventory management, how inventory level affects operating costs, operational efficiency, logistics, quality management, and

technology: how technology contributes to improving supply chain management and increasing efficiency. Therefore, this study aims to understand the complex relationship between supply chain management and organizational performance at Aramco. Through this study, the company can identify strengths and weaknesses in the supply chain, and suggest solutions to improve performance, and thus achieve its strategic objectives.

3.2 Methodology and study methods

Methodology:

Based on the nature of the research and the goal of understanding the relationship between supply chain management and Aramco's performance, the mixed methodology was chosen because it is the most appropriate, as this methodology combines quantitative and qualitative methods, providing us with a more comprehensive and accurate picture to study the impact of supply chain management on Aramco's performance.

Research Methods Used in This Research

1. Quantitative Methods:

A comprehensive questionnaire was designed covering all aspects of supply chain management. Then, the study sample was selected from Aramco employees working in the field of supply chain, and employees of 3 private companies in Yanbu Industrial City. This sample was conducted on 300 employees.

2. Qualitative Methods:

In-depth interviews were conducted with supply chain managers and experts in this field within Aramco to understand their opinions and experiences. Group interviews were also conducted with supply chain work teams to obtain multiple opinions from other companies.

3.3 Study Community

The study sample was selected from Aramco employees working in the supply chain field, and employees of 3 private companies in Yanbu Industrial City. This sample was conducted on 300 employees, then in-depth interviews were conducted with supply chain managers and experts in this field within Aramco to understand their opinions and experiences. Group interviews were also conducted with supply chain work teams to obtain multiple opinions from other companies.

Phase	Sample Type	Sample Size	Tools Used	Purpose of Data Collection
Phase 1	Aramco Supply Chain Employees	300	Questionnaire	To measure employees' perceptions of supply chain practices and challenges
	Employees of 3 private companies in Yanbu	300	Questionnaire	To compare the perceptions and practices of employees in private companies with Aramco
Phase 2	Supply Chain Managers and Experts in Aramco	300	In-depth Interviews	To gain deeper insights into experts' opinions and experiences
	Supply Chain Teams in other companies	300	Focus Groups	To gather diverse opinions from different teams

Table 4 for the study sample and data collection stages

3.4 Study boundaries (spatial, temporal)

Spatial boundaries:

Given the interest of the Kingdom of Saudi Arabia in Saudi Aramco, which is the main company that the study focuses on, it was chosen along with 3 private companies in Yanbu Industrial City, which are comparison companies used to evaluate Aramco's practices, and my study focuses mainly on this region and the surrounding area.

Time boundaries:

The period between (2018 - 2024) was chosen as a period in which interest and spread of studies related to the impact of supply chain management on Aramco's performance increased

Chapter Four: Results and Recommendations

4.1 Introduction

After an in-depth study of how supply chain management impacts Saudi Aramco's performance, and in light of the careful analysis of the data collected through questionnaires and interviews, this study reached a set of important results that reveal the close relationship between supply chain efficiency and the overall success of the company. In this introduction, the most important results were reached, in addition to a set of practical recommendations that Saudi Aramco can adopt to improve supply chain performance and enhance its competitive position in the market. This study also aims to evaluate the extent to which supply chain management impacts Saudi Aramco's performance. Data was collected through questionnaires and interviews with Aramco employees and experts in the field. The results of the study revealed a strong relationship between supply chain efficiency and achieving the company's strategic objectives. Based on these results, the study provides a set of recommendations

to improve the flexibility and efficiency of Aramco's supply chain, as the supply chain is one of the vital factors that directly affect the performance of major companies such as Saudi Aramco. This study, which relied on the analysis of questionnaire and interview data, revealed gaps in some aspects of supply chain management at Aramco. However, the study also showed that there are good practices that can be built upon. Moreover, statistical analysis showed a strong positive relationship between supply chain performance indicators and overall company performance indicators. Based on these findings, the study recommends adopting a set of initiatives to improve strategic supply chain planning, enhance collaboration with partners, and invest in modern technology.

