The impact of logistics management on improving the overall performance of seaports through the role of an information technology intermediary

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Abstract

The current study aims to reveal the impact of logistics management with its dimensions (maritime transport and maritime storage) in information technology with its dimensions (human resources, devices and equipment) to improve the overall performance of seaports. This study was applied on two companies (General Company for Ports of Iraq and General Company for Maritime Transport) Method reached 327 which is selected by using (simple random samples).The sample analyzed was depended through the use of a set of statistical methods available in the programs (**SPSS-V.26 & AMOS-V.26)**. The results showed that there is a positive impact of logistics management and its dimensions in information technology. Scientific outputs where the results of this study can be used in the development of methods and capabilities of the General Company for Iraqi Ports, which will reflect positively on information technology, so the General Company for Iraqi Ports must pay increasing attention to this field and achieve its goals and raise the general level.

Key word : Information Technology , Management Logistics, Improving the overall performance of seaports

Introduction:

The spread of information technology has led to technological, political and social change and transformation, and of course a major economic transformation. Information technology nowadays affects a lot in all businesses and therefore institutions must pay attention to information technology (yusuf, 2005: 315).

Ports are also considered one of the most important elements of the cultural and economic prosperity of the country, so business organizations whether service or productive must face the many and rapid changes and developments and try to continue them in the business environment and integration in the work of supply management. In order to make ports modern, it has become necessary to use advanced information technology that has a great importance and role in the integration of logistics management through the use of modern technologies that enable them to work towards achieving comprehensive and constantly evolving performance (MSARWAA, 5: 2019).

In the study (Palmer, 2020 : 8), Participants referred to companies which is the IT infrastructure is old and it doesn't keeping up modern developments of information technology that led to the inefficiency of their internal operations, so it is necessary to link all important management positions in companies All communication companies to contribute effectively to the postponement of the company's business policy (Basilaia-Namani, 2020: 105) and trying to provide comprehensive support to employees will promote social exchange, thus contributing to improving the efficiency and effectiveness of companies by improving overall performance

(Kurtessis, 2017: 1855).

The General Company for Iraqi Ports is one of the most important and oldest Iraqi companies, because it recognizes the importance of information technology in improving the overall performance of seaports and is able to keeping up the modern development of other global and neighboring ports.

1- Methodological Framework

1.1. The Research problem.

Many studies have confirmed that logistics management is a motivation for many researchers to conduct studies, as it recommended increasing research in this concept ,These studies are including (Muhammad Ali, 2017) (Al-Baghdadi, 2011).

Through the work of the researcher in the General Company for Ports of Iraq, it was found that there is a weakness in the application of logistics management concepts, because there is no support for this manegment for modern and diverse techniques in the field of information technology, especially that the researcher is informed through his visit to some countries. It was briefed on the importance of these technologies in speed and accuracy in the delivery of information, so it helps to reduce bottlenecks in the work of sea ports and in the present the services to customers efficiently and effectively and it leads to support the overall performance of ports and thus improves the performance of ports and prevents losses in the work of the General Company for Iraqi Ports.

(1) Ports are lack advanced information technology in order to provide different services of high quality.

(2) There are not available modern electronic systems for the flow of information between companies and the port.

(3) Ports does not work prepare a marine insurance policy to provide security and comfort to customers and raise the level

of quality of services to customers.

(4) Different processes within the organization are not managed using information technology.

Therefore, if the General Company for Iraqi Ports wants to improve and develop its performance for the purpose of occupying the position of Iraqi ports among international ports . Where the General Company for Iraqi Ports should spread the culture of information technology among creative methods and try to provide infrastructure for the technology of the crisis for that.

1.2. the Research Objectives

The result of study question to a set of objectives represented in the following:

1) Testing the effective relationship between the independent variable of logistics management and the dependent variable Improving the overall performance of seaports.

2) Testing the effective relationship between the intermediate variable for IT and the variable follow to Improve the overall performance of seaports.

1.3. the Research Importance

1. The importance of this study emerges by presenting a proposed model that studies the relationship between the three variables

2. Attention to one of the prominent problems in an important ssector such as the maritime sector, which is the General Company for Iraqi Ports and the General Company for Maritime Transport, where they provide important services to all neighboring countries and that any weakness in the performance of seaports causes problems in the work of the two companies and their relations with neighboring countries.

1.4. the Research Design

Due to the lack of the studies which are converse that the variables of this study combined and because of the lack of

information about the phenomenon or the problem and the ways that can be solve this problem. The study was designed to develop plans to collect the required information and analyze it in order to find hypotheses for it and then test the validity of these hypotheses , based on the time and search question, and put a framework to determine the relationships between variables used in this study (Cooper &Schindler,2014:125).

This study had adopted the exploratory method, which relies on collecting and analyzing data in order to interpret the results and then present a set of conclusions and recommendations in order to better understand the research problem (Zikmund et al., 2013 :55)

1.5. the Research population and sample

The study collection was represented by the General Company for Iraqi Ports and also the General Company for Maritime Transport, where the research sample was described mainly on the employees of the two mariners working in the General Company for Ports of Iraq as well as the General Company for Maritime Transport and from various maritime levels, and the focus was on the information technology department of the General Company for Ports of Iraq as a field of the study in order to improve the overall performance of Iraqi ports and in order to test hypotheses and achieve the objectives of the study, the statistical table of the author was used (krejcie and Morgan 1970: 608), as he defined the sample size as (327) as a minimum, which is proportional to the study population of (2234) employees.

