

# The effect of production logistics in achieving competitive advantage an analytical study of the opinions of a sample of workers in the general company for textile industries / in the hilla textile factory

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## ABSTRACT

Most of the organizations working to establish a foothold in competition with other organizations it is concerned first with defining the logistics activity as an organization's operations aimed at providing production supplies to achieve customer satisfaction, It is produced of goods and services, especially as the competitive pressures have multiplied with the emergence of globalization, the multiplicity of markets and products of foreign commodities compete with the local product and put the organization in front of great challenges. The logistical activities contributed to reducing the cost and quality of the product and gave the organization a kind of flexibility in dealing with the product, the prospects for creativity and innovation in front of the employees resulted through an integrated and homogeneous arrangement that helped the organizations to achieve the expansion of the markets and increase the market share thanks to the speed provided by the logistics activities in providing goods and services that suit customers and fall at their desires.

**Keywords:** Production logistic, Competitive advantage

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## 1. Introduction

The term logistics is one of the modern terms have entered into economic fields, including the field of production and its management the progress of production organizations is measured by the extent of their interest in logistical management, to an advanced level of competition with other organizations working in the same field. The modern aspects in the production process and facing the fluctuations of the production environment is the serious concern for providing the requirements of the production process, whether it is related to providing trained manpower or preparing production factors from tools, machines, and raw materials, and that is what is meant by your logistics that precede the production process[1-3].

### 1.1. The problem of research

As result of the increase in interest in recent years in the logistics strategy in factories and production companies, and considering that this strategy is the way to achieve success by providing the requirements and needs of the production process the logistical record of the first concerns of the leaders of companies and production plants, since it is concerned with providing the requirements that the factories and companies need before starting work, this came on top of the concerns of businessmen, company managers and leaders, As the relationship of logistics to achieving goals is great in terms of setting the organization on the path to success. In addition, your production logistics is precisely that strategy that seeks to provide the requirements of the production process in terms of providing production requirements down to the stage of delivering the product to its final form. Based on the above, the study problem embodied in answering the following questions:

What is the extent of the researched company's understanding of production logistics? What is the level of interest of the researched company in your production logistics?

## **1.2. Importance of research**

There is no doubt that the importance of the study is mainly embodied in the importance of logistics as a strategy that seeks to improve the level of performance of productive companies, and improve production and overcome difficulties in front of goods and services to reach the customer by following the scientific pillars to achieve a scientific construction of the production process, by using logistical tools, the study derives its importance in terms of the results it will reach and the notification of those in charge of the production process to implement.

- 1- The results of the study will constitute a criterion for developing plans to manage the production process by applying the requirements of your production logistics and its impact on competitive advantage.
- 2- The study clarifies the entrances to managing your production logistic and its impact on the volume of production of the researched company by placing the practical results in front of those responsible for production management in this company.

## **1.3. Objective of research**

The research aims to

- 1- Identify the reality of implementing your production logistic in the researched company.
- 2- Determine the dimensions of your production logistics.
- 3- Defining the dimensions of the competitive advantage.
- 4- Explaining the relationship between your production logistics and competitive advantage in theory and statistically
- 5- Knowing the requirements for the application of your production logistic in the researched company and what are the ways to provide these requirements to ensure the continuity of production at an escalating pace and to ensure a certain competitive position.

## **1.4. Hypothesis of research**

A set of main and sub-hypotheses was formulated to test the strength and impact of your production logistics on competitive advantage, as follows:

The first main hypothesis: (There is a significant and significant relationship between your production logistics and the competitive advantage with its indicators).

The second main hypothesis: (There is a significant influence between your production logistics and the competitive advantage with its indicators).

## **1.5. Limits of the study**

- 1-The boundaries of the spatial study: The limits of the spatial study are the General Company for Textile Industries / Hilla Textile Factory
- 2-Included human resources: The study was applied to a sample of employees in the General Company for Textile Industries / Hilla tissue laboratory

## **1.6. Production logistic concepts and theories**

The concept of logistics is one of the recent aspects that have emerged in management, which deals with economic challenges, especially after the emergence of modern technology and informatics.

It generally a mixture of integrated management models that seek to achieve a balance between goods and services, and between customers by organizing various economic activities, starting from the production of a good or service to the hands of customers ,this is because all organizations seek customer satisfaction, through which they achieve the highest profitability, and this is the main goal of every organization of the organizations, here it is necessary to review the emergence of this term and its spread in economic circles.

