

MGT590: Action Research: Designs and Procedures



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COVER PAGE AND DECLARATION

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1. Action Research Topic

Evaluate Supply Chain Optimization through Segmentation and Analytics in FMCG sector. case study of water manufacture and distributor (berain water company) in KSA

2. Abstract

The purpose of this project was to analyze supply chain operations in the Berain Water Company, where the company owns 3 water bottling plants inside Saudi Arabia, in addition to 2 central warehouses and 22 distribution branches, as well as a large fleet of distribution vehicles of up to 400 cars inside the Kingdom of Saudi Arabia, in addition to As it tended to export its products to neighboring countries such as Kuwait, Bahrain, the Emirates, Egypt, Yemen, Jordan and Palestine. It is also part of the company's vision to go global, and this makes it focus mainly on supply chain operations and always seeks to provide proposals and solutions towards improving them. In addition to that, the company owns 40 types of water products that it distributes inside the Kingdom of Saudi Arabia and in neighboring countries and considering the strong competition in the water market and the presence of large competitors in this field, the company seeks to strengthen and improve its supply chain. The proposal will shed light on the evaluation of the supply chain within the Berain Water Company by reviewing previous literature and discussing common problems in the supply chains. This project puts forward the research questions and its objective. The research design, data collection technique, data analysis, validity and reliability have been developed, in addition to the fees. Charts and research summary. The improvement of supply chain operations is an integrated process because it includes within it many organizations such as suppliers, producers, distributors, and retailers. It also includes procurement, production,

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distribution, and demand planning. These processes need strategic, tactical, and operational decisions, so the research will focus on these elements, and it will be reached at the end Research into what the company should do to improve its supply chain operations.

Introduction

A supply chain is a network between a company and its suppliers for the production and distribution of a particular product to the final buyer. This network includes different activities, people, entities, information, and resources. The supply chain also represents the steps you take to get the product or service from its original state to the customer. the company's supply chain is also an important business process for it and necessary for a successful customer experience, through which customers get what they want, anytime and wherever they want in an effective and profitable manner for the organization or company. Therefore, improvement in supply chain operations is more important, important, and vital for any company.

3. Rationale for the Research

The process of improving supply chains refers to the degree of improvement and development in supply chain activities within the company as well as activities with suppliers, customers, and other companies, because supply chains are of great importance in companies. The FMCG industry, sometimes known as the consumer-packaged goods industry, represents one of the largest industries in the world. This sector includes dairy products, fruits, vegetables, water, and soft drinks. The main factor for any successful company in this field is to reduce the cost of the unit produced in addition to the quality of the products. In this field, with the increasing competition

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and the presence of many companies in this field, it makes the matter more complicated. Therefore, the primary role to achieve the best profitability and productivity for any company will be to take care of improving its supply chain operations. Various studies are being conducted to discuss improving supply chain operations in the consumer goods sector. The study differs according to the product that the customer consumes. Given the importance of water for humans and that it is a basic requirement, we find many companies specializing in consumer goods focusing mainly on bottling and selling bottled water. Just as the Kingdom of Saudi Arabia It consumes large quantities of consumer goods, so we find a great growth in this sector within the Kingdom. Fast-moving consumer goods are a large part of our daily purchases, which makes them an important industry for any society or country. Supply chains are considered one of the most important success factors in terms of efficiency and profitability. Companies in this field seek to develop and improve their supply chains and considering the strong competition in This sector within the Kingdom of Saudi Arabia, companies that have not moved to develop their own supply chains are in a very critical situation and may not be able to complete the competition in the selling market. Also, the provision of consumer goods every day without failure means that there is a strong supply chain for the company, as the supply chain depends on establishing and building relationships not only with the customers of the product or commodity, but with the suppliers of raw materials and spare parts so that a balance occurs between supply and demand, just as every company Working in this sector, it has to build a strong supply chain and constantly improve it. The Kingdom of Saudi Arabia is also one of the 20 richest countries in the world, and this economic growth that the Kingdom is experiencing will

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be driven by the younger generations who are attracted to the new product and the best design in the market, especially in the field of consumer goods, as the consumer goods market will have a prominent role in economic growth. Companies will have great challenges to avoid through strong and efficient supply chains that are continuously improved. The supply chain plays a major role in fast-moving consumer products companies, as the supply chain is a system in which organizations, individuals, activities, information, and resources exist as they participate in the transfer of raw materials from the supplier to the product to the consumer, so any improvement process in this chain will have an effective role in developing and company growth.