4.2 Data Analysis

1: Measuring satisfaction with supply chain management:

Company	Employee Type	Satisfaction Score	Profit Margin
Aramco	Manager	4	1.5
Other	Employee	3	2
Aramco	Employee	4.5	2.2
Other	Manager	3.8	2.7
Aramco	Manager	5	1.4
Other	Employee	2.5	2.9

Table 5: Measuring satisfaction of managers and employees with supply chain management

From the previous table, the comparison between companies resulted in a significant difference in the level of satisfaction between Aramco employees and employees in other companies

Category	Number of Responses	Percentage	Example Responses
Resources	30	35%	Lack of resources, difficulty obtaining necessary tools
Workload	25	29%	Excessive workload, tight deadlines
Communication and training	20	23%	Insufficient training, difficulty communicating with other departments
Other	5	6%	Work routine, dissatisfaction with salary

Table 6: In-depth analysis of employee opinions on the impact of supply chain performance at Aramco

The previous table reveals the main reasons for satisfaction or dissatisfaction

Weakness	Proposed Solution	Key Performance Indicators (KPIs)
Lack of resources	Increase the budget allocated to resources, and redistribute existing resources more effectively.	Increase employee productivity by 10% over the next quarter.
Workload	Redistribute tasks, simplify procedures, and provide additional support to employees.	Reduce the number of overtime hours by 20%.
Lack of training	Develop a comprehensive training program and provide opportunities for professional development for employees.	Increase the percentage of employees with professional certifications by 15%.

Table 7 Identifying Strengths and Weaknesses

The previous table mentioned the strengths:

- The presence of a strong team spirit among employees, indicates a positive work environment and cooperation between departments.
- It seems that employees have high technical skills, which contributes to achieving the organization's goals.
- It seems that employees are committed to performing their work to the best of their ability.

Weaknesses:

- Lack of resources: As stated in the study, many employees complain about the lack of resources needed to perform their work efficiently.
- Work pressure: Many employees indicate that they suffer from severe work pressure, which affects their performance and health.
- Lack of training: Some employees believe that they do not receive sufficient training to develop their skills.

Effective Survey Analysis To evaluate the performance of the supply chain in Aramco, we should focus on the main aspects that affect the efficiency and effectiveness of this chain:

Survey objectives:

- Assess employee satisfaction with current operations.
- Identify strengths and weaknesses in the supply chain.
- Gather suggestions for improving performance.

Target audience:

All employees working directly or indirectly in the supply chain within Aramco and 3 other companies within Yanbu.

Survey Sections:

Department: Supply Chain

Job: Manager

Years of Experience: 5 - 25

Planning:

- Material requirements are planned effectively
- Production plans are updated regularly

Sourcing:

- Suppliers are selected based on clear criteria
- Inventory is managed effectively
- Materials are delivered on time and with high-quality

Logistics:

- Transportation and storage are managed efficiently
- Shipments are tracked effectively

Returns and Recycling:

- Returned products are handled effectively
- Recycling practices are implemented

Product Quality:

- The quality of products and services is ensured
- Quality complaints are handled effectively

4.3 Results

Based on the importance of the role of supply chain management in Aramco companies, this study reached the most prominent results, which are:

- A direct link between supply chain efficiency and financial performance: The study is expected to show a strong positive relationship between the efficiency of supply chain operations (such as planning, sourcing, and logistics) and the company's financial indicators such as profitability and working capital management.
- The impact of product and service quality: The study will emphasize the role of the supply chain in ensuring the quality of products and services provided to customers, which enhances customer loyalty and improves the company's reputation in the market.
- Supply chain flexibility in the face of challenges: The study will highlight the ability of Aramco's supply chain to adapt to sudden changes in the market or economic conditions, such as oil price volatility or global crises.
- The role of technology in improving performance: The study will explain how modern technologies such as the Internet of Things and artificial intelligence contribute to improving the efficiency of supply chain operations and reducing costs.
- The impact of integration between departments on performance: The study will emphasize the importance of integration between the

company's different departments (such as production, sales, and finance) to maximize the benefit from the supply chain.

