AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Research in Humanities and Social Sciences
ISSN (E): 2832-8019 Volume 27, | August - 2024

THE IMPACT OF THE CORONA PANDEMIC ON SUPPLY CHAINS AND ITS IMPACT ON PRODUCTION COSTS IN ECONOMIC UNITS-A SURVEY STUDY OF A SAMPLE OF WASIT TEXTILE AND SEWING WORKERS

Sattar Oleiwi Dahash.
Assistant Teacher, Southern Technical University
Technical Institute / Shatrah
Sattar.dahash@stu.edu.iq

Sami Hatem Matar
Assistant Teacher, Middle Euphrates Technical University/
Rumaitha Technical Institute
samihatam480@gmail.com

ABSTRACT

The emergence of economic units and the innovation of new products is one of the most important challenges in the competition market, and therefore economic units must seek to keep pace with the developments that are taking place at the moment, through the continuous development of systems and methods in cost management of processing chains, which contribute to finding the important pillars on which economic units depend to achieve their goals and maximize their benefits. The research shows the impact of the Corona pandemic on supply chains and their impact on the cost of production in those economic units.Wasit textile and sewing factory – Selecting Iraq as a practical case, we have drawn some conclusions, the most important of which is that the COVID-19 pandemic has had an impact on the production costs of Iraqi economic entities.

KEYWORDS

Corona pandemic, COVID-19 , supply chain, cost , supply chain cost management.

Introduction

Processing chains and cost management are relatively recent things. They have become important functions in production and commercial institutions with regard to material needs that include supply, transport, distribution and production, through which production institutions seek to reduce the costs of processing chains and pay attention to the things that affect them by choosing patterns at the lowest cost, more effective and faster. As well as focusing on reducing the impact of the Corona pandemic on the costs of supply chains. The research will address the theoretical aspects of the Corona pandemic, as well as the theoretical aspects of the supply chains, concluding the research in the applied aspect, analyzing the hypotheses of the research, and adding the conclusions and recommendations of the research.

The first topic: - Research Methodology

1.1 Research problem

From the point of view of the researchers, the research problem can be the result of the weakness of the supply chains as a result of the Corona pandemic (Covid-19) ,as a result of the dependence of most economic units on suppliers from low-cost areas, and this made these units unable to obtain their needs of materials used in their manufacturing processes as a result of the complete closure of cities , which in turn led to the complete interruption of processing operations, and therefore the research problem is summarized by the following questions:

A. Can the economic units change the supply chain, that is, rely on areas close to the economic units?

B. Is there a capacity in the economic units to improve the chain of management and organization of the supply chain so that they can face the emergency circumstances?

C. Is there a benefit for the economic units in the event of modifying the supply chain, by making them more flexible as a result of the delays they have experienced?

2.7 Research Objective

In light of the research problem and the questions raised, the research aims mainly to indicate the impact of the Corona pandemic on processing chains and its impact on production costs in economic units. In addition, researchers seek to achieve the following sub-objectives:

A- Presentation of a theoretical framework on the Corona pandemic and the management of supply chains

B- Demonstrate the role of processing chains and their impact on associated costs.

C- Demonstrate the lessons learned from the Covid-19 pandemic, by adjusting the supply chains and making them more flexible to face emergency conditions in the future .

3. Research Hypothesis:

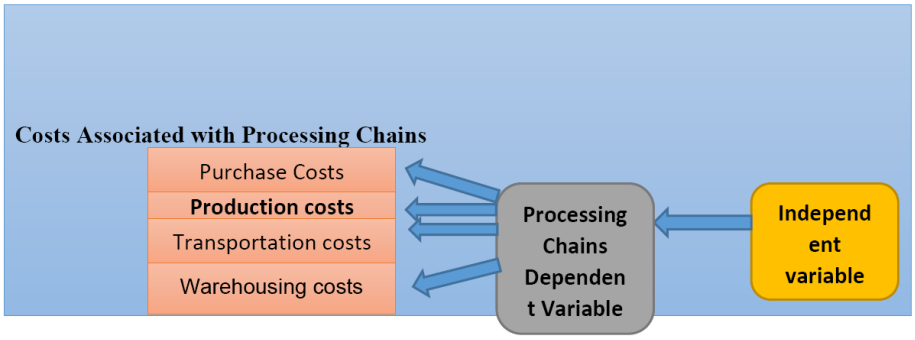
The research is based on two main hypotheses:

A- There is a significant correlation between the Corona pandemic and its impact on supply chains and its impact on associated costs.

B- There is a significant impact between the Corona pandemic and its impact on supply chains and its impact on the associated costs.

4 Virtual outline of the study

Costs Associated with Processing Chains



Source: - Prepared by the two researchers.

Research importance

The importance of the research stems from the importance of processing chains at the level of the economic unit, as many successful economic units in industrially developed countries adopt trends based on creating a long-term and flexible relationship with processors, which are based on the method of participation between processors on the one hand and producers on the other hand in the design and development of products, and other decisions that are important through communication , continuous coordination, as well as linking to a specific number of processors and facing emergency cases by the departments of the economic units by adapting to those circumstances, i.e. prior planning and making the processing chains capable of facing them.

Methodology

The study relied on the theoretical aspects of the inductive approach by reviewing the research and studies related to the research topic . The study also relied on an exploratory approach based on a sample of surveys distributed to textile and weaving mills to gather their opinions on the study variables.

Research population and sample

Wasit textile and sewing factory was chosen as a site for the study, because it is considered one of the productive industries in Iraq, and the fact that the factory has great importance in the production and distribution of textiles and clothing to the Iraqi markets that contribute to meeting the needs of the community . The community represents all managers and heads of departments in the factory. An intentional sample of (110) managers and heads of department from various disciplines was distributed to them and the questionnaires were retrieved from them (103) and valid for the analysis of the questionnaire (100).