4. Research Questions and Research Objectives

A. Research questions

How do optimizations through segmentations and analytics affect key metrics of supply chain management in Berain Water company?

B. Research Objectives

The aim of this study is to carry out improvement and development processes in the supply and supply chain within the Berain company as a long-term activity, and among these changes that take place in cost, service, suppliers, transport prices, the nature of customers and the requirements of the company, and this matter requires achieving the maximum possible benefit from the supply chain and supply within the company, especially And that after Covid 19, the importance of the role of supply chains emerged as an essential element in the growth and development of companies, as companies that had a strong and effective supply chain were able to benefit from this crisis and achieved great growth. As for companies that had a weak supply chain, they did not keep pace

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with the crisis, and some of them tended to close. Especially since the current competition between companies has become more in supply chains than in products and services.

The objectives of this research are as follows:

- ✓ **Optimizing supply chain costs by eliminating unnecessary costs by eliminating inefficient processes within the supply chain**
- ✓ **Improving the supply chain by meeting customer requests and fulfilling their desires by achieving the principles of product deliveries, which are (time - quality - price - place - quantity)**
- ✓ **Improving the supply chain by reducing investment in inventory while not affecting customer orders, as the money that was reserved in inventory can be used in other investments within the company.**
- ✓ **Improving the supply chain, which contributes to the speedy fulfillment of customer requests, rapid settlement of invoices and money collection operations, which reduces the investment cycle against the return on investment.**
- ✓ **Supply chain optimization helps to better evaluate suppliers in terms of quality, price, delivery time, and the supplier's ability to meet the company's needs.**

5. Literature Review

Supply chains are considered one of the most important paradigms shifts in the modern era, as companies no longer compete with each other as companies, but rather compete in supply chains. Where competitions between a brand and another brand have changed to competition, for example between suppliers and store versus store or supply chain versus supply chain The success of the individual company will be based on the extent of

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its ability to integrate all operations into a network of business relationships, and this is called supply chain management, as the supply chain is a network of businesses and relationships that need integration and improvement for the success of the company.

Lambert(2000).

The supply chain is an integrated manufacturing process that starts from raw materials that are transformed into finished products.

Then it is delivered to customers, and the supply chain is based on two basic operations:

The first is production process planning and inventory control.

The second is the distribution and logistics process.

It is through these two processes that the supply chain is successful.

As supply chain operations include production planning and inventory control for manufacturing, and more deeply, production planning describes the design and management of the entire manufacturing process, including raw materials, material scheduling, design, material handling and control.

The process of distribution and logistics determines how to retrieve products as well as transfer products from warehouses to retailers, as these products may be transferred directly to retailers and may be transferred to distribution facilities and then transferred to retailers. And through the interaction of these processes with each other.

An integrated supply chain is produced. Beamon(1998).

The supply chain of any company is an integral part of its approach to the markets in which it serves and operates. As the supply chain needs to respond to the requirements of customers in the markets, by using methods that support the company's strategy in

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carrying out its business. As the strategy of any company begins with the needs and requirements of customers and whenever the supply chain is strong and effective, the company will be able to achieve and gain a larger segment in the market, through the response and efficiency that the supply chain carries out towards meeting customer demands. Hugos(2018)

In a globalized and highly competitive business environment, supply chains have become more prominent than ever because the company's strong competitiveness depends on the performance of its supply chain. The supply chain includes all activities from purchasing raw materials to manufacturing and distributing finished products. Pourhejazy) 2016).

Supply chain management is recognized as the management of major business processes across the network of organizations that make up the supply chain. While many have recognized the benefits of a process approach to business and supply chain management, most are vague about the processes that must be considered as well as the sub-processes and activities involved in each process and how deal with each other. Croxton(2001)

Over the years, most companies have focused their attention on the effectiveness and efficiency of their separate work functions, but as a new way of doing business, an increasing number of companies are beginning to realize the strategic importance of planning, development, and supply chain design, to achieve integration between organizations and functions across supply chains, and then the best is taken. decisions about supply chains. Min(2002).

The supply chain is a network of concerned organizations, which starts from the supplier of the supplier to the customer of the customer, which is based on the various

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operations and activities that produce value in the form of products and services that reach the final customer. Also, effective management of the supply chain is necessary for successful competition in global markets today, as it is a philosophy Describes what organizations must manage the supply chain to achieve strategic advantages aimed at balancing the demand for raw materials and achieving the customer's desires.