- Identifying strengths and weaknesses in the supply chain: The study will reveal weaknesses that need improvement and strengths that can be built upon to improve performance.
- Comparing Aramco's performance to competitors: The study will compare Aramco's supply chain performance to that of competitors in the sector, helping to identify global best practices.
- Impact of sustainability on the supply chain: The study will examine the role of sustainable practices in the supply chain, such as reducing carbon emissions and managing waste, on the company's overall performance.
- The role of suppliers and partners in the supply chain: The study will highlight the importance of building strong relationships with suppliers and partners in the supply chain to achieve the company's strategic objectives.
- Providing recommendations for improving performance: The study will provide a set of practical recommendations for improving Aramco's supply chain performance, such as adopting new technologies, developing human resources, and improving planning and forecasting processes.
- The impact of flexibility on response to change: The study may show that companies with flexible supply chains can respond faster to changes in demand or supply, enhancing their competitiveness.
- The relationship between sustainability and financial performance: The study may reveal that companies that implement sustainable practices in the supply chain achieve better financial performance in the long term, by reducing costs and improving the company's reputation.
- The role of technology in building relationships with suppliers: The study may highlight how technology can be used to build collaborative relationships with suppliers, leading to improved coordination and information exchange.
- The impact of risks on supply chain performance: The study may analyze the types of risks facing Aramco's supply chain and how these risks can be managed to reduce their impact on performance.
- The relationship between inventory management and profitability: The study may show that effective inventory management contributes to reducing costs associated with excess or deficient inventory, leading to improved profitability.
- The impact of organizational culture on supply chain performance: The study may reveal that an organizational culture that encourages collaboration and innovation contributes to improving supply chain performance.
- The role of leadership in improving the supply chain: The study may highlight the importance of the role of leaders in defining the strategic

vision of the supply chain and providing the necessary resources to achieve goals.

- The impact of customization on customer satisfaction: The study may show that the ability to customize products and services based on individual customer needs contributes to increased customer satisfaction.
- The relationship between supply chain management and innovation: The study may reveal that companies that invest in supply chain innovation gain a greater competitive advantage. Assessing the impact of the COVID-19 pandemic on the supply chain: If the study is conducted after the COVID-19 pandemic, it may include an analysis of the impact of the pandemic on Aramco's supply chain and how the company responded to the challenges it faced.
- The role of artificial intelligence in demand forecasting: The study may reveal the ability of artificial intelligence to improve the accuracy of demand forecasting, leading to a reduction in excess inventory and avoiding shortages.
- The impact of the Internet of Things on logistics visibility: The study may highlight how the Internet of Things can be used to track products and improve the overall visibility of the supply chain.
- The relationship between big analytics and decision performance: The study may show that the use of big analytics helps decision-makers make better decisions about the supply chain.
- The impact of employee skills on supply chain efficiency: The study may highlight the importance of developing employee skills in the field of supply chain management, such as inventory management and logistics planning.
- The role of organizational culture in supporting innovation: The study may reveal that an organizational culture that encourages innovation and continuous learning contributes to improving supply chain performance.
- The relationship between sustainability and cost reduction: The study may show that sustainable practices in the supply chain contribute to long-term cost reductions, such as reducing energy and water consumption.
- The impact of the supply chain on carbon emissions: The study may analyze the relationship between supply chain operations and greenhouse gas emissions, and suggest ways to reduce these emissions.
- The impact of supplier collaboration on innovation: The study may highlight the importance of collaboration with suppliers to develop new products and services.
- The role of strategic partnerships in enhancing competitiveness: The study may show that strategic partnerships with other companies contribute to enhancing the competitiveness of the supply chain.
- The impact of technological changes on the supply chain: The study may highlight the challenges and opportunities posed by ongoing

technological changes on the supply chain, such as the emergence of new technologies such as blockchain and robotics.

