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The Role of Information Systems in Integrating the Supply Chain in the General Company for Gas Filling and Services

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Abstract

This study aimed to measure the role of information systems as an independent variable with its dimensions represented by (human resources, equipment and devices, software, data sources, networks and communications) on supply chain integration as a dependent variable with its dimensions (customer, source, manufacture, delivery, returns) and in order to achieve Objective of the study: Two main sources were relied upon to collect the data necessary for this study: secondary data sources, which included the Internet, periodicals, references, and a review of literature related to the study, to explain the basic concepts and identify the most important studies that addressed the subject of the study, while the primary data sources included the analysis of 65 questionnaires distributed Employees of the General Company for Gas Filling and Services / Basra Branch were randomly selected, and the statistical program SPSS was used to analyze the data.The researcher reached several conclusions, most notably the existence of a statistically significant impact relationship between information systems and supply chain integration. Based on the results, the research presented a set of recommendations, the most prominent of which is the study recommends to the General Company for Gas Filling and Services/Basra the importance of continuing to learn about the concept of information systems and the necessity of applying them in the ongoing competition processes. The company's ability to implement information systems in an appropriate manner gives it greater flexibility in facing environmental challenges.

Keywords: Information Systems, Supply Chain Integration, General Company For Gas Filling And Services

Introduction

Organizations in all their forms seek to achieve the goals for which they were established in a manner characterized by seriousness and continuity. Accordingly, the administrations of these organizations aim to organize their work and various activities, whether they are concerned with service or production activities, and work to ensure their continuity in the fields in which they operate in a way that contributes to their stability. Some previous studies have confirmed Such as Gunasekaran & Ngai (2004) and Flynn et al. (2010) that supply chain integration constitutes a motivation for many researchers to conduct studies, as they recommended increasing research into this concept. Information systems are an essential source to enable the researched company to achieve integration in the supply chain, and in the event of neglect and lack of interest in systems This may lead to a lack of integration in the supply chain in the organization under study and failure to achieve the desired objectives. From this standpoint, the aim of the current research is to achieve the fundamental objectives, the most important of which is testing the expected influence relationship between the dimensions of each of the information systems (human resources, equipment and devices, software, sources Data, networks and communications) and supply chains represented by (customer, source,

manufacture, delivery, returns) and determining the extent of the respondents' awareness of the dimensions of the two variables.

Methods

First - the research problem

Some previous studies, such as (Gunasekaran & Ngai, 2004) confirmed that supply chain integration constitutes a motivation for many researchers to conduct studies, as they recommended increasing research into this concept. Information systems are an essential source to enable the researched company to achieve integration in the supply chain. Omission and lack of attention to information systems may lead to a lack of integration in the supply chain in the organization under study and failure to achieve the desired goals. From the above, the research problem can be formulated as follows:

What is the role of information systems in integrating the supply chain at the General Company for Gas Filling and Services? To address this problem and work to understand the aspects of the topic, the researcher analyzed it into the following sub-questions: (1) What is the reality of using information systems in the company in question? (2) What is the level of supply chain management in the company in question? (3) What is the level of awareness of the researched sample about the dimensions of information systems and the dimensions of the supply chain?

Second - Research objectives:

The goals we wish to achieve through the current research are summarized as follows :(1) Determine the level of practice and application of information systems in the organization (2) (3) Determine the level of supply chain management and its dimensions in the organization (4) Learn about the basic concepts of information systems and supply chain

Measuring the correlation between the independent variable represented by information systems and the dependent variable represented by supply chain integration

Third: Hypothetical plan

Figure (1) shows the hypothetical scheme adopted by the researcher in order to conduct scientific treatments of the research problem, which reflects the nature of the relationship between the research variables, as shown in Figure (1-1)