1.6. Data collection methods

The researcher used a number of tools to obtain the necessary data and information to achieve the purpose of this research, both theoretical and field reaserch, as follows:

First: The theoretical aspect: The study focused on the

information related to the theoretical aspect on what was available in the previous literature related to the field of study of articles, Arabic books, theses and university theses, as well as the sources and information provided by the Internet related to the field of study

Second: the field aspect: The researcher used to cover the field aspect of the research questionnaire for the purpose of collecting data, as it included a number of questions that the respondent answers, and that of choosing specific alternatives, and the final questionnaire included (62) paragraphs, and the five scale (Likert) was depend on the measure of answer and reply of the reaserchers, which ranges on the following answers (completely don't agree, don't agree, neutral, agree, agree completely) and table (1) shows the study standards and sources that have been Rely on them.

Sources	Paragraphs	Subvariables (dimensions)	Main variable
George Eve 2013 _ Alias 2019	5-1	Shipping	Logistics Management
	11-6	Marine Storage	
Sherif and Odeh 2016_ Alotaibi 2010	28-24	Human Resources	It
	33-29	Devices & Equipment	
Venus 2015 _ Sherihan 2019	48-44	General services provided to ships	Improve the overall performance of seaports
	52-49	Container Handling Yards	

Source : Prepare by the research

1.7. Research Model

The hypothetical scheme of the research was prepared , where the relationship between the two variables and their dimensions was clarified, on the basis of which the research problem was formulated as shown in the following figure:

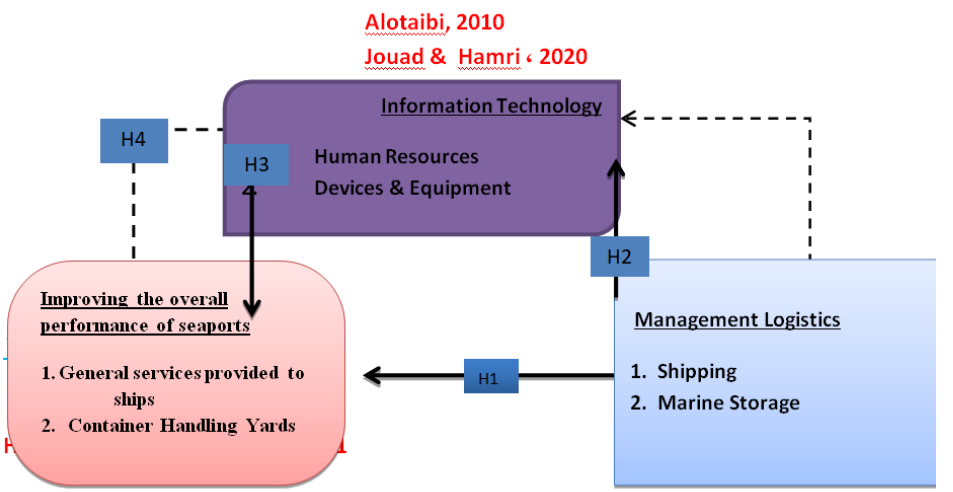

Figure (1) Hypothetical model

Source: Prepared by the researcher based on the sources above

1.8. The Research Hypotheses

Based on the research in Figure (1), the main hypothesis can be formulated as follows:

1_ There is a direct impact relationship between logistics management and improving the overall performance of seaports the first main hypothesis.

H1A_ There is a direct impact relationship statistically significant between maritime transport and improving the overall performance of seaports.

H1B_ There is a direct impact relationship statistically significant between marine storage and comprehensive

performance improving for seaports.

2_ The relationship between logistics management and the second major hypothesis information technology.

H2A_There is a positive direct impact relationship with statistical significance between the dimensions of logistics management and information technology. It branches from this second main hypothesis the following sub-hypotheses:

H2B_There is a positive direct impact relationship with statistical significance between marine storage and information technology.

H2C_There is a positive direct impact relationship with statistical significance between marine storage and information technology.

3- The relationship between information technology and improving the comprehensive performance of seaports the third major hypothesis.

H3A_There is a positive direct impact relationship with statistical significance between the dimensions of information technology and improving the comprehensive performance of seaports. It branches from the third main hypothesis the following:

H3B_There is a positively direct impact significantly significant between human resources and improving the comprehensive performance of ports.

H3C_There is a positive direct impact relationship with and statistical significance between devices and equipment and improving the comprehensive performance of seaports.

1.9. Statistical Methods Used in Research

The researcher used a number of ready-made statistical techniques in entering and analyzing data on research variables and testing their hypotheses, represented in the program **(AMOS. V.26 & SPSS.V.26)** as the following tools:

1. Cronbach's and Item-Total-Correlation
2. Skewness and Kurtosis
3. Means
4. Pearson's Correlation
5. Regression Analysis
6. Standard deviation

2- Theoretical Framework

2.1. The concept of logistics management

The origin of the word goes back to the ancient Greek language and comes from the word (logos) and means the ratio of calculation and the reason for the speech has moved the use of the word from the need for the army to supply supplies from their bases and sites to the economic field has defined the Oxford Dictionary in English as a branch of military science specializes in the management and preservation of materials and when resources are transferred Britain's loss in the American War of Independence and the loss of Erwin Rommel in World War II, largely related to logistical failure while historical leaders Hannibal Barca, Alexander of Macedonia is one of the logistical geniuses (Khader, 2015: 83)