Sources indicate that the concept of logistics appeared for the first time in the field of sport and the military field, and most sources indicate that the concept appeared militarily during World War it is directly concerned with the administrative science of battle performance[4, 5]. The study of logistics in terms of historical facts, as the term logistics, was used in the applications of the French army in 1905 it aims to ensure that supplies, ammunition ,and other materials related to army consumption arrive in a timely and in the best possible way, then it became popular in the Second World War, as it was the most important factor for the success and victory of the Allied armies, and as soon as the war ended various studies have appeared in Logistics in other fields of

business such as economics, production costs, marketing, storage, manufacturing, production, and all activities related to economics business.

The researcher finds that the term logistics is still common in war operations and always used by the term (logistical operations in support of the armed forces, especially in the US Army) this still used by the US forces in its numerous wars, as independent departments have been allocated for logistical operations. and since most of the organizations in the world use certain production techniques, it became impossible to achieve competitive advantage without reducing logistical activities and their costs, these activities relate to activities supporting the production process, such as purchasing, importing, transporting, storing, or insuring the materials used in the production process and all operations related to production affairs such as packaging, merchandising, storage, and other activities.

Many definitions of logistics were mentioned, and writers and researchers disagreed about the concept of logistics, and Table 1 shows us some of these concepts according to their chronology:

Table 1. some contributions of writers and researchers on the concept of logistics

Researcher's name	Concept
1 [6]	It is the sequence of events for customer satisfaction that includes catering, production, distribution, waste management, transportation, and storage activities
2 [7]	It is an integral part of the supply chain as it plans, applies, and monitors the flow of goods, services, and information from the producer or source service to the end customer effectively to ensure that customers' requirements are met.
3 [8]	It is the process of the flow of information, materials, and money between customers and suppliers.
4 [9]	It is the process of planning, implementing, and controlling the efficient and effective flow of raw materials, final goods, and related information from the production center to the consumption center To achieve customer satisfaction.

Through the above definitions, the researcher finds that the concept of logistics does not go beyond the accurate and scientific process of surrounding the commodity or the service from the source of the supply through all the stages of the rise in value to the point of its consumption and circulation according to thoughtful processes that achieve the best service for customers. This is what the researcher can extract from the previous definitions. all organizations seek to reach the top of performance through the development of logistical operations, Logistics There are two options, the first of which is to maintain the level of excellence reached by the organization, which is to provide the best logistics services in production, and achieving distinction over the rest of the organizations, and the other possibility is the deterioration of performance, leading to a decline in the emergence of another organization to replace this organization.

The types of logistics at the organization level are as follows[10]:

A- Supply logistics.

B- Production logistics.

C- Distribution logistics.

D- Reverse logistics (return of waste)

A-Supply Logistic

Processing logistics is defined as the preparation and execution of all tasks related to the flow of goods and material from the supplier to meet the needs of the organization using

transportation for production and agreeing with the supplier on the time and place of arrival of the materials and their receipt by the purchase store[10].

#### B- Production logistics

It is part of the logistics chain which includes planning and controlling internal production logistics processes as well as internal production logistics procedures. It includes planning to supply raw materials and supplies required by the procurement logistics, and transporting finished products to distribution logistics. This term used to describe the logistical tasks related to production while ensuring continuity of product, the most appropriate and cost-effective manner Also, and production logistics is concerned with designing factories. Dacha to provide a fair flow of workers, goods, equipment, and information to ensure obtaining the highest productivity ratio at the lowest costs while knowing the logistical capabilities to absorb the production quantity.

#### C- Distribution logistics

It is defined as the planning, implementation, and control of the physical flow of goods, services, and information associated with them from the point of origin to the point of consumption using the appropriate means of transportation to meet the needs and desires of customers to achieve profits, and this includes the arrival of the right product to the right customer at the right time and place[11, 12].

D- Reverse logistics (return of waste). Reverse logistics is defined under the term product return management which is classified as the activities that include the management and disposal of all used products the components and materials are under the responsibility of the manufacturing organization, Product return management aims to recover as much economic value as possible, leading to a reduction in the final quantities of waste.

### 1.7. The importance of logistics

Whenever we talk about your logistics activities, this means that we are talking about material-related activities and it has become clear to the management and leadership levels that the importance of your logistics can be demonstrated through the following:

A- Achieving the competitive advantage depends entirely on the ability to compete with increasing profits, starting from customer service and reducing costs, to developing a special strategy to achieve competitive advantage.

B - Logistics reduces production costs.

C- Maintain business effectiveness and customer service.