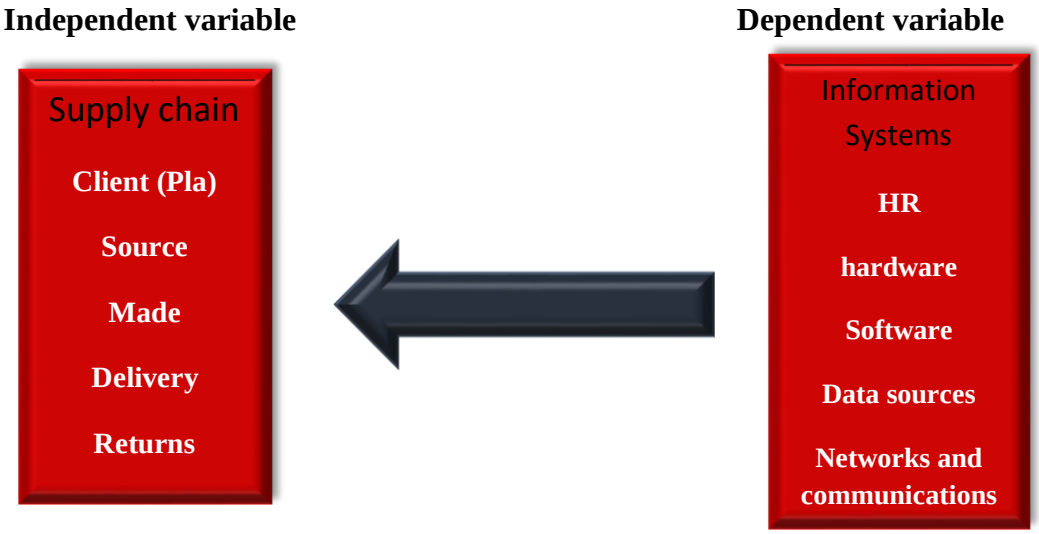

Figure 1. hypothetical scheme

Source: Prepared by the researcher

Fourth - Research hypotheses:

H1 (There is a statistically significant correlation between the dimensions of information systems and the dimensions of the supply chain with a significant degree of 0.05)

The following sub-hypotheses branch out from the main hypothesis: (1) H1.1 There is a statistically significant correlation between human resources and the client (plan); (2) H1.2 There is a statistically significant correlation between the equipment and the customer (the plan) (3) H1.3 There is a statistically significant correlation between the software and the customer (the plan); (4) H1.4 There is a statistically significant correlation between the data source and the customer (the plan); (5) H1.5 There is a statistically significant correlation between networks and the client (plan)

Fifth - The importance of research

Providing a realistic picture of the role of information systems in general and the supply chain in particular. Providing the Arab library with scientific research in the field of information systems and supply chain integration. It is hoped that the current research will contribute to helping managers in the company under study and others in using the results of the research and the resulting recommendations. It is hoped that this research will contribute to enriching knowledge in the fields of scientific research related to information systems and supply chain integration.

Sixth: Methods of collecting data and information

A collection of various scientific sources from Arab and foreign literature, including books, articles, periodicals, master's theses, doctoral dissertations, and research that enriched the theoretical side of the research. Questionnaire: The questionnaire was used to collect descriptive data obtained from sample members

Seventh - Previous studies

Mithas and R, (2016) How Information Systems Technology Strategy and Investments Influence Firm Performance: Conjecture and Empirical ust Evidence

This study aimed to measure the joint impact of the information systems strategy and investment in information technology on the market value of enterprises, which is a major and prevalent goal that enterprises choose to expand revenues, reduce costs, or dual focus on both. The study sample represented 300 companies operating in the United States of America, where The results showed that companies that focus bilaterally on investment in information technology in addition to the strategic management of this technology have a higher market value than those that focus solely on revenues or costs, and in return they have the same level of profitability.

The researcher benefited from this study in its independent variable, which is software development and equipment development, which are similar to the model of his study, in addition to human resources. This study differs from the researcher's study in its community and sample.

Ben salah (2016) " The Impact of Supply Chain Management on Competitive Advantage and Organizational Performance "

This study aimed to identify the impact of supply chain management on competitive advantage and organizational performance. The descriptive analytical approach was used to collect and analyze data, and the results of the study showed a positive impact of supply chain management in its dimensions (the relationship between suppliers, intermediaries, distributors, and customer relationships) on improving the organization's performance. The study recommended that the

strategic approach adopted supply chain management on the basis of long-term establishment of supplier relationships and effective communications because efficiency in supply chain management is the key to the success of the organization in the long term. The researcher benefited from the study by strengthening the dependent variable (supply chain integration) in its dimensions with the difference in Both study communities.

Vanichchinchai (2014) "Supply chain management, supply performance and overall quality management "

This study aimed to evaluate the level of supply chain management practices (supply chain, warehousing and operations components) and TQM practice on the supply performance of a company in the automobile industry in Thailand. As for the results, it showed that organizations that apply supply chain management practices and total quality management practices achieved a higher level of supply performance for the company. The researchers benefited from this study in supporting the dependent variable (supply chain), but it differed from the current study in society.

Search limits:

Spatial boundaries: The current research was limited to the General Company for Gas Filling and Services/Basra

Time limits: This research was completed during the academic year 2022/20

The second section: The theoretical, conceptual aspect

First: Information systems

All writers agree that information systems began with the emergence of groups thousands of years ago. At its beginning, it would have been known as primitive systems that relied on nails instead of pens and clay digits instead of

The storage unit known now. Then the methods developed based on manual systems and then to electronic systems. Since information is one of the resources available to management and information can be managed just like any resource, interest in this topic arose, and with the emergence of the computer and its amazing ability, its use became widespread in the organization, as organizations at all administrative levels adopted it. Thus, interest increased, as managers and all members of the organization adopted the computer in order to develop the organization, and thus the need developed for the necessity of the presence of various skills, so the need for the necessity of the presence of information systems that help in accelerating performance appeared and increased. The emergence of accounting information systems was the first major application of the computer and to information systems and computer systems. Decision support and knowledge-based systems.