The concept of logistics originated in the beginning of the military has begun to use this concept of logistics in the French armies in 1905 for the purpose of securing the arrival of ammunition and food at the right time and the right place and in the best way, and this term was used during World War II so that the demand for weapons was great as it became one of the factors of victory of the Allied armies and after World War II strongly appeared the term logistics, especially for the US army and became an official word in all armies (Lasheen, 2007: 32)

It can be said that logistics or supply has existed in our lives

since ancient times and as the concept of logistics is used to the method of managing armies, as well as at the present time the method of logistics has extended to managing the flow of goods and services needed by the facility and the information system necessary to achieve this continuous flow and specialized in economic establishments where the time gap and the spatial gap between raw materials and production on the one hand and between production and consumption on the other hand and through logistics management can overcome differences Time and place, supply of goods and provision of services in an efficient manner (Lasheen, 2007: 34)

2.2. Dimensions of logistics management

Writers and researchers presented many studies related to logistics management, which are characterized by many advantages that can provide a great addition to organizations and companies (purnomo, 2019:15) and through the literature that dealt with the subject of logistics management, the researchers concluded that there is a quasi-agreement between researchers and writers to determine the main dimensions of logistics management, without which the logistics management is not complete, but in this research the researcher touched on the dimensions of maritime logistics management and explained its dimensions in detail:

2.2.1. Shipping

Maritime transport is one of the important means that are indispensable in any economic activity, without actual access to resources and markets, we cannot talk about the economic development of the state (Al-Amin, 2016: 67) **Marshal** defined transport as the movement of individuals and things from one place to another and explained that it represents one of the important activities at every stage of civilizational development maritime transport is defined as an economic

industry based on a precise technological system determined by the level of the transport products industry, the level of operation of these products and how to manage them to achieve the greatest benefit for other economic sectors (Al-Sayed, 2004: 24).

2.2.2. Marine Storage

Storage is one of the most vital functions of many institutions as it has a significant direct impact on production processes as it provides production requirements of raw materials, materials, spare parts or equipment and this function has an impact on marketing activity because storage specializes in receiving and maintaining final goods until needed (El Madawy, 2002: 94) The storage activity is logistics to use the logistical information necessary for storage operations within ports in an effective manner to improve the quality of storage activities and raise the level of service (Pazirandeh, 2013: 889) .

3.2. The concept of information technology

Information technology with its advanced tools is of great importance, since the industrial revolution nothing has affected human life, as information technology has affected the modern time, which has become indispensable in modern life (Wen et al, 2011: 94), as this term emerged significantly in the early forties with the beginning of the development of the electronic computer and the spread of technology of the digital world (zaqout et al, 2018: 5) where this technology unified the boundaries of the distances between the world (Shamsan, 2015: 2) researchers differed about defining the concept of information technology, some of them defined it in a simple sense and the other in the complex sense and the word information technology as a term has a lot of confusion being Greek origin of the word (Techno) means machine and

(Logos) Science, if it is the practical application of scientific inventions and its characteristics that it is an independent science has its origins, theories and objectives and it seeks to know the lives of people and solve problems has been defined by those interested in the theory of the organization as (science and art) used in the production and distribution of goods and services as it is a science because it focuses on methods, research, scientific matters and art because it experiences and technical skills (jalagat & AL_ Habsi, 2017: 5113) and knew many definitions where Daft (2004: 285) is the power that helps organizations maintain their competitive priorities and face external international competition, if the requirements of customers are met with quality, speed and appropriate cost.

4.2. IT Dimensions

Attention to the elements of information technology helps to link administrative functions with each other, eliminate duplication and try to reduce errors and improve decision-making capabilities, which leads to higher efficiency (Al-Hawary et al, 2017: 146) and its definition: (FarhadNejadirani,2011:226) is a set of physical and mental equipment and tools that are used in information planning, analysis and application in decision-making and management. Electronic devices such as computers are physical equipment and tools, either their planning or conditions of application are mental tools and can display the most important dimensions (IT), which are as follows:

1.4.2. Human Resources

Business organizations are experiencing contemporary updates, represented by the explosion of technological innovation and that this new quality needs modern methods in human resources management, foremost of which is the establishment of a base of concepts about the new role of

human resources management and dealing with modern technology to build its contemporary strategies and a statement of the principles and rules of its practice (Hassan, 2009: 3) and defined by the American Association for Human Resources as follows: It is the art of attracting, attracting and retaining competent forces in order to achieve organizational goals with maximum efficiency and economy (Warner, 2011, 21).

2.4.2. Devices & Equipment

Information technology is used in the world of maritime transport in two directions, the first is in ships in the seas, oceans, channels between ships and management of shipping companies (Masoud, 2011: 43) Devices and equipment are defined as tangible devices in the system used in the entry, processing and output of data and information (Muslim, 2014: 130).

5.2. Improving the overall performance of seaports

Improving and upgrading the overall performance of employee's leads to raising and improving the overall performance of companies (Christen et al. 2006: 144). Companies need high-performing employees in order to achieve their goals, and to deliver products /or services in which they specialize, thus achieving a competitive advantage. On the other hand, performance is also very important for the employee, whose completion of tasks and performance at a high level can be a source of satisfaction with feelings of mastery and pride, sometimes Low performance and failure to achieve goals are seen as unsatisfactory or even as a failure of a person (Muchhal, 2014: 2-3).

Dimensions of improving the overall performance of seaports

1.5.2. General services provided to ships

A port is a coastal facility consisting of one or more harbors, established on the coasts or shores of seas, oceans, rivers, or lakes, in which the unloading and loading of ships with goods or passengers is carried out.