D- The logistics business is the factor that helps the organization expand in the markets and increase the market share to achieve the highest profits if we take into consideration the growing desire of customers to obtain a quick and appropriate response to its products in light of the large volume of production and the size of market developments. (Mustafa: 2012: 82).

E- Rapid response to customers within the market and fulfil their desires to obtain the goods as soon as possible, the flow of information, processing operations, transportation, and storage area at the top of the logistics management tasks (Mustafa: 2012: 84).

The concept of production logistics constitutes those processes that support the production process through the facilities it provides to carry out manufacturing operations for the commodity or service, so the availability of raw material from materials and manpower his constitutes the starting point towards the completion of the production process, as we find in all economic activities that the logistical operations are those processes that prepare for the exercise of the production activity (Schulte: 2009: 374).

The idea of logistics is an integrated and unified view of serving the customer and satisfying his desires according to the requirements.

The market as a unified administration as it is considered a cross-section of the organization It passes all sections of the organization and needs it all its departments (processing - production - distribution - the return of waste) are somewhat similar to its services in the accounts and finance department which also serves all departments of the organization and your production logistics is a subsystem of production that includes the following duties: (Huber: 2012: 91).

A- Strategic duties.

1. Skilled personnel working in the production program .
2. New product development .
3. Determine the stages of production.

4. Planning the internal site of the factory.

#### B - Operational duties

1. Planning and controlling the production program.
2. Determining precisely the preparation of materials and other means to plan and direct the transportation, loading, unloading and storage required by the production process. (Huber: 2012: 92)

## 2. Competitive advantage

The world of business administration has witnessed rapid developments at the academic and scientific levels, and departments have become obligated to face problems, which obstruct work according to scientific strategic dimensions aimed at addressing what is in the way of work, internally and externally.

### 2.1. Concept of competitive advantage

Putting the competitive advantage strategy into practice is a sure guarantee to strike a balance between the activities carried out by the organization, not in the short term Rather, in the long term as well, senior management in organizations seeks to invest the competitive advantage through research and investigation, which makes the organization at the forefront of competing organizations. Under competitive advantage, windows open towards creativity, innovation, and sound assessment of things in pursuit of competition that often takes precedence over success.

Table 2. It has some contributions of writers and researchers on the concept of competitive advantage

	<b>Researcher's name</b>	<b>Concept</b>	<b>concentration</b>
1	Macmillan & Tampo: 2000: 81	It is the ability of the organization to achieve superiority over competitors in the field of competition by using appropriate means.	Competitiveness
2	Poul: 2004: 160	These are the efforts made by the organization to create common work values that give it the opportunity to obtain a work force with a high sense of loyalty and belonging that works to improve productivity in quantity and quality.	sentimentality
3	VanZyl: 2006: 19	The benefit realized in the event that the organization can offer a competitive product that allows it to maximize its profitability.	Profitability
4	Icfa: 2007: 178	It is the ability to produce goods and services at a cheaper cost than other organizations, and organizations in general are working on the globalization of these processes to take advantage of these opportunities.	Profitability

The researcher discovers from the above-mentioned definitions that the process of legitimate competition between organizations in finding the best ways and means to achieve customer satisfaction in the product In general, whether it is a good or service is the essence of the competitive advantage, so the closest definition is among the definitions we mentioned it is what achieves the customer's satisfaction in the good or service through its integration with its low cost if we know that the customer is seeking to obtain his needs elaborate and at the lowest prices.

## 2.2. The importance of competitive advantage

A- The importance of competitive advantage is determined through the development and renewal of resources and distinct competencies according to the latest theories of economists, if this advantage is sustainable and is related to the organization's ability to maintain the degree of excellence, as Hill and Jones went to that. (Bernard: 2012: 21).

B- Its importance is known by the presence of the following three criteria:

1-The price factor, quality, and cost. Consequently, competition defined by these three factors.

2-market. As competitiveness is defined by the organization's performance in the market compared to its counterparts.

3-Organization behavior. Through it, competitiveness is evident as its business is witnessing continuous improvement and is subject to permanent self-evaluation through the application of competitive advantage. (Jean-Louis: 2012: 9).

## 2.3. The goals of competitive advantage

Organizations of different nature of their work seek to achieve competitive advantage because the competitive advantage linked to the organization's capabilities to produce goods and services it is different from other organizations of the same nature of work, and among the most prominent objectives of competitive advantage are: (Arregle & Quelin: 2001: 76).

A- Possession of a competitive advantage.