8. Research Limits

Spatial Boundaries -: The two researchers chose (Wasit textile and sewing factory).

Temporal Limits-: The temporal limits of the study extended the period of coexistence, interviews, distribution and retrieval of the questionnaire in Wasit weaving and weaving factory from (28-3-2024)to (28-3-2024) in the practical aspect of the study.

9. Data Collection Method

The two researchers relied on foreign references and sources through periodicals and research , theses, university theses, websites, e-books, laws and instructions.

The second topic: - Theoretical framework

The Corona pandemic is one of the most dangerous pandemics in the entire world in this era . Through its impact on all aspects of human life, whether health, economic, political or scientific , this pandemic will be introduced and then highlight the supply chains and costs in industrial companies.

First: - Introducing the virus (covid-19)

Coronaviruses are a large family of viruses that can cause disease in animals and humans. Many coronaviruses are known to cause respiratory infections in humans, ranging from the common cold to

more severe illnesses such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The newly discovered coronavirus causes COVID-19.
COVID-19 can be defined as: an infectious disease caused by the recently discovered coronavirus. There was no knowledge of the existence of this new virus and disease before the outbreak in the Chinese city of Johan in December 2019 (Awareness Guide, 2020:p. 1).

Second: - Processing chains

1. Supply Chain Concept

The supply chain is considered a series of organizations (its facilities, functions and activities involved). in the production and delivery of goods or services), starting with the main raw material suppliers and ending with the final customer.
Also known as: the sum of the activities performed by an organization to provide products and services efficiently and effectively and deliver them, starting with the source of processing, the selection of raw materials, then production and distribution, to the final customer. On time, to customer satisfaction. (Assaf, 2015:14-15)
It's considered a cluster of products and manufacturing facilities that are directly or indirectly connected via product identification decisions, this prevents any product from being produced by a facility outside of the chain, and prevents any manufacturing facility from producing products outside of the chain. (Rifai, 2004:7).

2. Evolution of the concept of equipment management

A- Supply: The definitions of supply have varied a lot and its concepts have evolved with the development of the perspective from which supply has become seen as an important function in the institution. Supply is the flow of materials and supplies from the beginning of their request in the form of raw materials until they reach customers in their final form, focusing on activities related to the management of material and information flows so that they are combined according to a long chain so that supplies are placed at the disposal of the commercial interest.
B. Supply Chain Management: Supply Chain Management is a new method of advanced management that is expanding in popularity in various industries worldwide. It has become essential and paramount to the success of companies and the provision of exceptional services to customers while lowering costs., thereby remaining competitive and achieving exceptional success. (Khansal, 2020: 7).
Process chain management can be defined as : the integration and management of organizations and activities through the relationship of cooperating organizations, the efficiency of operations and through a high level of information sharing in order to create high-performing value systems. In addition, it can be defined as : It is the management of the beginning and end of the flow relations with suppliers and customers, in order to provide the best service to customers at the lowest cost borne by the supply chain as a whole. It is also known as : The department responsible for supplying materials from purchases to meet customer requests at the lowest possible cost, providing the right products at the right price and at the right time, and delivering them to consumers accurately (Aws, 2017: 21-22).

3. The main roles of supply chain management:

A- Focus on the impact of the process chain on site activities and try to reduce the cost and time required to perform operations. The main consideration is to ensure the normal flow of materials and labor to the construction site and avoid interruptions to the workflow..

B- Focus on reducing costs in the supply chain itself, especially in logistics operations and inventory management.

C- Focus on transferring activities from the construction site to the previous stage of the supply chain to avoid emergencies on the construction site and ensure wider compatibility between all activities.

D- Focus on the integrated management and optimization of the processing chain and production facilities to reduce overall costs and implementation cycles (Alzazou, 2015: 53).

4. Fundamental factors affecting the management of the processing chain:

(a) Environmental uncertainty: refers to unexpected changes in customers, suppliers, competitors, and technology. This factor generates three sub-factors as follows:

1- Company environment: It is related to the relationship between the company and its suppliers and the degree of trust and commitment. It is also related to the company's expectations of quality, timeliness of delivery, industry competition, and the level of competition between companies.

2- Government support: This is the level of support the company receives from the government when it imports raw materials or products from abroad or uses local materials.

3- External uncertainty: It arises when outsourcing raw materials or products. In this case, environmental factors such as uncertainty in political and economic conditions in other countries must be considered, which may increase supply risks, affect investment decisions, and change business strategies and general business decisions.

(b) Information technology: Telecommunications, information technology, and computers enable all participants in the supply chain to communicate with each other. IT can also help suppliers, manufacturers, distributors, retailers, and customers reduce time, paperwork, and other unnecessary activities. On the other hand, by using information technology, managers can gain many benefits, including consistent information flow, exchange of data and information, and improved relationships with local and international customers and suppliers.

(c) Supply Chain Relationships: Supply chain relationships play an important role in achieving organizational goals, coordinating and integrating activities with suppliers, and understanding customer needs, all of which provide greater benefits to the company. Supply chains are directly related to relationship management, which includes relationships with customers and suppliers. These relationships are a key component of supply chain management practices, enabling information sharing and one of the key factors in creating a strong supply chain (Al-Batanouni: pp. 230-231).

Third: - Cost Overview

1. Cost Concept

Cost is a rubber term that involves many different meanings in its content according to many considerations, whether these considerations are related to the purpose of measuring and calculating cost, or to the foundations and principles on which measurement is based. As a result, the content of the cost may differ for the individual from the content of the cost for the community, as well as the content if the goal of the measurement is different than the purpose of the measurement.

Cost is generally understood as: the monetary or moral expenditure of another's economic value in order to receive a benefit (good or service) in the present or future.

From the general definition of cost, it is apparent that:

A- The cost is a sacrifice of economic value, which may be represented in a physical form, such as sacrificing, for example, one of the constituent elements of wealth and assets (whether tangible or intangible assets), or that the sacrifice is in a moral form, such as the muscular or mental effort that a person sacrifices to obtain a benefit.