Cranes, Piers and Warehouses for Ships Wayback machine , 2021 :18) (

Ports in general provide many services, including:

1. Guidance
2. Guiding boats
3. Anchorage and anchoring aids
4. Cargo Handling
5. Use of lane and navigation aids

2.5.2. Container Handling Yards

Maritime transport has suffered from many problems for a long time, including the problems that carriers were incurring in shipping and unloading goods, which is one of the costly operations for the logistics process, as well as the long time it takes for these operations. In addition to the high cost of packaging goods because the completeness and adequacy of packaging is one of the inevitable things to implement the transport process. In order to the search for a solution to all these problems in the last century ,the containers appeared in order to facilitate their storage And transporting them from one vehicle to another so today they fall commercially one of the best units for the assembly of goods for the purpose of facilitating their transportation while ensuring their protection as much as possible from different damages (Vincent, 2006:

19). The containers have known from the sixties a very remarkable development after the maritime transport of containers is carried out on board traditional ships .which weren't suitable for such a purpose became in the years 1965_1966 on specialized ships, where the American shipbuilders took the initiative, they were built and operation of ships with special specifications called the container carrier (Nesrine 2015: 54). In the second half of the twentieth century, the international criticism of goods witnessed many developments as a result of the occurrence of known as container transport and the start of the application of the method of containing goods, and containers became the best possible means of international and maritime transport in particular. Many of containers collected in one container that can be transported by land, air and sea in Long transport process without the need to open the container after closing it from the point of dispatch until it reaches the point of arrival (Mokhtar and 2013: 6). We can define the container yard as the place where containers are received and stored temporarily until they are re-shipped from the side of the berth or from the gate side. The container terminal can be divided into several yards according to the types of containers stored in it or as well as according to its destination and the container yard is planned very accurately it is also organized. Operating spaces and roads are left for the passage of trucks and maneuvering mechanisms, and the ratio of the operating area to the ratio of the actual operating area of the yard varies according to the type of mechanisms used in the yard as well, the heights of the arrangement of containers according to the type of mechanism used in the yard The height of the arrangement of containers also varies depending on the type of mechanism used in the yard. **(Yongrok,et al .,2011:752)** .

Practical freamwork

3.1 Examination of the nature of the data

The nature of the examination of data is very important to determine the appropriate statistical tools. Very important statistical tools such as (descriptive statistics) are most appropriate when the data are distributed naturally (Field, 2009: 145) and the following tables show descriptive statistics.

Descriptive statistics for answers to the variable of maritime transport

The statistical indicators (arithmetic mean, standard deviation and coefficient of variation) were calculated, as well as the number of answers to the Cartesian scale items (completely agreed, agreed, neutral, disagreed, and completely disagreed) for the maritime transport axis as in Table (2).

Table (1): Mean and Standard Deviation Coefficient of Variation and Ratios of Answers for Maritime Transport variable**.**

Percentage of answer	Percentage	I don't quite agree	Percentage	I don't agree	Percentage	neutral	Percentage	agree	النسبة	I totally agree	Coefficient of variation	Standard deviation	Arithmetic mean	Paragraph
95%	1 %	2	2 %	6	4 %	13	8 %	26	61 %	200	11%	0.511	4.684	Q 1
96%	1 %	3	4 %	12	3 %	9	8 %	27	60 %	196	13%	0.598	4.623	Q 2
26%	1 %	2	3 %	9	56 %	184	12 %	38	4 %	14	14%	0.444	3.215	Q 3
96%	53 %	173	6 %	19	3 %	10	4 %	14	9 %	31	64%	1.163	1.830	Q 4
93%	34 %	112	4 %	12	6 %	18	21 %	68	11 %	37	58%	1.529	2.619	Q 5

From Table (1), it is clear that the arithmetic mean is greater than the hypothetical arithmetic means of (3), which means

that the sample answers indicate agreement with the questions of the maritime transport axis, except for question Q4, as shown from the table above that there is a high homogeneity of the questions (Q1; Q2; Q3) As for the questions (Q4; Q5) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most paragraphs of the maritime transport variable.

From Table (3), it is clear that the arithmetic mean is greater than the hypothetical arithmetic means of (3), which means that the sample answers indicate agreement with the questions of the marine storage variable, as shown from the table above that there is a high homogeneity of the questions (Q2; Q3; Q4; Q6) As for the questions (Q1; Q5) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most paragraphs of the maritime transport variable.

Descriptive statistics for answers to the human resources variable

The statistical indicators (arithmetic mean, standard deviation and coefficient of variation) were calculated, as well as the number of answers to the paragraphs of the Cartesian scale (completely agreed, agreed, neutral, disagreed, did not agree completely) for the human resources axis as in Table (4).

Percentage of answer	Percentage	I don't quite agree	Percentage	I don't agree	Percentage	neutral	Percentage	agree	Percentage	I totally agree ١	Coefficient of variation	Standard deviation	Arithmetic mean	Paragraph
94%	0.009	3	0.437	143	0.046	15	0.239	78	0.024	8	34%	0.943	2.777	Q1
93%	0.015	5	0.278	91	0.052	17	0.208	68	0.202	66	35%	1.185	3.401	Q2
61%	0.024	8	0.034	11	0.294	96	0.150	49	0.254	83	25%	0.927	3.761	Q3
96%	0.003	1	0.009	3	0.028	9	0.468	153	0.248	81	11%	0.489	4.255	Q4
96%	0.205	67	0.043	14	0.034	11	0.086	28	0.388	127	45%	1.603	3.543	Q5

From Table (4) it is clear that the arithmetic mean is greater than the hypothetical arithmetic means of (3) except for (Q1),

which means that the sample answers indicate agreement with the questions of the human resources axis, as shown from the table above that there is a high homogeneity of the questions (Q1; Q3; Q4) As for the questions (Q2; Q5) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most of the paragraphs of the human resources variable.