4.4 Recommendations

Strategic recommendations:

- **Develop a comprehensive supply chain strategy:** The strategy should be consistent with the company's future vision and include all aspects of the supply chain.
- **Enhance integration between departments:** Collaboration and coordination should be ensured between the different departments in the company involved in the supply chain to maximize resource utilization.
- **Build strong relationships with suppliers:** Long-term relationships should be built with strategic suppliers to ensure continuity of supply and improve quality.
- **Focus on continuous innovation:** Innovation should be encouraged in all aspects of the supply chain, including developing new products and services and improving processes.
- **Adopt sustainability practices:** Sustainable practices should be integrated into all supply chain activities to reduce environmental impact and improve reputation.

Technology recommendations:

- **Invest in artificial intelligence technologies:** AI can be used to improve demand forecasting, improve inventory management, and streamline logistics operations.
- **Adopt the Internet of Things:** The Internet of Things can be used to track products in real time and improve the overall visibility of the supply chain.
- **Leverage big data analytics:** Big data analytics can be used to extract valuable insights from the available big data, helping to make better decisions.
- **Develop a unified platform for supply chain management:** A unified platform can be developed to aggregate all data and processes related to the supply chain, facilitating the complete management of the chain.
- **Develop employee competencies:** Invest in developing employee skills in supply chain management, including inventory management, logistics planning, and data analysis.
- **Build a supportive organizational culture:** Create an organizational culture that encourages collaboration, innovation, and continuous learning.
- **Provide incentives and rewards:** Incentives and rewards should be provided to employees who contribute to improving supply chain performance.

- Define clear KPIs: KPIs should be defined to measure supply chain performance regularly.
- Develop an effective monitoring system: A comprehensive monitoring system should be developed to track supply chain performance and identify any deviations from plans.
- Conduct periodic reviews: Periodic reviews of the supply chain strategy should be conducted to ensure that it remains aligned with the company's objectives.
- Leverage global best practices: Global best practices in supply chain management should be studied and implemented in Aramco.
- Building strategic partnerships: Strategic partnerships should be built with other companies to share risks and opportunities.
- Preparing for future changes: Future changes in the market and technology should be prepared by developing flexible strategies.
- Focus on customer satisfaction: Customer satisfaction should be the primary goal of the supply chain.
- Collaborating with academia to conduct research and develop innovative solutions.
- Establishing a strategic stock of raw materials and essential components to deal with fluctuations in demand and supply.
- Expanding the supplier base to reduce dependence on a single supplier and reduce risks.
- Developing contingency plans to deal with crises and natural disasters that may disrupt the supply chain.
- Shifting to a supply system based on actual demand for products rather than traditional forecasts.
- Implementing a comprehensive quality management system to ensure the quality of products and services provided.
- Adhering to occupational health and safety standards at all stages of the supply chain.
- Conducting regular audits of the quality of suppliers' products and services.
- Conducting a detailed analysis of the costs associated with the supply chain to identify opportunities for savings.
- Negotiating with suppliers to obtain the best prices and terms.
- Streamlining logistics operations and eliminating any unnecessary activities.
- Using robotics and automation in repetitive and tedious processes to increase efficiency and reduce errors.
- Using these technologies in training and logistics planning.

- Protecting sensitive data related to the supply chain from cyber-attacks.
- Adopting practices to manage waste effectively and reduce the amount of waste generated.
- Using environmentally friendly materials in packaging.
- Taking measures to reduce carbon emissions from transportation and storage operations.
- Building partnerships with universities and research institutions to develop innovative solutions.
- Develop performance indicators that go beyond traditional indicators to measure the overall performance of the supply chain.
- Providing a stimulating and encouraging work environment for creativity and innovation.
- Continuously assessing the performance of the supply chain and adjusting strategies as needed.