B- Sacrifice is of economic value to both the sacrificer and the beneficiary, otherwise it is not considered a sacrifice, and it is not afraid that the economic value of sacrifice depends on the relative scarcity of what is sacrificed, which in turn is affected by the difference of time and place, both of which affect the relative scarcity of sacrifice.

C- It is not necessary to obtain the benefit at the time of the sacrifice. The cost in order to obtain a benefit, whether the benefit is obtained now or in the future (Bassiouni et al., 2017: 20).

2. Cost Categories

The cost can be divided into two parts:

A- Unexpired costs: They represent the value of the economic benefits obtained by the organization and have not yet been exhausted and are therefore considered assets of the organization.

B- Expired Costs: It represents the value of the economic benefits obtained and depleted by the organization during the period. These depleted costs, if offset by the organization's obtaining revenue from them during the same period, are considered expenses, but if this depletion is not offset by the organization's obtaining any return or revenue, it is considered a loss (Muhammad et al., 1993: p. 83).

Fourth: - Management of processing chain costs

Cost control is one of the key factors in ensuring financial efficiency. Although the calculation formula is simple, the financial result is actually a difficult value to determine. Correctly measuring financial performance will generate more difficulties, especially in a dynamically changing business environment. Given the different dimensions between companies and organizations, collecting accurate and appropriate cost information is a key element of the management process. More and more managers realize that efficiency is a source of competitive advantage and are working hard to improve and develop analytical methods, cost management and processes. An area where significant cost savings can be achieved is the supply chain.

Cost reduction is one of the most frequently cited goals in supply chain management. In addition, the drive to reduce costs forces companies to pay more attention to their relationships with other players in the supply chain so that both suppliers and customers can increase their competitiveness and profitability. In response to these facts, the literature on this topic lists specific concepts of cost management within the supply chain, as shown in Table (1).Source, 2013:205)

Table (1) Concepts of supply chain cost management.

Term	CHARACTERISTICS
Supply Chain Cost	Three levels of costs should be analyzed: 1. Direct costs of activities. 2. All costs in the supply chain are calculated based on activities and transactions. 3. Costs associated with key partners need to be controlled.
Proactive cost management	Proactive cost management is a proactive, market-oriented system that uses specific techniques to coordinate activities.
Agile Management Accounting	Link strategic and operational levels to understand customers and processes, thereby enhancing customer value.
Inter-organizational cost management	Supplier and customer cost management is implemented in coordinated programs to reduce costs during product design and manufacturing.
Institutional control	For later functional and organizational cost management. When applying cost management in the process chain, important functional relationships are very important.

Source: Surowiec, Anna" Costing Methods for Supply Chain Management"1st Annual International Interdisciplinary Conference, AIIC 2013, 24-26 April, Azores, Portugal.PP 205.

Fifth: - Management of the common cost in the supply chain

Shared cost management, such as the costs of the main components required for the delivery of the final product purchased or manufactured outside the framework of the business entity, between the business entity, the buyer and the processor, can provide knowledge and management contributions of transactions and activities between the participants. The goal is to diagnose opportunities and use cases that contribute to the reduction of shared costs. Economic entities with a high level of internal cost management can use their skills and experience to carry out activities that play an important role in joint interaction, which helps to improve their cost management, improve the level and efficiency of planning processes, and improve control capabilities. To maximize the benefits of all participants in the processing chain. To adopt shared cost management throughout the supply chain, some requirements must be met:-

1- Setting specific work goals to reduce the costs of processors.

2- Collaboration between suppliers and customers to investigate and diagnose opportunities for cost reduction.

3- Taking into account the profitability of suppliers when negotiating purchase prices.

4- Ensuring effective collaboration between suppliers, distribution channels and customers.

Close cooperation between economic entities is not limited to the development of relations between the participants in the processing chain, but also serves to coordinate administrative controls in order to provide adequate support for the planning, implementation, measurement and evaluation of all activities. Joint activities between business units make it possible to establish and maintain long-term cooperation, which can, in principle, be reflected in the exchange of information between the information systems of manufacturers, processors and other partners in the processing chain. (Al-Saffar and Obaid, 2016: 228).

Sixth: - Costs associated with processing chains

Managing inventory to increase net profit requires businesses to effectively manage costs, which are divided into the following five categories (Adebisi & Rafiu, 2013: 82):

1- Procurement costs – the costs of procuring goods from suppliers, including inbound freight. These costs typically represent the largest category of goods for sale, and discounts for different order sizes and supplier credit terms affect procurement costs.
2. Order costs – include the costs of preparing and issuing orders, receiving and checking items included in orders, and checking received invoices, orders, and shipping documents for payment. Ordering costs include the costs of obtaining purchase approvals and other special preparation costs.
3- Transportation costs – the costs incurred to maintain inventory of goods for sale. Transportation costs include the opportunity cost of investment associated with inventory and costs associated with storage, such as: B. room rental, insurance, obsolescence, damage, and loss.
4- Warehousing costs – the costs incurred when materials for large customer orders are depleted from the company's warehouses and procedures must be quickly updated to meet this requirement or the costs of not fulfilling deliveries. Companies can respond to inventory levels by expediting orders from suppliers. However, this can be expensive due to the additional ordering costs and all associated transportation costs.
5- Quality costs – costs incurred when the quality and characteristics of a product or service do not meet customer specifications. There are four types of quality costs: prevention costs, assessment costs, internal failure costs, and external failure costs...
The third topic: - The practical aspect

Data and results analysis

This section ensures that the balance used is reliable and stable in measuring the study samples. In addition, the availability of the variables for the applied field study is checked through statistical descriptions, and then the influence and degree of explanation of the independent variables on the dependent variables are determined..
First: - Coding variables and dimensions of research
This section codes the research variables and dimensions and determines the number of paragraphs for each dimension in order to facilitate analysis in the SPSS software package. The process is as follows:

Table (2) Coding and dimensions of research variables

Variable	Dimension	Number of paragraphs	Dimension Code
Toyota Corona	–	4	COR
Processing Chains	C. Preparation	4	PRCH
	C. Purchasing	4	PRE
	c. Production	4	PUR
	c. Transportation	4	PRO
	C. Storage	4	Tran

Source: Prepared by researchers based on the literature.