Descriptive statistics for answers to the Variable of devices and equipment

The statistical indicators (arithmetic mean, standard deviation and coefficient of variation) were calculated, and the number of answers to the paragraphs of the Cartesian scale was calculated (completely agreed, agreed, neutral, disagreed, completely disagreed) for the axis of devices and equipment as in Table (5).

Percentage of answer	For the ratio	I don't quite agree	النسبة	I don't agree	Percentage	neutral	For the ratio	agree	For the ratio	I totally agree	Coefficient of variation	Standard deviation	Arithmetic mean	Paragraph
92%	31%	100	3%	10	6%	20	24%	79	12%	38	54%	1.502	2.777	Q1
92%	3%	11	19%	63	6%	20	42%	137	5%	16	28%	0.947	3.340	Q2
92%	3%	11	21%	70	6%	20	34%	111	11%	35	31%	1.040	3.360	Q3
99%	1%	3	1%	3	1%	3	10%	33	63%	205	8%	0.403	4.757	Q4
97%	0%	0	1%	2	2%	8	70%	229	2%	8	2%	0.096	3.984	Q5

From Table (5), it is shown that the arithmetic mean is greater than the hypothetical arithmetic means of (3) except for (Q1), which means that the sample answers indicate agreement with the questions of the axis of devices and equipment, as shown from the table above that there is a high homogeneity of the questions (Q2; Q4; Q5) As for the questions (Q1; Q3) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most of the paragraphs of the devices and equipment variable.

Descriptive statistics for answers to the variable of

performance improvement

The statistical indicators (arithmetic mean, standard deviation and coefficient of variation) were calculated, as well as the number of answers to the Dekarty scale items (completely agree, agree, neutral, disagree, disagree completely) for the performance improvement axis as in Table (6).

Table (6): Arithmetic mean and standard deviation and coefficient of variation and percentages of answers to the axis of improving performance.

Percentage of answer	percentage	I don't quite agree	Percentage	I don't agree	Percentage	neutral	Percentage	agree	Percentage	I totally agree	Coefficient of variation	Standard deviation	Arithmetic mean	Paragraph
95%	16%	52	6%	18	4%	12	7%	23	43%	142	40%	1.485	3.749	Q1
75%	9%	30	3%	11	19%	61	17%	56	27%	89	31%	1.120	3.660	Q2
63%	2%	7	6%	18	28%	91	31%	102	9%	29	21%	0.746	3.518	Q3
85%	1%	3	3%	9	12%	38	10%	33	50%	164	18%	0.796	4.401	Q4
96%	17%	55	2%	5	3%	9	52%	170	2%	8	33%	1.092	3.287	Q5

From Table (6), it is clear that the arithmetic mean is greater than the hypothetical arithmetic means of (3), which means that the sample answers indicate agreement with the questions of the performance improvement axis, as shown from the table above that there is a high homogeneity of the questions (Q3; Q4) As for the questions (Q1; Q2; Q5) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most of the paragraphs of the performance improvement variable.

Descriptive statistics for answers to the variable of container handling yards

The statistical indicators (arithmetic mean, standard deviation and coefficient of variation) were calculated, as well as the number of answers to the Dekatry scale paragraphs (completely agree, agree, neutral, disagree, completely disagree) for the axis of container handling yards as in Table

(7)

Table (7): Arithmetic Mean and Standard Deviation, Coefficient of Variation and Ratios of Answers of Container Handling Yards

Percentage of answer	Percentage	I don't quite agree	Percentage	I don't agree	Percentage	neutral	Percentage	agree	Percentage	I totally agree	Coefficient of variation	Standard deviation	Arithmetic mean	Paragraph
93%	19%	61	3%	9	5%	17	6%	21	43%	139	42%	1.540	3.680	Q1
92%	2%	5	10%	33	6%	19	27%	87	31%	103	21%	0.824	4.012	Q2
97%	2%	5	8%	25	2%	7	11%	37	53%	173	19%	0.828	4.409	Q3
94%	12%	40	4%	12	5%	15	54%	177	1%	3	28%	0.945	3.368	Q4

From Table (7) it is shown that the arithmetic mean is greater than the hypothetical arithmetic means of (3), which means that the sample answers indicate agreement with the questions of the axis of container handling yards, as shown from the table above that there is a high homogeneity of the questions (Q3; Q4) As for the questions (Q1; Q2; Q5) Homogeneity measures indicate relatively little homogeneity. The answer ratio criterion also indicates clarity for most paragraphs of container handling yards.

Normal distribution of data is the focus of logistics performance

In this paragraph, the Kolmogorov-Smirnov test and the Shapiro-Wilk test will be performed to confirm the normal distribution of the data, and this condition is necessary for conducting statistical analysis in what is known as parametric statistical inference, the null hypothesis of the two tests indicates that the data follow a normal distribution against the alternative hypothesis, which states that the data are taken from a population that does not follow the normal distribution.