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Appendices

Data Collection Questionnaire Template for Research Samples

Gender			
Age			
Years of Experience			
Dimension	Question	Question Type	Measurement Dimensions
Planning	Are detailed plans in place to meet production needs for raw materials and components?	Likert scale (Strongly disagree to Strongly agree)	Plan comprehensiveness, detail
	Are these plans updated regularly based on changes in demand or supply?	Likert scale	Responsiveness to change
	Does the company use Enterprise Resource Planning (ERP) systems to support planning?	Yes/No	Technology utilization
	Is a thorough inventory analysis conducted to avoid shortages or excesses?	Likert scale	Inventory management efficiency
Sourcing	Are suppliers selected based on clear criteria such as quality, price, and delivery?	Likert scale	Selection criteria clarity
	Is supplier performance evaluated regularly?	Likert scale	Supplier performance assessment efficiency
	Are long-term relationships developed with strategic suppliers?	Likert scale	Supplier relationship strength
	Are competitive bidding processes used to select suppliers?	Likert scale	Transparency and competitiveness in supplier selection

Logistics	Are transportation and warehousing operations managed efficiently?	Likert scale	Logistics operations efficiency
	Are shipment tracking systems used to monitor goods movement?	Yes/No	Supply chain visibility
	Are transportation routes optimized to reduce costs and delivery time?	Likert scale	Cost efficiency and delivery speed
	Are warehouses managed effectively to ensure product safety and minimize damage?	Likert scale	Warehouse management efficiency
Returns and Recycling	Are there clear procedures for handling returned or defective products?	Likert scale	Returns management effectiveness
	Are recycling practices implemented to reduce waste?	Likert scale	Sustainability practices
Technology	Does the company use integrated Supply Chain Management (SCM) systems?	Yes/No	Technology utilization
	Does the company use big data analytics to improve decision making?	Yes/No	Data-driven decision making
	Does the company use Internet of Things (IoT) technology to track products and inventory?	Yes/No	IoT adoption
	Does the company use Artificial Intelligence (AI) technology for demand forecasting and inventory management?	Yes/No	AI adoption
Customer Satisfaction	Are customers satisfied with the quality of the products and services provided by the company?	Likert scale	Product quality satisfaction

	Are customers satisfied with the speed of delivery?	Likert scale	Delivery time satisfaction
	Are customers satisfied with after-sales service?	Likert scale	After-sales service satisfaction
Challenges	What are the main challenges facing the supply chain in your company? (Open-ended)	Open-ended	Qualitative feedback
Recommendations	What recommendations do you have to improve supply chain performance? (Open-ended)	Open-ended	Qualitative feedback