Papadopoulos(2016).

The company's supply chains can improve their performance by developing competitive priorities that work in a specific sequence, and among these priorities (quality, flexibility, agility, reliability, and then cost). Kritchanchai(2014)

Collaboration in the supply chain leads to significant improvements in multiple areas of performance. It reduces costs, increases quality, improves delivery, increases flexibility, reduces purchasing costs and lead times, and stimulates innovation. Vereecke (2006)

As a result of the increase in global business competition, many organizations are looking for ways to gain a competitive advantage, as competition has shifted to the supply chain, and thus improving the supply chain has become a necessity for survival.

Researchers strongly suggest applying Lean in supply chains to achieve the required competitive advantage for the company. Ugochukwu(2012)

Manufacturing companies are increasingly realizing that gains in their competitive advantage are not limited to improvements in internal processes, but external supply chains must be considered as well. These companies focus on optimizing their internal and external processes. Olhager(2012)

In modern manufacturing operations, supply chain management has become a critical issue for most manufacturing companies to gain their competitive edge in today's

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market. Supply chain performance relies heavily on effective communication and coordination between system elements and functional areas due to the increasing complexity and size of the supply chain in the manufacturing industry. Chen(2007)

It is now necessary for companies to manage the supply chain to improve customer service and achieve a balance between costs and services, and thus the company can obtain a competitive advantage. Managers must work to integrate the supply chain, that is, to ensure that all functions and operations are done in harmony, and that the development of an integrated supply chain means the flow of materials from three points of view: strategic, tactical, and operational Stevens(1990)

Supply chain management is an integrated system adopted by a wide range of participants, including manufacturers, retailers, and distributors, to achieve greater efficiency and enhance business advantage, as the supply chain is a critical functional unit in the societal circulation system of finished products. Wang(2016)

The supply chain is an integrated set of business functions starting from obtaining raw materials until final delivery to customers. Today's changing industry dynamics have influenced the design and patterns of supply chains in terms of focusing on customer service levels, improving the quality of products and services, reducing costs, reducing cycle time, and providing procedures Effective coordination of supply chain activities and this has led to the need to improve operations within supply chains. Beamon(1998)

Modern supply chains are very complex and dynamic, so it is important to focus management attention on the performance of the supply chain as an integrated whole rather than focusing on a group of separate operations. Hausman(2004)

In a global competitive economy, organizations must pay constant attention to

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increasing response to changes in customer demands, as well as the need to maintain a competitive advantage over their competitors. Therefore, focus must be placed on supply chain management because it focuses on materials, information, and cash flows from vendors to customers, or vice versa. Agarwal(2002)

Improving supply chains is by moving the chain as the fish moves, so staying together is a way of life, as well as in the supply chain, as incompatibility means poor service, high inventory, unexpected costs, loss of market share, and few profits. Bolstorff(2007).

Interest in supply chain management has grown steadily since the 1980s when companies saw the benefits of existing cooperative relationships both inside and outside their organization. Companies are no longer able to compete effectively in isolation from their suppliers or other entities in the supply chain. Lummus(1999).

Supply chains have become prominent in the context of business and economic systems through the interdependence between suppliers, manufacturers, and consumers. Due to the presence of many variables in suppliers, inventory costs, inventory levels, transportation, and sales channels, flexibility and development must occur in supply chains. Lummus (2003)

Performance measurement systems are important in the supply chain. Over the past few decades, there has been a transition from traditional performance measures to more complex ways of measuring supply chain performance. The focus was on cost, time, and accuracy. However, organizations are now subject to more scrutiny from customers and governments regarding environmental responsibility social. Shaw(2010).

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6. Description of Participants of the Study

Given that the Berain Water Company is a large company and occupies a large position in the fast-consuming products sector in the Kingdom of Saudi Arabia, the participants in this study will be among the following.

The CEO of the company in his capacity is the most important member of this system and any development or improvement in the supply chain within the company will maximize its profitability and increase its market share.

The executive director of the supply chain in the company, in his capacity as the one who will be responsible for following up and implementing the improvement processes that will take place within the supply chain, and his experience and skill in this field will be utilized.

Employees in the supply chain, where their opinions will be heard and discussed to find the best ways to improve the supply chain operations in the company.