Table (7): Results Normal Distribution Test for Respondents'

Answers for Logistics Management variable

Shapiro-Wilk			Kolmogorov-Smirnova			
Sig.	df	Statistic	Sig.	df	Statistic	
0.134	407	0.008	0.269	407	0.063	Shipping
0.246	407	0.016	0.248	407	0.038	Marine Storage

Table (7) indicates the outputs of the statistical software package SPSS-V.26 for normal distribution tests of data, as the Kolmogorov-Smirnova test and the Shapiro-Wilk test were used, and by comparing the Sig value of the corresponding for each test with the value of the level of significance 0.05, and since all the value of sig is greater than the level of significance for all axes, this indicates the acceptance of the hypothesis that states that the study data follow the normal distribution according to this test.

Normal distribution of data for the Iformation Technology variable

In this paragraph, the Kolmogorov-Smirnov test and the Shapiro-Wilk test will be carried out to ensure the normal distribution of the data of the information technology variable.

Table (8): Results Normal Distribution Test for Respondents' Answers for Information Technology variable

Shapiro-Wilk			Kolmogorov-Smirnova			
Sig.	Df	Statistic	Sig.	Df	Statistic	
0.386	407	0.049	0.281	407	0.032	Human Resources
0.117	407	0.050	0.262	407	0.032	Devices & Equipment

Table (8) indicates the outputs of the statistical software package SPSS-V.26 for tests of normal distribution of data IT

axis, as the Kolmogorov-Smirnova test and the Shapiro-Wilk test were used , and by comparing the Sig value to correspond to each test with the value of the level of significance 0.05 and since all the value of sig Greater than the level of morality of all axes, this indicates the acceptance of the hypothesis that states that the study data follow the normal distribution according to this test**.**

Normal distribution of data for the variable of improving the overall performance of seaports

In this paragraph, the Kolmogorov-Smirnov test and the Shapiro-Wilk test will be sure that the normal distribution of the data of the variable of improving the overall performance of seaports.

Table (9): The results of the normal distribution test of the responses of the sample members for the axis of improving the overall performance of sea ports.

Shapiro-Wilk			Kolmogorov-Smirnova			
Sig.	Df	Statistic	Sig.	Df	Statistic	
0.368	407	0.027	0.391	407	0.012	Performance Improvement
0.394	407	0.030	0.066	407	0.026	Container Handling Yards

Table (9) indicates the outputs of the statistical software package SPSS-V.26 for normal data distribution tests The axis of improving the overall performance of seaports, as the Kolmogorov-Smirnova test and the Shapiro-Wilk test were used , and by comparing the value of Sig to meet each test with the value of the level of significance 0.05 and since all the value of sig Greater than the level of morality of all axes, this indicates the acceptance of the hypothesis that states that the study data follow the normal distribution according to this test**.**

Analyze and test correlation relationships for study variables

Spearman's correlation coefficient measures the relationship between two variables whose data is ordinal and to determine the strength and direction of the relationship between the two variables, this can be done from Table (10).

Direction	Relation Type	Correlation coefficient value
Package	Perfect correlation	
Package	Very strong	
Package	Strong	
Package	Medium	
Package	Weak	
Reversible	Perfect correlation	
Reversible	Very strong	
Reversible	Strong	
Reversible	Medium	
Reversible	Weak	

Correlations between the variable of logistics management and information technology

Table (10) shows the values of the correlation coefficient between the logistics management variable and the innovation of information technology, which was formulated by the second main hypothesis and the sub-hypotheses of correlation relations.

Table (10): Results of correlation analysis between the logistics management variable and the variable of improving the overall management of seaports (the first main hypothesis is the correlation relationship)

Marine Distribution	Marine supply	Marine Storage	Shipping	Variable

0.578	0.638	0.655	0.499	Improving overall management of seaports
0.000	0.000	0.000	0.000	
Acceptance	acceptance	acceptance	acceptance	Decision
3	2	1	4	Order

Table (11) shows the existence of a medium, direct and significant correlation between the variable of improving the overall management of sea ports and maritime transport (0.421), marine storage (0.424), maritime supply (0.489), maritime distribution (0.445) and this indicates the acceptance of the first main existence hypothesis by accepting its sub-hypotheses and related to correlation relations (H11A, H11B, H11C, H11D).

Correlations between the variable of logistics management and information technology

Table (12) shows the values of the correlation coefficient between the variable of logistics management and the innovation of information technology, which was formulated by the second main hypothesis and the sub-hypotheses of correlation relations.

Table (12) shows a strong, direct and statically significant correlation between a technology variable.

Marine Distribution	Marine Supply	Marine Storage	Shipping	Variable
0.578	0.638	0.655	0.499	Information Technology
0.000	0.000	0.000	0.000	
acceptance	acceptance	acceptance	acceptance	Decision
3	2	1	4	Order

Table (12) shows the existence of a strong, direct and statistically significant correlation between the

information technology variable and between marine storage (0.655), marine supply (0.638), marine distribution (0.578) and a medium, direct and statistically significant correlation and this indicates the acceptance of the second main existence hypothesis by accepting its sub-hypotheses and for correlation relationships (H12A, H12B, H12C, H12D).

Regression Analysis

In this paragraph, the effect relationship between the variables of the study will be tested and analyzed according to the main hypotheses and their sub-hypotheses using the statistical tool Multiple regression analysis, which is one of the statistical methods to test the effect relationship between variables, and regression analysis differs from correlation analysis, as it is done using regression analysis to determine which variables will affect the other variable, while in correlation analysis, the existence of the relationship between the variables is defined without specifying the cause variable and the result variable, and correlation analysis can be performed as a preliminary analysis For the existence of an effect relationship.