There are industrial economic transformations that are: (1) The first economic revolution in 1890 AD; (2) The second economic revolution in 1920 AD; (3) The Third Economic Revolution 1989 AD

These three revolutions were the main reason for the emergence of what is known today as the knowledge economy, which relies on the information base in the economy.

Information systems appeared at the beginning of the first economic revolution, where there was a need to manage production processes and for information to control this information. At that time, data was collected manually and then analyzed by some specialists and turned into information for administrative leaders. Then information systems developed with the development of the computer and today they have become one of the most important resources available to managers in making decisions. Information systems cannot be ignored today by

managers, as they are the decisive role of organizations because of the technology they possess that directly affects how managers lead their organizations and how they plan and make decisions. Therefore, administrative leadership Modern technology plays an important strategic role in the continuation of the organization, and any change in the organization's strategy requires a strategic change to the information systems (Rezvani et al., 2017).

The concept of information systems

Many definitions of information systems were provided, which varied in terms of form and were similar in terms of content, as these definitions differed according to the vision of researchers in this field. Hence, we must include several definitions to reach a special definition that contributes to enriching this study. Information can be defined as the facts and ideas that people exchange in a Their public lives through various means of communication and through various information centers and systems in society. The person who uses information is himself a producer of other information and transmits it through the available means of communication (Heintze & Bretschneider (2000) and (Hashim et al., 2010) defined it as administrative information technology that includes all types of technologies that are used in administrative work in order to achieve goals in control, organization, and decision-making. Information systems are also defined as data organized and presented in a way that makes it meaningful to the person who receives it and provides an addition to his existing knowledge. About a phenomenon, event, or specific field, the information tells the user something that he does not know or cannot expect (Haviland & Clark, 1974), but according to (Zemmouchi-Ghomari, 2021) it is a group of interconnected components that collect, process, store, and disseminate Data and information provide a feedback mechanism to monitor and control operations to ensure they continue to achieve their goals. In light of the previous definitions, the researcher can define the concept of information systems as an integrated package of equipment, software, and computerized means of communication through which data is collected to be processed and then exported in the form of clear information. The user contributes to making appropriate decisions in the organization

The importance and benefits of information systems

There are many benefits that organizations gain from the optimal and effective use of information systems in their work, as many researchers in this field have pointed to a package of benefits that came as a result of the use and adoption of information systems by organizations, perhaps the most notable of which are:

(Raymond McLeod, George Shibl, 2000) (Al-Harith Abdel Moneim, 2019) (Al-Zein Rania Mahdi, 2019) believes that the benefits of information systems are summarized as follows: (1) Information systems provide a set of functional systems. (2) Information systems provide appropriate information at the internal and external levels of management at all levels so that effective and temporary decisions can be taken, in order to provide the planning, control and direction process within an organization such as non-governmental organizations or family associations. (3) Giving the facility the maximum benefit from using computers and systems to help provide information, manage it, and use it in practical life. (4) Providing the various administrative levels of an organization with all the information they need, which helps those in charge of the work to make the appropriate decision. Information systems are a way to provide information at the appropriate time in a form that is readable to the responsible person in an accurate manner, using a computer or even using manual systems, but they are accurate enough. (5) Management avoids making mistakes in planning and allocating work. (6) It works to identify and measure relationships between variables and use them in forecasting. (7) Providing the necessary information to all administrative levels about their current and

previous status and forecasting by collecting information. (8) Providing researchers and beneficiaries with the information they desire

Dimensions of information systems

Information systems consist of a number of dimensions or components that must be primarily present in their applications, as many researchers have defined them as being represented by each of the following elements: (hardware, software, networks, databases, and human resources).

Gauzelina & Bentza (2017), Mithas & Rust (2016), see the dimensions and components of information systems as:

Human Resources: It is an important element in information systems that includes a specialized segment of individuals who are prepared, qualified, and trained in a way that enables them to perform their work properly. This element can be classified into:

Specialists: They are the people who analyze, design, and operate the information system and consist of systems analysts, programmers, and computer operators.

End users: are the individuals who use the information system and can be managers, accountants, engineers, vendors, customers, and clerks.

Equipment and devices: It includes all physical equipment and devices used in system operations. Software and processing: It includes all basic software that helps in managing the system and carrying out its tasks and work. This software includes operating systems, applications, ready-made programs, and the provision of various computer languages, as well as programs designed to implement and perform tasks and system workers.

Data sources: Data includes raw and primary material and all the data and information that must be entered into the system that contribute to the maintenance and continuity of the system's work. The continuity of the correct flow of data helps in the continuity and continuity of the system's work, as it is the basic element upon which decisions are built after these are processed. data in the appropriate manner and style

Networks and communication: These are all the various means of transportation (standard telephone lines, cables, optical fibers, and wireless networks) that facilitate the process of exchanging and transmitting data and information in all its forms.