Second: - Method of distribution and retrieval of the questionnaire

The researchers distributed (110) questionnaires to achieve the research requirements. (103) questionnaires were retrieved and after examination, it was found that (100) questionnaires were valid for analysis. The questionnaires were distributed to a number of workers in the Wasit textile and sewing factory for the period from 28/3/2024 to 28/3/2024. This period included the distribution of the questionnaire. The confusion of some of its paragraphs was clarified based on personal interviews of specific and random samples of the total sample. The following table shows the details of that process:

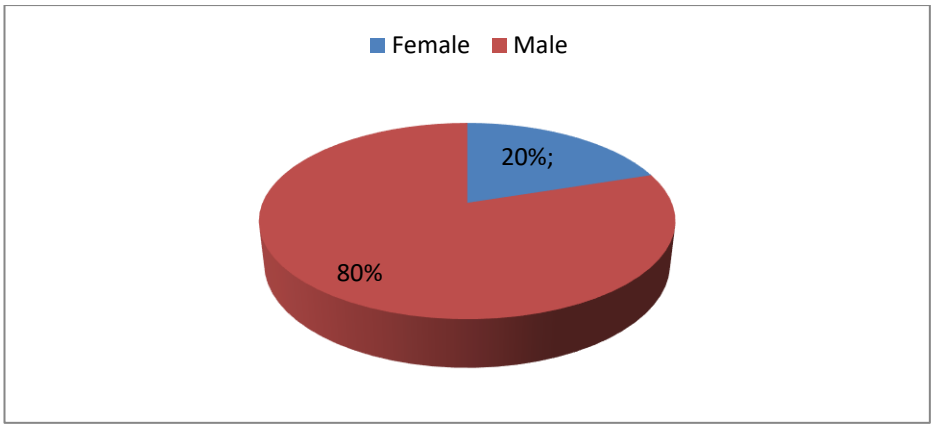
Table (3) Questionnaire distribution and retrieval

Questionnaire	Number	Percentage
Distributed Questionnaires	110	100%
Retrieved Questionnaire	103	93.6%
Unrecovered Questionnaire	7	6.4%
The questionnaire is valid for analysis	100	90.9%
The questionnaire is not valid for analysis	3	2.7%

Source: - Preparation of the two researchers based on the distribution of the questionnaire.

Third: - Demographic information of respondents

The graphics below show the demographic information of the respondents (gender), as it appears in the table that the number of males reached (80) individuals while females (20) as shown in the graph below:



Graphic (1) Demographic information (gender)

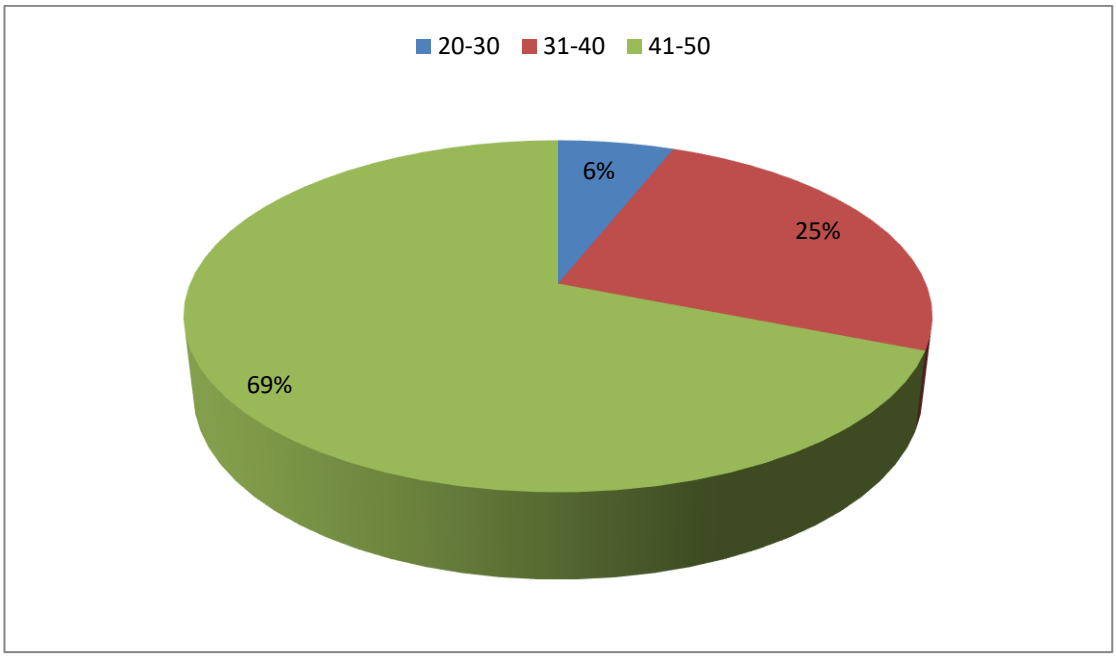
Source: - Two researchers prepared the results based on the SPSS program.