The direct impact relationship between the logistics management variable and the variable of improving the overall performance of seaports.

In this paragraph, the first main hypothesis related to the direct impact of the logistics management variable and its dimensions on the variable of improving the overall performance of seaports, which was formulated with the first main hypothesis (impact) and the sub-hypotheses emanating from it, will be tested and analyzed in two ways. The first method will be the analysis and testing using simple regression analysis, and in this method, the impact relationship between each dimension of logistics management on the overall performance in seaports will be tested

separately. On the rest of the dimensions, that is, there will be four models of direct obstruction between the dimensions of logistics management and overall performance, as shown in Table (13), while the second method involves conducting a multiple regression analysis of the dimensions of logistics management and measuring its impact collectively on the overall performance variable.

Table (13): Results of Direct Impact Analysis (Simple Correlation Analysis) of Logistics Management Dimensions on Improving the Overall Performance of Seaports.

sig	F		Sig.	t	B	Dimension
.000[b]	95.414	0.189	0.000	29.01095	2.708	(Constant)
			0.000	9.768033	0.245	Shipping
.000[b]	50.486	0.109	0.000	39.18028	3.063923	(Constant)
			0.000	7.105372	0.15416	Marine Storage

The results of Table (13) indicate the following:

First: The direct impact of maritime transport on improving performance

There is an effect of the dimension of the maritime transport variable (0.245) as an independent variable on improving performance, and the sig value of (0.000) indicates the significance of this effect and statistical significance, and the value of the coefficient of determination indicates that the maritime transport variable explained (19%) of the change in the variance of performance improvement, as the value of F and the accompanying probability value indicates the significance of the model in general.

Second: The direct impact of marine storage on improving performance

There is an effect of the dimension of the marine storage variable (0.154) as an independent variable on performance improvement, and the sig value of (0.000) indicates the significance of this effect and statistical significance, and the value of the coefficient of determination indicates that the marine storage variable explained (11%) of the change in the variance of performance improvement, and the F value and the accompanying probability value indicate the significance of the model in general.

The direct impact relationship between the logistics management variable and the information technology variable

Table (14) shows the results of the analysis of the impact relationships of the variables of logistics management dimensions on the information technology variable separately.

Table (14): Results of Direct Impact Analysis (Simple Correlation Analysis) of Logistics Management Dimensions on Improving the Overall Performance of Seaports

sig	F	R^2_{adj}	Sig.	T	B	Dimension
.000[b]	147.105	0.265	0.000	29.15134	2.661299	(Constant)
			0.000	12.12869	0.297686	Shipping
.000[b]	148.363	0.266	0.000	39.576	2.884314	(Constant)
			0.000	12.18	0.246289	Marine Storage

First: The direct impact of maritime transport on information technology

There is an effect of the dimension of the maritime transport variable (0.297) as an independent variable on information technology, and the sig value of (0.000) indicates the

significance of this effect and statistical significance, as the value of the coefficient of determination indicates that the maritime transport variable explained (26%) of the change in the variance of information technology, as the value of F and the accompanying probability value indicates the significance of the model in general.

Second: The direct impact of marine storage on improving performance

There is an effect of the dimension of the marine storage variable (0.154) as an independent variable on performance improvement, and the sig value of (0.000) indicates the significance of this effect and statistical significance, and the value of the coefficient of determination indicates that the marine storage variable explained (11%) of the change in the variance of performance improvement, and the F value and the accompanying probability value indicate the significance of the model in general.

Table (15): Results of testing and analysis of the first main hypothesis related to the impact of logistics management and its dimensions (multiple regression analysis) on the variable of improving the overall performance of sea ports.

Sig	F		Sig	t	B	Dimension
.000	46.8	0611	0.000	21.855	2.257	(Constant)
			0.000	4.112	0.116	Shipping
			0.016	2.650	0.017	Marine Storage
			0.000	4.519	0.165	Marine Supply
			0.000	3.909	0.113	Marine Distribution

Table (15) shows the existence of a direct and statistically significant effect of the variables of logistics management and dimensions on the variable of improving the overall

performance of seaports, as all the values of the model parameters reached positive values and by comparing the sig value corresponding to each parameter with the approved level of significance (0.05) and since the value of sig is less than the level of morality, this indicates the significance of the model parameters, as the table shows that the value of the corrected determination coefficient reached (0.611) This percentage of variations explained in the variable of improving the overall performance of seaports,Which is due to the variable of logistics management, as the value of F indicates the significance of the model in general, and from the results of the above analysis, we conclude by accepting the first main hypothesis and its sub-hypotheses related to the impact of the logistics management variable on the variable of improving overall performance in seaports.

The direct impact relationship between the logistics management variable and the information technology variable

Table (16) shows the results of the analysis of the impact relationships of the variables of logistics management dimensions on the information technology variable separately.

Table (16): Results of Direct Impact Analysis (Simple Correlation Analysis) of Logistics Management Dimensions on Improving the Overall Performance of Seaports.

sig	F		Sig.	t	B	Dimension
.000[b]	147.105	0.265	0.000	29.15134	2.661299	(Constant)

			0.000	12.12869	0.297686	Shipping
.000[b]	148.363	0.266	0.000	39.576	2.884314	(Constant)
			0.000	12.18	0.246289	Marine Storage

First: The direct impact of maritime transport on information technology

There is an effect of the dimension of the maritime transport variable (0.297) as an independent variable on information technology, and the sig value of (0.000) indicates the significance of this effect and statistical significance, as the value of the coefficient of determination indicates that the maritime transport variable explained (26%) of the change in the variance of information technology, as the value of F and the accompanying probability value indicates the significance of the model in general.