Second: Supply chain

1- The concept of supply chains

Companies can no longer compete effectively in isolation from their suppliers and other organizations in the supply chain. Interest in the concept of supply chain and its management has increased since the early 1980s, when companies saw the benefits of cooperative relationships inside and outside their organizations. The term "supply chain management" emerged in the late 1980s. The 1980s and its use became widespread in the 1990s before that time. Companies used terms such as "logistics services" and "management operations" instead of That. A number of definitions have been proposed related to the concept of "supply chain," defined by Greeff & Ghoshal (2004) as an integrated approach to planning and controlling materials, services, and the flow of information from suppliers through factories to the end user, according to Hartmut Stadtler & Christoph Kilger Editors, 2007, p9. The supply chain represents a network of organizations that participate through upstream and downstream links in the various processes and activities that produce value in the form of products or services in the hands of the final consumer. Sohal A & al, 2002, p. 97) defined it as all activities related to the flow and transformation of raw materials into final products and their delivery to the final

consumer, in addition to the flow of information. Felea & Albăstroiu (2013) believes that supply management represents a combination of science and art, in order to achieve Improvement in the way the company obtains the raw materials needed to produce the product or provide the service and delivers or ships them to customers. From the above, the researcher believes that the supply chain is:

A group of organizations interconnected with each other through various processes of sourcing and transporting materials, performing the necessary operations on them, and then distributing products and services to customers in line with their desires, taking into account the necessity of an effective information system.

The importance and benefits of the supply chain:

As we said earlier, interest in supply chains increased in the eighties and early nineties of the last century for several reasons, including that companies became more specialized and looked for suppliers who could provide low-cost, high-quality materials instead of owning their own supply sources. These organizations have realized that when one organization deals with another organization, both organizations will benefit from the success of the other, and the increase in competition between different organizations at the national and global levels and the scarcity of

Available resources and the development of production systems such as MRP & JIT systems, in addition to the expansion of the concept of globalization, are all factors that have led to increased interest in supply chains.

Robinson & Malhotra (2005) believe that the importance of supply chain management stems from the necessity of applying it effectively, and therefore there are several issues that push companies to the need to adopt the supply chain management approach, which are:

Reducing supply costs and capital costs

Increase market share and sales. Increase the marginal profit of products and increase the organization's cash flows. Increasing manufacturing efficiency at all levels and achieving outstanding work completion. Enhance customer contact and acquisition

Dimensions of the supply chain:

The dimensions of the supply chain according to Graves & Willems (2003) are: (1) Production: What products does the market want? What is the quantity that must be produced? (2) Inventory: What inventory should be stored at each stage of the supply chain? What is the inventory size? (3) Location: Where should the production and storage facilities be located and what is the most cost-effective location; (4) Means of transportation: How inventory and materials should be transported from one location in the supply chain to another; (5) Information: How much data should be collected and how much information should be shared?

Through the researcher's knowledge, he found that the studies and research that dealt with the subject of supply chains agree on five basic dimensions interspersed with sub-dimensions, as these dimensions are agreed upon by researchers and writers, and these dimensions are also considered comprehensive and commensurate with the variables of the study.

Lockamy & McCormack (2004) believe that the dimensions of the supply chain are represented in the following: (1) Plan (customer): The plan is considered the strategic part of supply chain management because the primary goal is to achieve the customer's request for the product and service. The largest share of planning is focused on developing the matrix established to control and direct the supply chain so that it is described as efficient, and achieving the lowest cost, highest quality, and highest value for customers.

Some detailed elements are: (a) Customers: That is, determining what products and services customers require; (b) Forecasting: that is, forecasting the quantity and time of the customer's order

Source: It is the process of selecting the necessary suppliers to ship or deliver the products and services necessary to create the product and provide the service, in addition to determining the appropriate price, shipping processes, and payments to suppliers, creating the necessary matrices to control and improve relationships with these suppliers, as well as developing combined processes to manage the inventory of products and services that will be received. From suppliers, including receiving shipments, verifying them, and transporting them to production facilities. It includes some sub-elements such as: (a) Inventory: that is, meeting demand needs with effective management of inventory holding costs. (b) Evaluation: that is, evaluating potential suppliers and then achieving their quality control, taking into account on-time delivery and flexibility, in addition to maintaining relationships with suppliers.

Manufacturing: This component relates to the manufacturing step, where the necessary activities for production, testing, packaging, and preparation for delivery are scheduled. This step is considered the most intensive and heavy part of the supply chain, where the quality levels of outputs are measured and the productivity of human resources is measured. It includes two sub-elements: (a) Design: This means integrating customers and their needs, with the manufacturing capacity and time needed to reach the market; (b) Operation: The focus is on quality control and work scheduling

4Delivery: This component is called logistical, meaning supply systems, and it means the best movement and storage of materials through managing operations related to coordinating the receipt of orders from customers, developing the warehouse business network, and arranging a transportation fleet in order to deliver the final products to customers. In addition to the above, there are five basic issues for effectiveness. Supply systems, which move the product, move information, time, service, and cost, integrate internally between different systems and externally between different organizations involved in the supply chain.

Returns: This relates to receiving returns for products that are defective or in excess of what customers need, and receiving complaints from customers regarding the products delivered to them and working to resolve them.