Table (4)

Gender					
		frequency	Percent	Valid Percent	Cumulative Percent
valid	Female	20	20.0	20.0	20.0
	Male	80	80.0	80.0	100.0
	Total	100	100.0	100.0	

Source: - SPSS Outputs

The age factor of the respondents ranged between (50-41), while the respondents were within Lower age group (30-20) as shown in the drawing below:



Graphic (2) Demographic information (age)

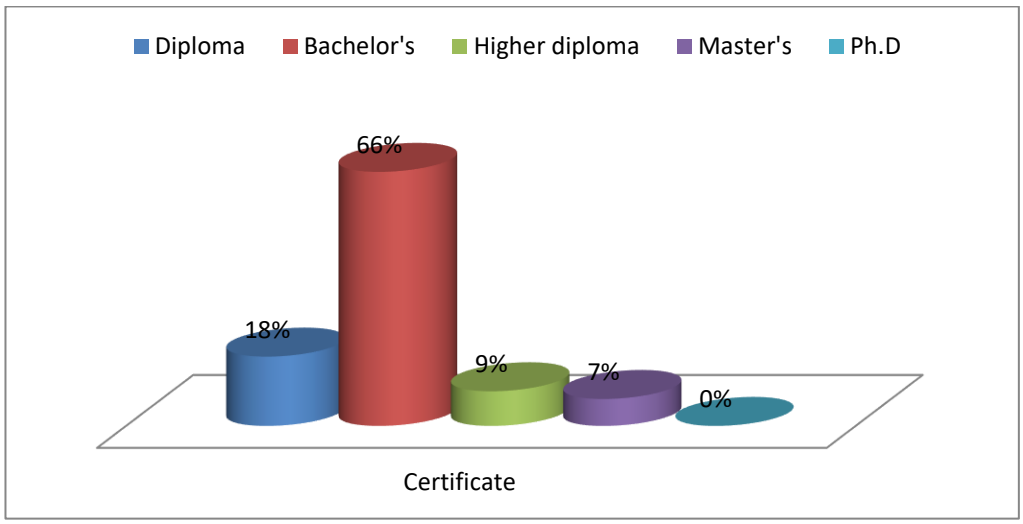
Source: - Two researchers prepared the results based on the SPSS program.

Table (5)

Building Age					
		frequency	Percent	Valid Percent	Cumulative Percent
valid	20-30	6	6.0	6.0	6.0
	31-40	25	25.0	25.0	31.0
	41-50	69	69	69	100.0
	Total	100	100.0	100.0	

Source: - SPSS Outputs

As for educational attainment, it was found that the holders of a bachelor's degree are the most (66) individuals, while the holders of a master's degree are the least (7) individuals, as shown in the chart below:



Graphic (3) Demographic information (academic achievement)

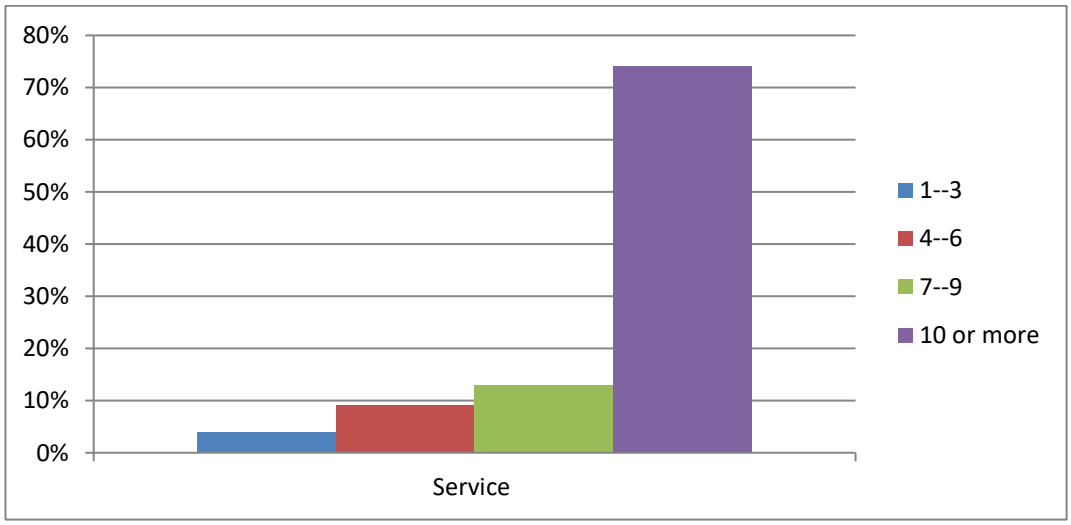
Source: - Two researchers prepared it based on the results of SPSS program.

Table (6)

Certification					
		frequency	Percent	Valid Percent	Cumulative Percent
valid	Diploma	18	18.0	18.0	18.0
	Bachelors	66	66.0	66.0	84
	High Diploma	9	9.0	9.0	93
	Master's degree	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Source: - SPSS Outputs

The years of service for those who served them were less than fifteen years, the largest percentage of workers in education, as their number reached (10) individuals, as shown in the drawing below:



Graphic (4) Demographic information (years of service)

Source: - Two researchers prepared the results based on the SPSS program.

Table (7)

Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1–3	4	4.0	4.0	4.0
	4–6	9	9.0	9.0	13.0
	7 September	13	13.0	13.0	26.0
	10 +	74	74.0	74.0	100.0
	Total	100	100.0	100.0	

Source: - SPSS Outputs

It turns out that the respondents, based on the results of the analysis of their demographic factors, are experts and specialists who can understand the purpose of these questions they answered, and have sufficient ability to answer them accurately, and thus their answers will contribute to identifying the research variables within the research sample organization

Fourth: - Testing the normal distribution of data

This step is necessary and important to determine the distribution of the questionnaire data. Are they naturally distributed or abnormally distributed? The main goal of this test is to determine the appropriate statistics for the analysis. When the collected data follows a normal distribution, the statistics (parametric) are the most suitable and best for the statistical analysis process. If the data does not follow a normal distribution, then the statistics (non-parametric) are the most appropriate and best. For this reason, in this study, the Kolmogorov-Smirnov test was applied to prove the validity of the normal distribution of the questionnaire data collected from the community according to each research variable. From the test statistical analysis shown in the table (8) below, the significance value Sig (2-tailed) is (.009c, d), which is less than (5%), which is the criterion for determining the acceptability of the results. Therefore, we accept the alternative hypothesis (H_1) and reject the null hypothesis (H_0) assumed when the data follows a normal distribution. This test allows two researchers to use non-parametric statistics to test the validity of the normal distribution of the questionnaire data collected from the community according to each research variable..