Second: The direct impact of marine storage on information technology

There is an effect of the dimension of the marine storage variable (0.24) as an independent variable on information technology, and the sig value of (0.000) indicates the significance of this effect and statistical significance, and the value of the coefficient of determination indicates that the marine storage variable explained (26%) of the change in the variance of information technology, and the value of F and the accompanying probability value indicates the significance of the model in general.

Table (17) shows the results of the impact relationship of logistics management variables on information technology in combination.

Table (17): Results of testing and analysis of the second main hypothesis related to the impact of logistics management and its dimensions on the information technology variable.

Sig	F		Sig.	t	B	Dimension
.000b	106.3	0.511	0.000	22.24	1.988	(Constant)
			0.000	4.133	0.101	Shipping
			0.012	2.537	0.056	Marine Storage
			0.000	5.936	0.187	Marine Supply
			0.000	5.962	0.149	Marine Distribution

Table (17) shows the existence of a direct and statistically significant effect of logistics management variables and dimensions on the information technology variable, as all the values of the model parameters reached positive values and by comparing the sig value corresponding to each parameter with the approved level of significance (0.05) and since the sig value is less than the level of morality, this indicates the significance of the model parameters, as the table shows that the value of the corrected determination coefficient reached (0.511) This percentage of explanatory variations in the variable of improving the overall performance of seaports, which is due to the variable of logistics management, as the value of F indicates the significance of the model in general, and from the results of the above analysis, we conclude by accepting the second main hypothesis and its sub-hypotheses related to the impact of the logistics management variable on the information technology variable.

The direct impact relationship between the information technology variable and the variable of improving the overall performance of seaports

Table (18): Results of Direct Impact Analysis (Simple Correlation Analysis) of Information Technology Dimensions on Improving the Overall Performance of Seaports.

Sig	F		Sig.	T	B	Dimension
.000b	106.589	0.206	0.000	25.237	2.569	(Constant)

			0.000	10.324	0.278	Human Resources
.000b	101.401	0.198	0.000	17.666	2.304	(Constant)
			0.000	10.070	0.343	Devices & Equipment

The results of Table (18) indicate the following:

First: The relationship of direct impact of human resources on improving performance.

There is an effect of the dimension of the human resources variable (0.278) as an independent variable on performance improvement, and the sig value of (0.000) indicates the significance of this effect and statistical significance, as the value of the coefficient of determination indicates that the human resources variable explained (21%) of the change in the variance of performance improvement, as the value of F and the accompanying probability value indicates the significance of the model in general .

Second: The direct impact of devices and equipment on improving performance

There is an effect of the dimension of the variable of devices and equipment (0.343) as an independent variable on the improvement of performance and the value of sig of (0.000) indicates the significance of this effect and the significance of the statistic The value of the coefficient of determination indicates that the variable of devices and equipment explained (20%) of the change in the variance of performance improvement as the value of F and the accompanying probability value indicates the significance of the model in general.

4.3 Hypothesis testing

Multiple slope analysis will be used for the purpose of testing effective relationships between variables and thus testing

hypotheses. According to this test,The hypothesis is accepted.

H1A_ The Hypothesis of the First Sub-Existence: There is a direct connection and effect of statistically significant correlation between maritime transport and improving the comprehensive performance of seaports.

H1B_ The Second sub-submission hypothesis: There is a relationship of correlation direct impact with statistically sign between marine storage and improving the comprehensive performance of seaports.

H2_ The hypothesis of the second main existence: There is a direct link and statistically significant impact between the dimensions and information technology.

H2A_There is a direct link and statistically significant impact between the maritime transport and information technology.

H2B_ There is a direct link and statistically significant impact between the marine storage and information technology.

H2C_ There is a direct link and statistically significant impact between human resources and improving the overall performance of seaports.

H3_ There is a direct link and statistically significant impact between devices, equipment and improving the overall performance of seaports.

H3A_ The Fourth major hypothesis of existence: There is a positive indirect impact statistical significance between logistics management and improving the comprehensive performance of sea ports through the middle role.

H3B_There is a positive indirect impact statistically significant relationship between logistics management and improving the comprehensive performance of seaports through human resources.

H3C_There is a positive indirect impact statistically significant relationship between logistics management and improving the comprehensive performance of seaports

through devices and equipment.

4_ Conclusions

1_ The study found a direct and positive impact relationship for logistics management in information technology, and this explains the existence of awareness and interest among the members of the sample surveyed and the importance and role of logistics management in the good use of information technology in the General Company for Iraqi Ports.

2_ The General Company for Iraqi Ports pays a level of attention to the dimension of human resources, and this explains why individuals have the necessary skills to accomplish their work in a good manner.

3_ The study found a high concentration by the sample in obtaining information and instructions before carrying out the tasks assigned to them.

4_ The study confirmed that the General Company for Ports of Iraq has a logistical vision for the future in spreading electronic culture among its employees, by continuing to establish electronic courses related to information technology.

5_ The results showed that the General Company for Iraqi Ports is trying hard to introduce information technology in its operations to improve the performance of the company.

5_ Recommendations

1- The need to allocate an independent department specialized in logistics management. This department works to link information technology with the overall performance of Iraqi seaports, while constantly updating them.

2- Paying attention to approaches to improve the overall performance of seaports

3- Implementing the proposed framework that contributes to improving the overall performance of Iraqi seaport

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