The third topic: the practical field aspect

Research methodology

In order to achieve the objectives of the study, the researcher relied on the descriptive analytical approach to analyze and classify data in order to identify the role of information systems in integrating the supply chain in the General Company for Gas Filling and Services. This approach is based on an accurate and integrated scientific description of the current situation or problem using statistical analysis. It is also based on the facts associated with it, so that it is not limited to describing the apparent phenomenon, but rather includes analyzing, measuring, and interpreting the data and arriving at an accurate analysis of the phenomenon or problem and its results using inferential analysis and presenting solutions and proposals to address it.

Study population and sample:

The study population is the General Company for Gas Filling and Services/Basra as a case study

Sampling and Analysis Unit

The sampling unit consisted of managers, department heads, and engineers working in the company under research, and their number reached 65 individuals. The questionnaire will be distributed to them using a purposive sampling method and according to job levels. Table (1) shows the distributions of sample members according to demographic variables as follows:

Table 1. Sample properties

Ratio of valid questionnaires distributed	Valid questionnaires	Invalid questionnaires	Recovered questionnaires	Sample volume
%97	63	2	63	65

Data collection sources

For the purpose of achieving the objectives of the current study, the researcher relied on two types of information sources: secondary sources and primary sources, as follows: (a) Secondary sources: These are the data obtained from library sources and from the literary review of previous studies in order to establish the scientific foundations and theoretical framework of the study, as the following was referred to: Books, sources, and written scientific materials published on the subject of the research, master's theses, doctoral dissertations that examine the subject of the variables of the current research, specialized periodicals and pamphlets that were written on the subject of the current study, in addition to specialized Arab and foreign journals. (b) Primary sources: These are the data that were obtained through preparing a special questionnaire for the subject of this study. It covered all aspects addressed by the theoretical framework, questions and hypotheses on which the study was based.

Tests for the study too

The researcher developed a questionnaire to cover all dimensions of the study's independent and dependent variables in a way that enabled testing the study's hypotheses, which were built, composed, and distributed among the sample members. In order to increase the degree of credibility and reliability of the data collected, the researcher relied as much as possible in measuring the study variables on the standards mentioned in previous studies, which have been proven to be reliable and reliable. The sample members' answers were distributed to the questionnaire items according to a five-point Likert scale, which expresses the extent of the respondent's agreement with the questionnaire items (strongly agree 5 marks, agree 4 marks, neutral 3 marks, disagree 2 marks, strongly disagree 1 mark. Determine the direction of the sample: Table (2) shows the sample trend estimates for each item based on the following equation:

$$\frac{\text{Smaller degree} - \text{A greater degree}}{\textit{The greatest degree}}$$

0.8 = 5 / 1- 5

Each time we add a value of 0.8 to determine the direction of the sample, as follows:

Table 2. shows the sample trend estimates

I totally disagree	do not agree	neutral	agree	Totally agree	direction
1.8 – 1	2.6 – 1.8	3.4 – 2.6	4.2 – 3.4	5 - 4.2	Category

Stability test

The Cronbach Alpha coefficient was adopted for internal consistency in order to ensure the validity of the questionnaire as a tool for collecting the data necessary for the current study, and Table 3 shows this.

Table 3. Cronbach Alpha coefficient

The Hub	The Field	Internal consistency reliability coefficient
Information Systems	hardware	.863
	Software	.870
	HR	.774
	networks	.820
	Databases	.842
Supply chain integration	Customers	.793
The tool as a whole		0.92

It is clear from Table (3) that the overall reliability coefficient for the independent variable (information systems) and the dependent variable (supply chain integration) was higher than (70%), which indicates the presence of internal consistency between the items of the study tool at a rate of (92%), and this confirms the validity of the tool. Study to test hypotheses Statistical methods used :To answer the questions of the current study and test the validity of its hypotheses, the appropriate statistical tests (SPSS) derived from the Social Science statistical package were used. (1) Descriptive statistics measure to describe the study sample and answer its questions: arithmetic means and standard deviations; (2) Testing validity and construct validity and knowing the trend of the sample; (3) T test to determine whether there is statistical significance or not; (3) Testing the reliability of the tool using Cronbach's alpha coefficient to estimate the stability of the internal consistency

Show results

Characteristics of the study sample

The characteristics of the sample were presented by describing the demographic variables (gender, age group, educational qualification, job title, and number of years of experience), and the results were presented as follow:

Table 4. Description of the study sample in terms of demographic variables

variable	Level/category	the number	Percentage
Sex	male	17	%68
	feminine	8	%32
	the total	25	%100
age	(29-19)	2	%8
	(40-30)	9	%36
	(50-41)	10	%40
	more than 50	4	%16
	the total	25	%100
Practical qualification	Preparatory school and below	0	0
	diploma	8	%32
	Bachelor's	17	%68
	Master's	0	0