Table (8)

One-Sample Kolmogorov-Smirnov Test			
		COR	PRCH
N		100	100
Normal Parameters [a,b]	Mean	4.3200	4.1500
	Std. Deviation	.46748	.36397
Most Extreme Differences	Absolute	173	.105
	Positive	173	.105
	Negative.	127	−.075
Test Statistic		173	.105
Asymp. Sig. (2−tailed)		.000c	.009c
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			

Source: - SPSS Outputs

Fifth: - Testing the stability and internal consistency of the measurement tool

This section tests stability and internal consistency. They are the main pillars on which the measurement instrument is based and are highly valued so that the research findings are highly trusted and recognized. When the answers to a particular scale are consistent and homogeneous, the extent to which individual differences can be measured, and when the scale measures the purpose for which it was created, the scale is considered to be fixed. The study adopted the most common method, namely (Cronbach Alpha) to check the stability and internal consistency of the measurement instrument, which is considered to be a recognized value at the behavioral research level if it exceeds (70%) (Tavakol & Dennick, 2011:54). The researcher also relies on the construct validity coefficient to determine the validity The measurement tool measures the research variables based on the responses of sample members. (Cronbach Alpha), and the value of the correlation coefficient is passed. From the table (9) below, we can see that the Cronbach α coefficient value of the main research variable (COVID-19) is (86.7%), and the Cronbach α coefficient value of the dependent research variable (processing chain) and its dimensions is (90.4%), because these values are acceptable and recognized, and have excellent stability in descriptive research, because they are high values compared to the standard Cronbach α values. We noticed that the construct validity coefficient values in the sample responses are very good and high. Therefore, the research instrument and its measures are accurate, stable, and honest, and have the validity of the final application..

Table 9

Variables	Dimension or Type	At the dimension level	At the variable level	Nephrology
Toyota Corona			86.7%	90.8%
Processing Chains	C. Preparation	86.5%	90.4%	
	C. Purchasing	89.2%		
	c. Production	84.9%		
	c. Transportation	91.3%		
	C. Storage	92.5%		

Source: - Preparing the two researchers based on the results of the SPSS program.

The above table represents the internal reliability of the variables (Corona pandemic) and the supply chain and its dimensions) by (90.8%).

Sixth: - Statistical description

Table (10) shows the classification of the statistical description categories. The categories are determined by finding the length of the range (4 = 1-5) and then dividing that range by the number of categories (5) (0.80 = 5/4). (0.80) is then added to the minimum share (1) or subtracted from the upper share (5).and the categories are as follows (Dewberry, 2004: 15): , Table (10) indicates the dimensions of the variables (Corona pandemic, processing chain) that were well available in the Wasit textile and sewing laboratory, as the average for all dimensions (high hypothesis) except for the Corona pandemic, which was very high, and the levels of standard deviation were close to each other as well as the variation of the variables, which indicates the availability of understanding by the respondents

(employees of Wasit textile and sewing laboratory) of the research variables that were tested , and the results indicate that there are very high rates of the Corona pandemic as well as a high level of processing chains.

Table (10) Classification of statistical description categories

Variable / Dimension	Average	Standard Deviation	Answer level after	Arrange Dimensions
Toyota Corona	**4.3200**	**.46748**	**steep, taunt**	**Firstly**
C. Preparation	4.1950	.47617	**High**	**1**
C. Purchasing	4.0850	.51027	**High**	**5**
c. Production	4.1225	.49683	**High**	**4**
c. Transportation	4.1825	.51229	**High**	**2**
C. Storage	4.1650	.54381	**High**	**3**
Processing Chains	**4.1500**	**.36397**	**High**	**Second**

Source: - Preparing the two researchers based on the results of the SPSS program.

Table (11) Dimensions of variables

Descriptive Statistics					
	N	Minimum	Maximum	Mean	STD Deviation
COR	100	3.00	5.00	4.3200	.46748
PRCH	100	3.25	5.00	4.1500	.36397
PRE	100	3.00	5.00	4.1950	.47617
PUR	100	3.00	5.00	4.0850	.51027
PRO	100	3.00	5.00	4.1225	.49683
Tran	100	2.50	5.00	4.1825	.51229
Stor	100	2.75	5.00	4.1650	.54381
Valid N (listwise)	100				

Source: - SPSS Outputs

Seventh: - Testing the research hypothesis

In testing the hypotheses, the two researchers relied on the Pearson method for the purpose of determining the level of correlation between the research variables.

1. Testing the hypotheses of the correlation model: In this paragraph, the The aim was to study the correlation coefficients between the variables using the Pearson statistical test. The first main hypothesis was tested, namely the correlation between the independent variable (COVID-19 pandemic) and the dependent variable (processing chain). Table (12) shows the simple correlation coefficient (Pearson) matrix between these variables. The strength of the correlation coefficient was assessed using the following rules (Ann, 2005), for each institution:

1. Very weak: when the value of the correlation coefficient is less than 0.20
2. Weak: the correlation coefficient is between 0.20 and 0.39
3. Moderate: the correlation coefficient is between 0.40 and 0.59
4. Strong: when the value of the correlation coefficient is between 0.60 and 0.79

5. Very strong: when the correlation coefficient value is above 0.80

Table (12) shows that the correlation coefficient between the independent variable (COVID-19 pandemic) and the dependent variable (processing chain) is between (0.20 and 0.39) in addition to the positive sign, which indicates that there is a weak and direct relationship between these variables. There is a correlation. which achieves the hypothesis of the correlation relations between the variables. There is a significant correlation between the Corona pandemic and its impact on supply chains and its impact on associated costs.