The suppliers of the Berain Water Company, in their capacity as having a partnership relationship with the company, as the growth and improvement of the supply chain operations within the company will be reflected on the suppliers, through increased requests from suppliers, as well as their obtaining their cash dues firsthand, and by improving the supply chain within the company, the company will be able to Create strong relationships and link between suppliers and customers.

The client of Berain, in his capacity as the basis for the establishment of this system, as the company seeks to meet the client's requirements, raise the level of service provided to him, and provide the required products at the right time and place, with the appropriate quality and price. He should also listen to the client's suggestions towards

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developing the product or improving the level of service provided to the client, and in the event of improvement processes in supply chains, the company will be able to build a strong relationship between suppliers and customers.

Competing companies in this field, as it was mentioned at the beginning of the research that the field of food and beverages is a large field in Saudi Arabia and the competition in it is very strong, so it is necessary to see what other companies are doing in their supply chains to benefit from their experiences and apply what they have reached in supply chains.

Supply chain consulting companies, as these companies provide solutions and proposals that benefit the company in developing its supply chain.

Invoking models from international companies that work in the field of food and beverages, such as Pepsi and Coca-Cola, where through the experiences of these companies, Berain can benefit from the development that took place in these companies in the supply chains, and then apply it in the supply chain in Berain.

According to what was mentioned above, the participants in this project will be benefited, each in its own regard, in order to bring about development in the supply chains within the Berain company so that it can continue to develop and then increase the market share of the company, which will lead to an increase and maximization of profitability, especially that the field of water bottling Within the Kingdom of Saudi Arabia, it is considered a very vital and critical field, due to the large number of competitors in this field.

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7. Methodology

❖ Description of participants of the study

The research in this report will be about a qualitative case that helps generate information that helps the Berain Water Company, and in particular its supply chain management, to achieve improvement and development processes for the supply chain and its activity, whether inside or outside the company. Information and data collection will be done through accepted facts and human perceptions in the field of food and beverages. Especially fast-moving commodities and the opinion of leaders in the processes of improving supply chains. Also, identifying the reality in the minds of corporate leaders and evaluating their ideas by measuring performance levels in supply chains. Therefore, the research will be a mixture of qualitative and quantitative data, so the philosophy applied in this research will be practical. It will the approach in this research is based on presenting the information collected from the employees of the Berain Water Company, including the CEO of the company, the executive director of the supply chain, and workers in the supply chain sector within the company, as well as the information that will be collected by specialists in supply chains in the food and beverage industry. And because the researcher is part of this study and based on his personal experience in this field, he will be able to analyze the research, clarify the similarities and differences, and identify the strengths and weaknesses to reach a conclusion for this research. Thus, there will be an inductive approach to this research. The research strategy was also planned in the form of a survey using a questionnaire Where quantitative questions will use a measurement system, and evidence on the scientific aspects of supply chain optimization processes in food and beverage companies

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will be subject to quantitative analysis. The opinions of leaders and experts in supply chains will be targeted to quality. The research will ensure the actions companies will take to improve supply chain operations. The approach focuses on improving processes and methodology selection will be mixed in order to reach potentially decisive answers. Data will also be collected according to the time frame for the study. This study was also designed in a qualitative way to make maximum use of the opinions of experts and leaders in the field of supply chains, especially in the field of industry. Food and beverages. The design of the study was also appropriate to describe the reality within the Kingdom of Saudi Arabia, and just as the improvement of supply chains has become a phenomenon in companies as an economic phenomenon, it is also considered a social phenomenon, as supply chains do not affect companies only, but also affect customers in addition to their impact on the environment. And just as the main goal of any company is to meet the requirements of customers and achieve their desires to be able to increase the market share and maximize profitability, so it was necessary to extrapolate and take people's opinions on this subject to benefit from their opinions and suggestions, which will undoubtedly help in achieving improvements in chains supply. Also, there will be a part in this research that depends on the opinions of suppliers as an important partner of the company in its operations, where it is possible to benefit from the opinions of suppliers about the operations of supply chains within the company, and it also takes their opinions in designing.

❖ Description of intervention (treatment) and/or data collection tool(s)/material(s).