	Ph.D	0	0
	the total	25	%100
Professional Experience	10And below	8	%32
	19 – 11	11	$44
	20more	6	%24
	the total	25	%100
Job title	boss	1	%4
	Head of the Department	5	%20
	Engineer	9	%36
	Other	10	%40
	the total	25	%100

First: Sex

Sample Direction`12	T Test	Relative Importance	Standard Deviation	Arithmetic Mean	I Totally Disagree العدد	I Do Not Agree العدد	Neutral العدد	Agree العدد	Totally Agree العدد	Question Number	Dimensions	Variable
I agree	4.803845	80%	1.040833	4	1	0	7	7	10	X1	**First: human resources**	Independent variable/information systems
I agree	4.574662	75%	0.830662	3.76	0	3	3	16	3	X2		
I agree	3.133398	72%	0.957427	3.6	0	3	9	8	5	X3		
I agree	4.618802	76%	0.866025	3.8	0	1	9	9	6	X4		
	5.56646		0.709606 6	3.79	HR							
I agree	2.289515	69%	0.960902	3.44	0	4	10	14	4	X5	**Second: Equipment and devices**	
I agree	4.041798	74%	0.890693	3.72	0	1	11	9	6	X6		
neutral	-0.46395	58%	0.862168	2.92	0	8	13	10	2	X7		
I agree	2.486549	70%	1.045626	3.52	0	5	7	8	5	X8		
	2.85836		0.866025 4	3.4	Equipment and devices							
neutral	0	60%	1.190238	3	2	8	6	6	3	X9	**Third: Software**	
neutral	-0.21401	59%	0.934523	2.96	0	10	7	7	1	X10		
neutral	1.397926	66%	1.144552	3.32	0	8	6	6	5	X11		
	0.48614		0.959938 2	3.09	Software							
I agree	2.088932	68%	0.957427	3.4	0	4	11	6	4	X12	**Fourth: Databases**	
I agree	4.618802	76%	0.866025	3.8	0	2	6	12	5	X13		
	3.4641		0.866025 4	3.6	Databases							
neutral	0.960769	64%	1.040833	3.2	1	5	10	6	3	X14	**Fifth: Networks and communication**	
Totally agree	7	88%	1	4.4	0	2	3	3	17	X15		
I agree	6.354344	82%	0.881287	4.12	0	1	5	9	10	X16		
I agree	3.56107	78%	1.235584	3.88	1	4	2	8	10	X17		
	6.29869		0.714434 508	3.9	Networking and communication							
	4.453325	72%	0.649877 994	3.578	Information systems							

The percentage of males was higher than the percentage of females, as the percentage of males was (68%), while the percentage of females was +- (32%), which indicates that the company attracts males to a greater extent.

Second: Age

The age group (from 41-50) had the highest percentage among the other categories, at (40%), while the age group (from 19-29) had the lowest percentage among the groups, reaching (8%), which indicates that the company does not attract a sufficient number. From young people.

Third: Academic qualification

The highest percentage among qualifications was for the academic qualification (Bachelor's) at a rate of 68%, while the qualification (Diploma) obtained at a rate of 32%, while the company lacked the higher certificates of Master's and Doctorate at a rate of 0%.

Fourth: Years of experience

In terms of years of experience, the highest percentage was for those whose experience was (11-19) years, at a rate of (44%). The results also indicated that the lowest percentage was for those with 20 years of experience or more, at a rate of 24%.

Descriptive statistics

The arithmetic mean and standard deviation were calculated for the study variables separately, and the result was as follows:

First: Dimensions of the independent variable (information systems)

Table (5): Arithmetic means and deviations for information systems dimensions

It is clear from Table (5) that the arithmetic mean of the independent variable, information systems as a whole, is (3.57), and that the highest dimension was (networks), with a arithmetic mean of (3.9) and a standard deviation of (0.71), and that the dimension (software) had a arithmetic mean of (3.09), which is the lowest arithmetic mean among Dimensions of the independent variable: This indicates that the level of application of information systems dimensions is high in the company under study

Second: The dimensions of the dependent variable: supply chain integration

The dependent variable (supply chain integration) was measured through the (customers) dimension, by conducting descriptive statistical analysis by calculating arithmetic averages and standard deviations, and this is what the following table explains it:

Table 6. Arithmetic means for the dependent variable supply chain integration

Sample orientation	t test	Relative importance	standard deviation	Arithmetic mean	I totally disagree	I do not agree	neutral	I agree	Totally agree	Question number	Dimensions	variable
					العدد	العدد	العدد	العدد	العدد			
I agree	6.123724	80%	0.816497	4	0	1	5	12	7	س18	Customers	Dependent variable: supply chain integration
Totally agree	8.228599	86%	0.802081	4.32	0	1	2	10	12	س19		
I agree	6.123724	80%	0.816497	4	0	1	5	12	7	س20		
I agree	9.287433	83%	0.6245	4.16	0	0	3	15	7	س21		
Totally agree	8.980599	87%	0.757188	4.36	0	0	4	8	13	س22		
	9.982298	83%	0.585036	4.168	المتغير التابع تكامل سلسلة التوريد							