Table (12) Pearson correlation coefficient matrix for the relationship between the study variables

Correlations			
		COR	PRCH
COR	Pearson Correlation	1	378·
	Sig. (2-tailed)		.000
	N	100	100
PRCH	Pearson Correlation	378·	1
	Sig. (2-tailed)	.000	
	N	100	100
. Correlation is significant at the 0.01 level (2-tailed).			

Source: SPSS V.24 Outputs

Whereas, the relationship between the Corona pandemic variable and the dimensions of the processing chains is positive, as it appears from Table (13) that the correlation coefficient between the independent variable (Corona pandemic) and the dependent variable (processing chains (after purchase costs)) is (.319* *) in addition to its positive reference, which indicates a weak and direct correlation relationship, as well as the correlation coefficient between the independent variable (Corona pandemic) and the dependent variable (processing chains (after production costs)) is (.273* *) in addition to its positive reference, which indicates a weak and direct correlation relationship between the independent variable (Corona pandemic) and the dependent variable (processing chains (after transportation costs)) is (.247 * *) in addition to its positive reference, which indicates a weak and direct correlation between the independent variable (Corona pandemic) and the dependent variable (processing chains (after storage costs)) is (.188 * *), which indicates a very weak and direct correlation, as it indicates a correlation between the follow-up relationship with the independent variable, which achieves the hypothesis of the correlation between the variables. As shown in the table below:

Table (13) Correlation between the main and sub variables

Correlations								
		COR	PRCH	PRE	PUR	PRO	Tran	Stor
COR	Pearson Correlation	1	378·	34 1	® 319	273	247	188
	Sig. (2-tailed)		.000	.001	.001	(0.006)	.013	.062
	N	100	100	100	100	100	100	100
PRCH	Pearson Correlation	378·	1	)574 (	.678**	.764**	.750**	.803**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	100	100	100	100	100	100	100
PRE	Pearson Correlation	34 1	)574 (	1	[258]	389	236	226
	Sig. (2-tailed)	.001	.000		.009	.000	.018	.024
	N	100	100	100	100	100	100	100
PUR	Pearson Correlation	® 319	.678**	[258]	1	439	.305**	418 m²
	Sig. (2-tailed)	.001	.000	.009		.000	.002	.000

	N	100	100	100	100	100	100	100
PRO	Pearson Correlation	273	.764**	389	439	1	0.422	.492*
	Sig. (2-tailed)	(0.006)	.000	.000	.000		.000	.000
	N	100	100	100	100	100	100	100
Tran	Pearson Correlation	247	.750**	236	.305**	0.422	1	inco(688)
	Sig. (2-tailed)	.013	.000	.018	.002	.000		.000
	N	100	100	100	100	100	100	100
Stor	Pearson Correlation	188	.803**	226	418 m²	.492*	inco(688)	1
	Sig. (2-tailed)	.062	.000	.024	.000	.000	.000	
	N	100	100	100	100	100	100	100
. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed)**.								

Source: SPSS V.24 Outputs

2. Testing the hypotheses of the impact model

Table (14)

Descriptive Statistics			
	Mean	STD Deviation	N
PRCH	4.1500	.36397	100
COR	4.3200	.46748	100

Source: SPSS V.24 Outputs

Table (14) shows the descriptive statistics (sample size 100, and arithmetic averages, as they follow the degree of Likert quintet - standard deviations) of the independent and dependent variables that were entered in the regression model.

Table (15)

Correlations			
		PRCH	COR
Pearson Correlation	PRCH	1.000	378.
	COR	378.	1.000
Sig. (1-tailed)	PRCH	.	.000
	COR	.000	.
N	PRCH	100	100
	COR	100	100

Source: SPSS V.24 Outputs

The above table shows the correlation matrix between the variables of the regression model, as the correlation coefficient between the supply chains and the Corona pandemic was at a value of 0.378 in statistical terms smaller than 0.01 with a value of 0.000, which means that there is a positive direct relationship.

Table (16) Variables Entered/Removeda

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	of Disbursement
1	[b]	.	Enter
a. Dependent Variable: PRCH			
b. All requested variables entered.			

Source: SPSS V.24 Outputs

Table (16) shows the names of the variables that were entered in the regression equation (processing chains) as a dependent variable, (the Corona pandemic) as an independent variable, and the analysis did not exclude any variable. The method used in the model was the standard regression method.

Table (17)

Model[Summaryb]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.378a	143	134	.33861
a. Predictors: (Constant), Cor				
b. Dependent Variable: PRCH				

Source: SPSS V.24 Outputs

Table (17) shows the Pearson correlation coefficient between the dependent variable (supply chains) and the independent variable (Corona pandemic), where the value of (0.378) was the value of the coefficient of determination (0,143) and the value of the modified coefficient of determination (0,134), meaning that the independent variable explains 13% of the variation in supply chains.

Table (18)

ANOVAa						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	878/1	1	878/1	383	.000b
	Residual	237	98	115		
	Total	13 and 115	99			
a. Dependent Variable: PRCH						
b. Predictors: (Constant), Corr						

Source: SPSS V.24 Outputs

Table (18) shows the results of the analysis of Enova test for regression significance. We note that the value of Sig.) is equal to (0.000) which is less than (0.01). Therefore, we reject the null hypothesis and accept the alternative hypothesis which states that the regression is ethical and therefore the

independent variable (COVID-19 pandemic) has an effect on the dependent variable (Treatment Chain) and therefore we replace the dependent variable with the independent variable which the variable can predict.