The study of this research is specific to improving the supply chain operations within the Berain Water Company and thus the focus of the researcher will be on sampling from

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the Berain Water Company, in addition to the samples that will be taken from abroad, but the focus will be on samples from within the organization. Since the researcher is part of this targeted industry, it is easy to apply the judgment to choosing the appropriate participants to make the sample. The highest standards in reliable responses will be to deal with participants only for whom the research will be of professional importance, as whoever has an interest in a specific thing will tend to do his best in it and provide the best proposals and solutions that help in the success of the matter related to this work. One of the objectives of this research is to understand the extent to which companies think about developing and improving their supply chains, and since such matters are related to the decision-making circle within companies, there will be a focus on sampling CEOs of companies and supply chain managers as well as experts and leaders in this field. The sample will cover the Berain company as well as the competing companies in the Kingdom of Saudi Arabia in the food and beverage industry.

Random samples will be taken across the Kingdom of Saudi Arabia. This will be a random sampling approach. A sample will be taken from the managers of food and beverage retailers. The sample will be designed in a simple way. The identity of the respondent will be anonymized throughout the survey period.

The multi-case study population consisted of five pioneers and experts in supply chains in the food and beverage sector in the Kingdom of Saudi Arabia and an expert from a multinational company in the United States of America. With them face to face and some of them through the Zoom application. The current situation of the supply chain within the Berain Water Company was discussed with them and what are the methods

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and methods that can be used to improve the supply chain. The operations of the supply chains in some competing companies in the food and beverage sector in the Kingdom of Saudi Arabia were followed up. The data and information available on the Internet about leaders and experts who dealt with issues of improving and developing supply chains were also reviewed, as well as access to financial reports and supply chain reports on the websites of some companies, by looking at reports available to the public. There was basic support from the leaders and heads of companies who were Communicating with them, as many interviews were conducted with experts in the food and beverage industry, which made the samples clearer and more proved effective in the results of the study and the research presented. Also, the permanent customers of the Berain Water Company had a major role in this study, as their opinions and suggestions were used to improve the level of service provided to them, as the loyalty of customers to the company made them present their best proposals.

❖ Detailed and descriptive data collection procedure

The data that will be used for this study / research will be the primary data that will be relied upon in achieving improvement of the supply chain operations in the Berain Water Company. The data has been collected through personal interviews with leaders and experts in the food and beverage industry regarding supply chains. Data has been collected from Through the Maya Berain Company, as well as from the companies that tended to develop and improve their supply chains, through an inductive questionnaire conducted with the companies, which clarifies the current situation of these companies in the operations of supply chains and the improvements that are being made in them, and the opinions of customers had a great role as it was presented Phrases (strongly

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agree - agree - not interested - strongly disagree - disagree) Undoubtedly, this questionnaire will create a positive attitude that will help Berain to improve the level of its services to customers. For companies, the questions will be compatible with the required objectives and cover quantitative data, and there will be an option available to provide comments, suggestions, and observations, and to clarify any ideas they wish to add to the qualitative data, these questions were divided as follows:

Assessment of supply chain operations within Berain in the food and beverage industry
Analyze current practices, policies, and procedures to achieve improvement of supply chain operations in Berain.

Evaluate factors, barriers, challenges, and opportunities during the implementation of supply chain optimization processes.

Provide recommendations on research and highlight the critical factor affecting efficiency in the supply chain sector of the food and beverage industry in the Kingdom of Saudi Arabia, particularly in the Berain Water Company.

The researcher conducting the study will contact directly with the proposed participants from a selected list of the sample under study, through which they will clarify what is required on their part and ask for their feedback. Via e-mail id or registered directly by the researcher.

Validity and Reliability

Since the source of information in the research is from the primary data collected by the researcher, the percentage of accuracy and reliability will be high, as direct transmission will be ensured from the Berain Water Company and from the experts with whom he communicated, as the data will reflect its validity without reflecting any other

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interpretations. Also, the validity of the data and information contained in Research will enhance the credibility of research and study and help build appropriate evidence.

The researcher can also enhance the reliability and validity of the data by conducting an examination of the members by collecting each question / answer and asking follow-up questions with each participant in addition to downloading the data from the websites of the companies of the experts, as the documents available to the public are a rich source of the required information. It was collected from the interviews of the participants as well as the opinions of customers, and this helped to reach reliable experience about the improvement of supply chains.

Data Access

The data, information and opinions of the participants who were interviewed were collected and placed on my laptop and protected with a secret number that is not shared with anyone. Access to the opinions of the participants in the research will be subject to their consent, and the publications will not relate to any financial or sensitive information related to the participants in the research The names of the companies will not be requested from the participants in the research except after obtaining their prior approval. The opinions will be according to the percentage. The public opinion questionnaire will also require the researcher to respect the agreement and not to share any of them beyond the approval of the participant in the research / study.