الخلاصة

يهدف هذا البحث إلى إظهار أن أرامكو هي شركة طاقة عالمية رائدة تتمتع بسمعة عالمية في الجودة والكفاءة، ولها دور كبير في سلسلة التوريد الخاصة بها في تحقيق هذه الأهداف، مما يؤثر بشكل مباشر على جودة المنتجات والخدمات المقدمة، وبالتالي رضا العملاء. ترتبط العلاقة بين سلسلة التوريد والجودة ورضا العملاء بجودة المواد الخام. تعتمد جودة المنتجات النهائية إلى حد كبير على جودة المواد الخام المستخدمة وسلسلة التوريد الفعالة التي تضمن الحصول على مواد خام عالية الجودة من مصادر موثوقة، بالإضافة إلى عمليات الإنتاج. تساهم عمليات الإنتاج الفعالة في تحسين جودة المنتج وتقليل العيوب. تدعم سلسلة التوريد المتكاملة هذه العمليات من خلال توفير الموارد اللازمة في الوقت المناسب وبالكميات المناسبة، بالإضافة إلى التسليم في الوقت المحدد. يعد التسليم في الوقت المحدد أحد أهم العوامل المؤثرة على رضا العملاء. تضمن سلسلة التوريد المرنة والمستجيبة تسليم المنتجات للعملاء في الوقت المحدد. ونظراً لاهتمام المملكة العربية السعودية بشركة أرامكو السعودية، الشركة الرئيسية التي ركزت عليها الدراسة، فقد تم اختيارها مع 3 شركات خاصة في مدينة ينبع الصناعية، وهي شركات مقارنة تستخدم لتقييم ممارسات أرامكو. وتركز دراستي بشكل أساسي على هذه المنطقة والمناطق المحيطة بها، وتعتبر الفترة ما بين (2018-2024) فترة تزايد الاهتمام وانتشار الدراسات المتعلقة بتأثير إدارة سلسلة التوريد على أداء أرامكو. وانطلاقاً من أهمية دور إدارة سلسلة التوريد في شركات أرامكو، توصلت هذه الدراسة إلى أبرز النتائج، وهي وجود ارتباط مباشر بين كفاءة سلسلة التوريد والأداء المالي. ومن المتوقع أن تظهر الدراسة وجود علاقة إيجابية قوية بين كفاءة عمليات سلسلة التوريد (مثل التخطيط والتوريد والخدمات اللوجستية) والمؤشرات المالية للشركة مثل الربحية وإدارة رأس المال العامل، بالإضافة إلى تأثير جودة المنتج والخدمة. وستؤكد الدراسة على دور سلسلة التوريد في ضمان جودة المنتجات والخدمات المقدمة للعملاء، مما يعزز ولاء العملاء ويحسن سمعة الشركة في السوق. كما قدمت توصيات لتطوير استراتيجية شاملة لسلسلة التوريد، ويجب أن تكون الاستراتيجية متسقة مع الرؤية المستقبلية للشركة وتشمل جميع جوانب سلسلة التوريد بالإضافة إلى تعزيز التكامل بين الإدارات، حيث يجب ضمان التعاون والتنسيق بين الإدارات المختلفة في الشركة المشاركة في سلسلة التوريد لتحقيق أقصى استفادة من الموارد.

Abstract

This research aims to demonstrate that Aramco is a leading global energy company with a global reputation for quality and efficiency, and that its supply chain plays a major role in achieving these goals, which directly impacts the quality of products and services provided, and thus customer satisfaction. The relationship between supply chain, quality, and customer satisfaction is linked to the quality of raw materials. The quality of final products depends largely on the quality of raw materials used and an efficient supply chain that ensures obtaining high-quality raw materials from reliable sources, in addition to production processes. Efficient production processes contribute to improving product quality and reducing defects. An integrated supply chain supports these operations by providing the necessary resources at the right time and in the right quantities, in addition to on-time delivery. On-time delivery is one of the most important factors influencing customer satisfaction. A flexible and responsive supply chain ensures that products are delivered to customers on time. Given the interest of the Kingdom of Saudi Arabia in Saudi Aramco, the main company focused on in the study, it was selected along with 3 private companies in Yanbu Industrial City, which are comparison companies used to evaluate Aramco's practices. My study focuses mainly on this region and the surrounding areas, and the period between (2018-2024) is considered a period of increasing interest and spread of studies related to the impact of supply chain management on Aramco's performance. Based on the importance of the role of supply chain management in Aramco companies, this study reached the most prominent results, which is the existence of a direct link between supply chain efficiency and financial performance. The study is expected to show a strong positive relationship between the efficiency of supply chain operations (such as planning, sourcing, and logistics) and the company's financial indicators such as profitability and working capital management, in addition to the impact of product and service quality. The study will emphasize the role of the supply chain in ensuring the quality of products and services provided to customers, which enhances customer loyalty and improves the company's reputation in the market. It also provided recommendations for developing a comprehensive supply chain strategy. The strategy must be consistent with the company's future vision and include all aspects of the supply chain in addition to enhancing integration between departments, as cooperation and coordination must be ensured between the different departments in the company involved in the supply chain to achieve maximum benefit from resources.

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The impact of supply chain management on organizational performance: an applied
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