Table (19)

Coefficientsa									
Model		Unstandardized Coefficients		standardized Coefficients	o	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	877	.316		096	.000			
	COR	295	073	378.	.048	.000	378.	378.	378.
a. Dependent Variable: PRCH									

Source: SPSS V.24 Outputs

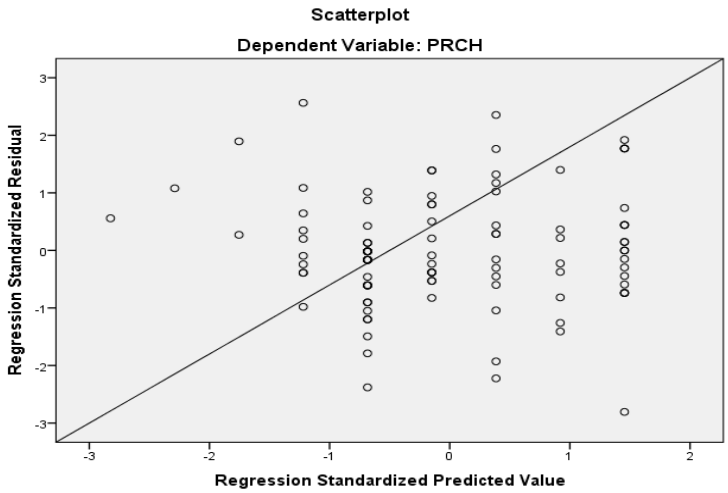
Table (20) shows the standardized and unstandardized regression coefficients, the values of the t-test and the standard errors and test probabilities as well as the values of the inflation and tolerance coefficients.

This shows that there is no linear multiplicity problem between the variables since the inflation coefficient is less than 3.

Table (20)

Residuals Statisticsa					
	Minimum	Maximum	Mean	STD Deviation	N
Predicted Value	3	4	4.1500	13775	100
Residual	−.95037	.86796	00000	.33690	100
Std. Predicted Value	824	.455	.000	1.000	100
Std. Residual	.807	2.563	.000	995	100
a. Dependent Variable: PRCH					

Table (20) shows the distribution of the rest



Graphic (5)

Source: SPSS V.24 Outputs

Figure (5) shows the moderation of the distribution of the remainders and the collection of data about the straight line. Therefore, the remainders follow the normal distribution, which is a condition for the validity of the regression analysis.

The fourth topic: - Conclusions and recommendations

First: - Conclusions

1. The Corona pandemic has affected production costs in Iraqi economic units.

There is a significant correlation between the Corona pandemic and its impact on supply chains and its impact on associated costs.

There is a significant impact between the Corona pandemic and its impact on supply chains and its impact on the associated costs

Second, Recommendations:

1. Economic units should assess their current situation and develop solutions to the impact of the Corona pandemic to confront such crises that may occur in the future.
2. Find new suppliers and try to diversify their presence, whether outside or inside Iraq, in order to reduce the risks of processing and rely on more than one source of supply .
3. Activating risk management in economic units and discussing the expected crises periodically in management meetings.
4. Relying on suppliers whose geographical locations are closer to the economic units so that the materials can be transported by air and land transport. In the event that one of the transport methods is stopped, the other can be relied on.

References

1. "Comprehensive Health Awareness Guide", (This guide was compiled from the who website, first edition) , 5/3/2020.
2. Sabih,Imad Al-Saffar, Mohammed, Alaa Obaid , " The Impact of Cost Management in Enhancing the Processing Chain" , Research, Journal of Management and Economics ,Al-Mustansiriya University, 2016.
3. Assaf , Mohammed Ahmed Hussein,“ The Impact of Supply Chain Capabilities on Achieving Competitive Advantage (Case Study: Kawar Group of Companies in Jordan)” , 2015 .
4. Rifai, Mamdouh Abdulaziz Mohammed, "TheImpact of the Application of Electronic Supply Chains on the Phenomenon of Reverse Stock Withdrawal in the Light of Sharing Demand Information, An Applied Study on Durable Goods" ,2004.
5. Khansal, Al-Saeed , " The Impact of Supply Chain Management on the Competitiveness of the Institution , Case Study of Riyad Al-Fateh Cables and Industrial Electricity Company",Memorandum submitted as part of the requirements for obtaining an academic master's degree, Mohamed Bou Diyaf University in Messila , Algeria, 2020 .
6. Aws, Ahmed ,“The Impact of Supply Chain Dependence on Enhancing Competitiveness: A Field Study in Tourism Facilities in the City of Damascus and its Countryside,” Master Thesis , Damascus University, Faculty of Economics, Syria, 2017.

7. Al-Zaazou, Omar Khattab," Obstacles to Applying Sustainable Development to Supply Chain Management in Construction Projects in Syria" , Master Thesis , Damascus University Faculty of Civil Engineering, Department of Engineering Management and Construction , 2015.
8. Al-Batanouni, Alaa Mohammed ,"The Impact of Linking and Integrating Supply Chain Management Practices and Strategic Cost Management on Supporting the Competitiveness of Industrial Businesses," Journal of Accounting and Auditing.
9. Eid, Salah Bassiouni, Fleih, Abdel Moneim , Daou, Saeed Yahya , "Cost Accounting" , Book, First Edition, 2016- 2017.
10. Dr. Zaki , Hanafi Eid Mohammed, Yahya, Saeed, Ibrahim , Adel Azab, " The Basics of Cost Accounting" , book, Cairo : Al-Dar Al-Arabiya, 1993.

Source: Surowiec, Anna " Costing Methods for Supply Chain Management" 1st Annual International Interdisciplinary Conference, AIIC 2013, 24-26 April, Azores, Portugal.PP 205.
12 Adebisi,Nafisat Toyosi & Rafiu Akinpelu Olaore," Accounting, Purchasing and Supply Chain Management Interface" IOSR Journal of Business and Management. Volume 11, Issue 2 (May. Jun 2013).
13. dewberry,c, "statistical methods for organizational research: theory and practice", first published, published in the taylor& franci, 2004.
14. tavakol,Mohsen,dennick,reg,"making sense of cronbachs alpha", international journal of medical education, 2011.