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8. Data Analysis & Presentation of Results of Findings

Since the research consists of different methods for the data collection process, each type of data will be analyzed separately using appropriate methods to complete the research fully. A Likert scale for quantitative data will be assigned a number against each of the response options Strongly Agree = 1, Disagree = 2, Strongly Disagree = 3, Disinterested = 4, Possible = 5. The responses will be displayed in the form of a graph indicating the percentage of each number, and thus a common trend, if any, can be identified.

Also, open comments and observations can be evaluated to check for recurring or similar points, ideas, or reasons that may repeat a certain direction that the respondents are likely to take. The goal is to find out opinions and ideas about the process of improving the supply chain within the Berain company. The data was also divided into topics, and these were analyzed Qualitative data by following a logical approach to strategic planning in optimizing supply chain operations to take advantage of them. The focus was on further analysis and identification of relevant ideas resulting from the data transferred from the interviews with the participants. This data also served as a roadmap for discussing topics related to the research as it allowed Follow open questions and periodic interviews to collect and arrange this data in an optimal manner. According to the data and proposals that have been collected and based on the data and analyzes made in this research, Berain can improve its supply chain operations by focusing on the following aspects:

i. Perfect Order Measurement

This means the percentage of sales orders that have errors.

It means $\frac{\text{Total Orders} - \text{Error Orders}}{\text{Total Orders}} * 100$

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The current rate at Berain Water Company is 90% for orders.

After a review of the presented data and proposals, the rate is improved through good inventory control, and the warehouse movements are automated. Shipments are automated and the level of reflection is reviewed after doing so at the perfect order rate.

The measurement will be 92% in the Berain Water Company within one year.

ii. Fill Rate

The percentage of a customer's order that is filled in on the first shipment.

It means the $(\text{total items} - \text{shipped items}) / \text{total items}) * 100$.

The current rate in the company is 91 %

And it can optimize the rate through Building a strong relationship with suppliers and not relying on a single supplier to provide needs. Good planning for needs and requirements and a correct delivery time. Implementing the material requirement planning (MRP) system. After doing that the fill rate will be 95 % in the company.

iii. Inventory Days of Supply

The number of days it would take to run out of supply if it was not replenished.

It means the inventory on hand / average daily usage.

The current rate in the company is 25 days.

And it can optimize the rate through Reduce the gap between the forecast and demand, reduce the error in the forecast, and know there are not forecast is correct 100% but there is good forecast, and the days of the promotions are chosen very carefully.

After doing the above the days of supply will be 18 days.

iv. Inventory turnover

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It means the number of times the company's inventory rotates during the month, quarter, or year.

Which means cost of goods sold/average inventory.

The current rate of inventory turnover at Berain Water Company is twice a month.

According to the proposals, suitable storage spaces can be used for the required and expected sales quantities, as well as reducing the period of keeping the stock inside the warehouse. Upon completion of this matter, the inventory turnover will range between two and a half to three times per month.

v. Days Sales Outstanding

This is a measure that shows how quickly revenue is collected from customers and is determined by $(\text{Receivables}/\text{Sales}) * \text{days in the period}$.

According to the current status of Berain, it is 20 days per month, and it can be improved by focusing on the customer's credit limits, reviewing invoice operations, and giving benefits to customers who have speed in collection. After completing this, the due days will be reduced from 20 days to 17 days per month.

vi. Customer satisfaction

The most common rating scales include one to 10 or one to five choices. The bigger numbers are better, and they mean.

$(\text{Number of satisfied customers} / \text{total number of customers}) * 100$

The current rate of the Berain Water Company is 3 out of 5.

The rate can be improved through continuous improvement in the level of service provided to the customer, customer participation, taking their opinions on product

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design, and meeting customer requirements in the appropriate time and quality.

vii. Utilized capacity.

Which means measuring the percentage of space used in warehouses, and it is determined by the following:

(Total storage area/total capacity per pallet) *100

The current rate in the Berain company is 91%, and this rate can be improved using cube storage because this system can be used from 96 to 98% of the total area of warehouses.

After making improvements and development in the points described above, the process of improving the supply chain will be achieved within the Berain company, because the supply chain is based on warehouses, transportation, planning, procurement, and delivery. If improvement is achieved in these sections, then improvement and development has already been made within the supply chain.

Given that the supply chain is one of the complex matters within companies, it must find interest from the company's senior management, as the development of supply chains will undoubtedly be reflected in increasing the market share and maximizing profits.