It is clear from Table (6) that the arithmetic mean of the dependent variable, supply chain integration, in its dimension (customers) was (4.16). This indicates the interest of the company under study in the dimensions of the supply chain and its high and sound level of implementation and application .Interpretation of the results for each paragraph of the questionnaire:

First: The independent variable (information systems) and its dimensions (human resources, equipment, software, databases, networks)

Human Resources: The arithmetic mean and standard deviation of the dimension (Human Resources) and its paragraphs were calculated as shown in Table (5), which indicates Paragraph No. (1), which states: “The company provides its employees with the necessary training and qualifications to deal with computers on a regular basis.” It had the highest

arithmetic mean of (4) and a standard deviation of (1.0), which is higher than the general arithmetic mean (3.79). As for paragraph (3), which stated, "The company trains its employees to use advanced software on a regular basis," it had the lowest arithmetic mean of (3.79). (3.6) and with a standard deviation of (0.9), this indicates the company's interest in training its employees on computers on a regular basis.

Equipment: The arithmetic mean and standard deviation of the dimension (equipment) and its paragraphs were calculated as shown in Table (5), which indicates that Paragraph No. (6), which states "The company relies on high-quality computers to keep up with work requirements," had the highest mean. An arithmetic mean of (3.7) and a standard deviation of (0.8). As for paragraph (7), which stipulated, "The number of computers is proportional to the nature of their work," it had the lowest arithmetic mean of (2.9) and a standard deviation of (0.8). This indicates that the company is constantly seeking to use High-quality computers to keep pace with business requirements, which gives them a competitive advantage

Software: It is clear from Table (5) that Paragraph (11) which states: "Software is characterized by ...It was used by the company easily and modified as desired. It had the highest arithmetic mean (3.3) and standard deviation (1.14), which is higher than the general arithmetic mean (3.0). As for paragraph (10), which stated: "The company relies on special software to follow up the work of its departments and follow up with clients." In particular, it obtained the lowest arithmetic mean of (2.9) and a standard deviation of (0.93), which indicates that the company has flexible software that can be modified at any time, and that the company lacks software for following up on the work of its departments and customers.

Databases: Table (5) indicates that paragraph (13) which states "The company updates its databases continuously and periodically" had the highest arithmetic mean of (3.8) and a standard deviation of (0.86), which is higher than the general arithmetic average (3.6) Paragraph (12) had the lowest arithmetic mean (3.4) and deviation (0.95) and stated, "The company relies on databases to make strategic decisions." This indicates the company's interest in updating its databases periodically and continuously.
Networks and communication: Table (5) indicates that paragraph (15), which states, "The company uses modern means of communication such as e-mail and internal Internet networks," had the highest arithmetic mean of (4.4) and a standard deviation of (1), which is higher than the average. General arithmetic (3.9). Paragraph (14), which stated, "The company owns special and advanced linking equipment between computers for the purpose of transferring and exchanging data," had the lowest arithmetic mean (3.2) and standard deviation (1.0), which indicates the company's interest in modern means of communication.

Second: The dependent variable (supply chain integration)

This is done through the dimension (customers) and identifying the level of responses of the study sample members to the items related to the dimension through descriptive statistical analysis by calculating arithmetic averages and standard deviations as shown in Table (5) referred to above and as follows:

Table (6) indicates that paragraph (22), which states, "The company is keen to gain customer satisfaction," obtained the highest arithmetic mean of (4.36) and a standard deviation of (0.75). As for paragraphs (18), which states, "The company seeks to improve customer satisfaction." "Customer" and (20) which stated "The company adheres to the delivery dates specified with customers" received the lowest arithmetic mean of (4) and were equal to the same standard letter (0.816.). Which indicates that the company always seeks to gain customer satisfaction

Testing the hypothesis and interpreting the results

The researcher tested the research hypothesis through the T test calculated as shown in Tables (4) and (5) and compared the results with the tabular T test at 24 degrees of freedom.

Testing the main hypothesi:

H1: "There is a statistically significant correlation between the dimensions of information systems and the dimensions of the supply chain in the General Company for Gas Filling and Services at a significant degree of 0.05." To examine this hypothesis, the researcher conducted a calculated T test, and by comparison with the tabular T, the results showed (the presence of a statistically significant correlation between the dimensions Information systems and supply chain dimensions at a significant degree of 0.05 in the General Company for Gas Filling and Services. Thus, the main hypothesis was accepted

The first sub-hypothesis:

H1.1: "There is a statistically significant correlation between human resources and supply chain integration in the General Company for Gas Filling and Services"

To examine this hypothesis, the researcher conducted a calculated T test and compared with the tabular T test, the results showed (there is a statistically significant correlation between human resources and supply chain integration in the General Company for Gas Filling and Services. Thus, the first sub-hypothesis was accepted

The second sub-hypothesis

H1.2: "There is a statistically significant correlation between equipment and supply chain integration in the General Company for Gas Filling and Services." To examine this hypothesis, the researcher conducted a calculated T test and compared with the tabular T, the results showed (there is a statistically significant correlation between equipment and supply chain integration in... General Company for Gas Filling and Services. Thus, the second sub-hypothesis was accepted.