There is no doubt that the data and analyzes that were made on the supply chains within the Berain company gave it an opportunity A large and suitable environment in order to complete the development and improvement processes within the supply chains. There is also an important element that if the company turns to it in developing supply chains, it will have a significant impact on it, which is the automation of the processes within the company, as this matter will help in improving supply chains significantly.

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9. Conclusions, Implications and Recommendations

The supply chains of major companies include hundreds of facilities (retailers - factories - suppliers - distributors - agents) and include thousands of spare parts and products. For example, a car manufacturing company has 12 thousand suppliers and 70 factories and operates in 200 countries around the world and its annual sales reach 8 6 million vehicles annually. A second example illustrates this matter, as the US Defense Logistics Agency stores more than 100,000 products. This indicates the importance of supply chains for companies, as with the increase in the volume of work and the large number of items and facilities, a strong supply chain must be available for the company to help it expand. own market share, which results in maximizing profitability.

The objectives of the companies' supply chain are to provide customers with the products they want at the right time - the right quantity - the right quality - the right price - the right place and as efficiently and profitably as possible. This is undoubtedly developing considering the information revolution and the rise of electronic commerce. The current focus is on developing and improving supply chain models, as this is one of the most active areas of application for operations research and management sciences today. This undoubtedly reflects that the success of any company depends largely on the efficiency that enables it to design, manufacture and distribute its products in a global economy where competition is increasing. Under the development of capabilities and the ease of availability for all. The supply chain is also a group of organizations that work together to provide the appropriate product or service in a profitable manner to the customer. given that the supply chain is complex and difficult to manage, especially when many suppliers and products / services are involved, organizations and companies

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must give priority to continuous improvement processes in supply chains to achieve efficient flow of products / materials / financial flow. With the developments that are taking place in the world around us, especially in the field of economy and the control of technology mainly on a large proportion of the business related to us, companies should always move to automate their logistics operations and take advantage of current developments related to artificial intelligence and machine learning, as the use of this development helps companies maximize their profitability by reducing costs and mainly meeting customer demands. Companies should also tend to benefit from the experiences of competitors in supply chains. This is to implement the successful experiences of these companies, as well as to try to present new proposals and building ideas that serve supply chains and help in improving them. Companies should also seek to develop their supply chains so that they can reduce their costs and remain competitive in business. Supply chain management is also a critical process because an improved supply chain leads to lower costs and a faster production cycle.

And given that at the present time customer expectations have become high, this means that every element in the supply chain must be monitored and evaluated with great accuracy. Many companies have also made strategic investments in supply chain management to create efficient and effective organizations, and this made these companies make a major revolution in This field is the best example of Amazon company in the field of electronic commerce.

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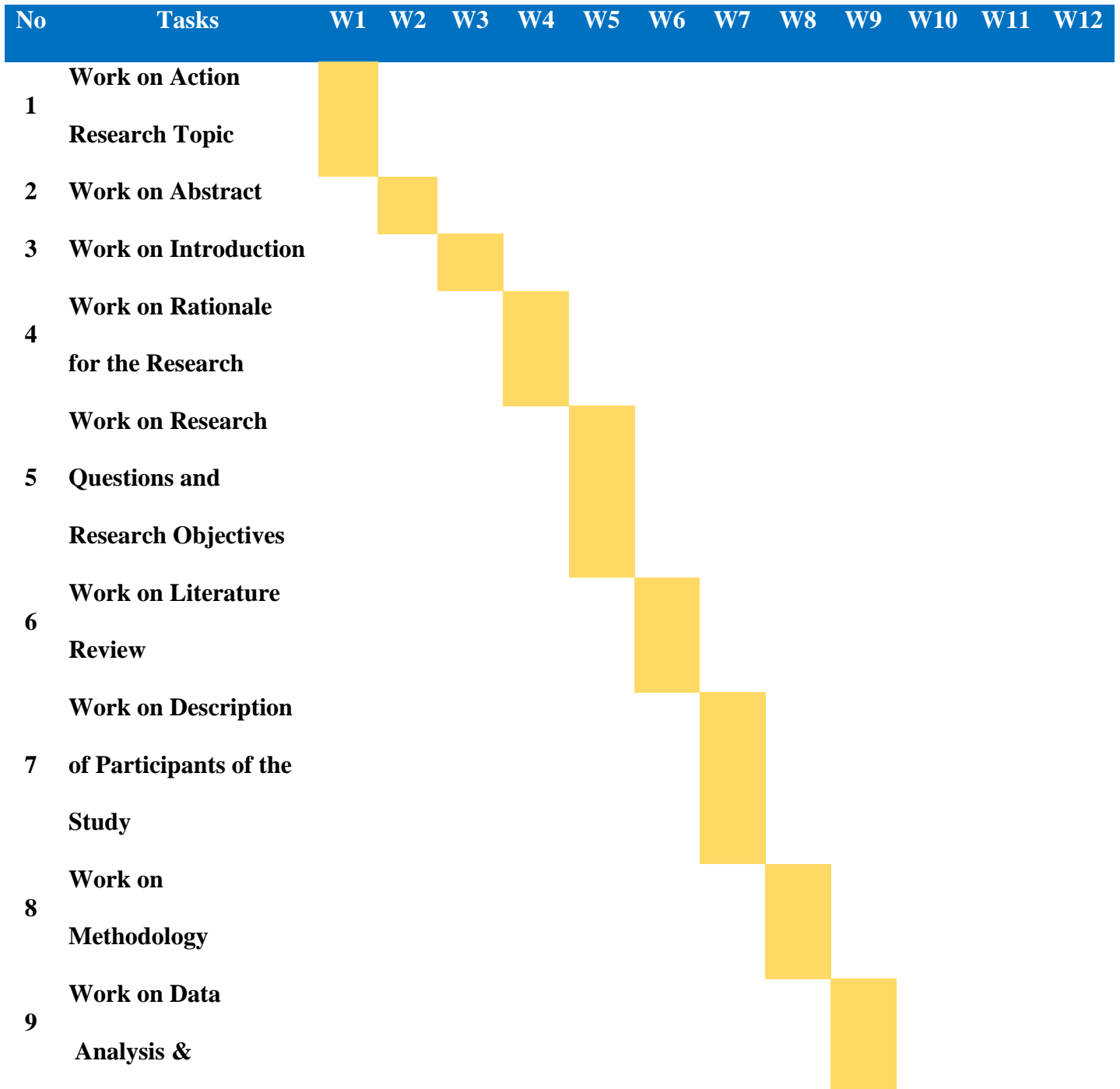
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Gantt Chart

Weeks



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Presentation of

Results of Findings

Work on Conclusions,

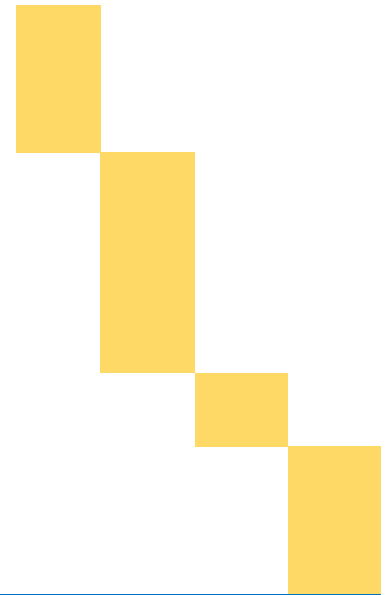
10 Implications and

Recommendations

11 Work on References

12 Final submission of

the research



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Appendix

How many employees in your Supply chain?	1–10 employees	11–20 employees	21–50 employees	51–100 employees	101–500 employees.	> 500 employees.

How many employees in your company?	1–10 employees	11–20 employees	21–50 employees	51–100 employees	101–500 employees.	> 500 employees.

How many clients do you have in your company?	1–10 employees	11–20 employees	21–50 employees	51–100 employees	101–500 employees.	> 500 employees.

How many suppliers do you have in your company?	1–10 employees	11–20 employees	21–50 employees	51–100 employees	101–500 employees.	> 500 employees.

What is the type of work in your company?	Finance	Healthcare	Retail or wholesale trade	Food and beverage	Construction	Others

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From how long your business has been around	0–5 years	6–10 years	11–20 years	21–30 years	31–50 years	> 50 years.

What challenges does the company face in supply chains?	1	2	3	4	5	6
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How accurate are orders received from customers?	75%	80%	85%	90%	95%	100%

How can you increase inventory turnover in your company?	1	2	3	4	5	6
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Customer satisfaction	1	2	3	4	5

Utilized capacity	1	2	3	4	5	6
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How long does a supply chain optimization project take in your company?	4 Months	6Months	8 Months	10 Months	12 Months	> 1 years
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