The third sub-hypothesi:

H1.3: "There is a statistically significant correlation between software and supply chain integration in the General Company for Gas Filling and Services".

To examine this hypothesis, the researcher conducted a calculated T test and compared with the tabular T test, the results showed (there is no statistically significant correlation between software and supply chain integration in the General Company for Gas Filling and Services(

Thus, the alternative hypothesis was rejected and the null hypothesis H0 was accepted: (There is no statistically significant correlation between software and supply chain integration in the General Company for Gas Filling and Services).

The fourth sub-hypothesi:

H1.4: "There is a statistically significant correlation between data sources and supply chain integration in the General Company for Gas Filling and Services"

To examine this hypothesis, the researcher conducted a calculated T test and compared with the tabular T test, the results showed (there is a statistically significant correlation between data sources and supply chain integration in the General Company for Gas Filling and Services. Thus, the sub-hypothesis was accepted).

The fifth sub-hypothesis

H1.5: "There is a statistically significant correlation between networks and supply chain integration in the General Company for Gas Filling and Services".

To examine this hypothesis, the researcher conducted a calculated T test and compared with the tabular T test, the results showed (there is a statistically significant correlation between networks and supply chain integration in the General Company for Gas Filling and Services) Thus, the sub-hypothesis was accepted.

The fourth section: results and most prominent recommendations

The researcher discusses the results drawn from the previous analysis of the variables mentioned in the third section, and then presents some recommendations based on the results.

First: Results of descriptive statistics: (1) The results of the study showed that the arithmetic mean for the independent variable, information systems as a whole, was (3.57) and a standard deviation of (0.64), and that the highest element was the dimension (networks), with a mean of (3.9) and a standard deviation of (0.71), and that the dimension (software) had the lowest arithmetic mean of (3.09) and a standard deviation (0.95) that indicates that the level of application of information systems dimensions is high in the company under study. (2) The results of the study showed that the arithmetic mean of the dependent variable supply chain integration in its dimension (customer) was (4.16) and the standard deviation was (0.58). This indicates the interest of the company under study in the dimensions of the supply chain and the level of its implementation and application in a high and sound manner. (3) The results of the study showed that there is a statistically significant correlation between the dimensions of information systems and supply chain integration at the significance level ($\alpha <= 0.05$) in the company under study. (4) The results of the study showed that there is a statistically significant correlation between human resources and supply chain integration in the company. (5) The results of the study showed that there is a statistically significant correlation between equipment and supply chain integration in the company. (6) The results of the study showed that there is no statistically significant correlation between software and supply chain integration in the company. (7) The results of the study showed that there is a statistically significant correlation between data sources and supply chain integration in the company. (8) The results of the study showed that there is a statistically significant correlation between networks and supply chain integration in the company.

This result agreed with the study of Al-Tamimi, 2015, which showed that integration with customers was the most important among the indicators, followed by internal integration, and finally integration with customers, and it also agreed with the study of Vanichchinchai (2014), which showed that organizations that apply supply chain management practices and total quality management practices achieved a level higher than the company's supply performance. This result also agreed with the study of Mithas and Rust (2016), which showed that the focus on information technology strategy in the companies sampled by the study plays an important role in moderating the relationship between investment in information technology and company performance, and that a decrease in investment in information technology pushes companies To trade off between expanding revenues or reducing costs, while increasing investment in information technology forces companies to look binary at both revenues and costs.

This result agreed with the study of Ben Salah (2016), which showed a positive impact of supply chain management in its dimensions (the relationship between suppliers, intermediaries, distributors, and customer relationships) on improving the organization's performance.

Second: Recommendation

The study recommends to the General Company for Gas Filling and Services/Basra the importance of continuing to learn about the concept of information systems and the necessity of applying them in the ongoing competition processes, as the company's ability to implement

information systems in an appropriate manner gives it greater flexibility in facing environmental challenges, as the results of descriptive statistics showed that applying the dimensions of information systems Information was high in the company.

The study recommends increasing the company's senior leadership's awareness of the importance of supply chain integration as one of the core concepts in modern management

The study recommends that the company increase the number of computers to suit the nature of the work

We recommend that the company increase the training of human resources on advanced software and to keep pace with the rapid development taking place in this software

Third: Study prospects and future studies

This research relates to the extent to which information systems contribute to the integration of the supply chain in the General Company for Gas Filling and Services/Basra. Like any other research, our research was limited to a set of variables that we were not able to discuss in detail. Therefore, we believe that it represents a platform for future research that contributes to finding solutions to problems related to addresses. Different ones, including: Expanding the field of study to a group of productive institutions. Using expert systems in supply chain management. The role of enterprise resource planning programs in improving supply chain management

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