As the competitive advantage is the main goal of every organization and it is established once the organization reaches the discovery of methods more effective than those used by competitors, Competitors so that the application of what you discover practically on the ground or in the field of production, or more precisely, the presence of any case of creativity In its broad sense, in a continuous dynamic process and addressing internal and external problems, it is the path of competition and the achievement of excellence that is characterized by the continuity that maintains the balance of the organization among the rest of the organizations, this enhances the organization's ability to achieve better production because the process of competition reflects positively on the stage of producing goods or services[13].

B- That the organization acquires a new position in competitiveness

This is because achieving competitive advantage depends on an analysis of the competitive environment and to achieve the appropriate positioning of the organization, it strives to find out what is going on in the work environment, of the variables at the geographical level, for example (the geographical extension in which the organization competes and the extension of complementary or alternative sectors as well as the degree of integration in the organization and the extent of the part in terms of the diversity of products and customers) and the development and improvement of production factors in terms of quantity and type of product[14, 15]. The researcher finds that knowing the competitive environment and detailed awareness of its variables helps to build new plans for production or the quality of production or for the means and methods of delivering the goods or service to customers, taking into account the low costs of it reaching the customer, as this constitutes the ultimate goal of each organization.

## 2.4. The characteristics of competitive advantage

The definitions that we have mentioned, which explain the competitive advantage, make it necessary for the organization to take into account the determination of the characteristics of the competitive advantage. Therefore, knowing the characteristics is of great importance in the search for the features that distinguish the competitive advantage, namely:

A- To be continuous and sustainable, meaning that the organization has a long-term strategy in the sustainability and continuation of the momentum of competition by drawing plans that ensure the development of the competitive advantage for a long time and not to achieve the closest goal.

B- that competitive advantages are often characterized by relative proportions according to competitors in the arena or according to periods of competition which makes achieving a competitive advantage a very difficult matter, as the arena is full of competitors from one side and another, and the ability to negotiate is a complex matter if the other competing organizations are taken into consideration. (Robert and David: 2008: 156).

C- Renewal of competition. Competitive advantage must be renewed according to the requirements of the external and internal environment and the requirements of the organization's conditions, capabilities, material and human resources, as not all organizations have the same ability to sustain the momentum of competition.

D- Flexibility: The competitive advantage must be highly flexible according to considerations imposed by the work environment and determined by the capabilities that govern the work of the organization.

E- Advantage and objectives. Here, the importance of the competitive advantage appears in comparison with the goals to achieve and the results of the competition process in the short and long terms.

The researcher finds that the distinctive features or characteristics of a competitive advantage differ according to the circumstances surrounding the organization, the nature of the organization's work, and the type and quantity of goods and services it produces with the size of its spread in the market and the multiplicity of its customers' tastes, each of the characteristics that we have mentioned is important to the organization as much as it makes progress in its field of work.

### 3. The applied side of the research

A-Analyzing and testing correlation relationships between study variables

The study in this topic relies on the statistical laboratory (Z - TEST) to test the hypotheses of correlation between your production logistics in its five dimensions (production program planning, quantity planning, time and energy planning initiation of the order, order control) and between the competitive advantage, as the test result will lead to accepting the correlation hypothesis when the calculated Z value is greater than its tabular counterparts of (1.96) at a significant level (0.05), thus accepting the hypothesis with 95% confidence. What confirms this is that the value of the simple correlation coefficient between the two variables is accompanied by the results of the analysis for the SPSS V program of 25 marks (\*\* or \*). As for the nature and strength of the link between your production logistics and its dimensions and the competitive advantage, the study relied on the value of the simple correlation coefficient Pearson, and the results of the statistical laboratory for the correlation hypotheses were as follows:

Test the first main hypothesis of the study: For the researcher to express an accurate opinion about the validity of the first main hypothesis of the study that (there is a significant and significant correlation between your production logistics and the competitive advantage with its indicators) from testing the secondary hypotheses emanating from it, and this is what shown in Table 3.

Table 3. Testing of the scondry hypotheses

	Approved The Independent	Competitive advantage		Cost		the quality		Flexibility		Delivery time	
		r	Z	r	Z	r	Z	r	Z	r	Z
1	Planning the production program	0.66**	5.06	0.55**	4.22	0.50**	3.8	0.63**	4.85	0.59**	4.5
2	Quantity planning	0.64**	4.92	0.61**	4.7	0.56**	4.33	0.54**	4.11	0.53**	4.03
3	Time and energy planning	0.70**	5.37	0.57**	4.37	0.59**	4.51	0.66**	5.08	0.61**	4.7
4	Proceed with the order	0.77**	5.95	0.65**	5.01	0.63**	4.84	0.64**	4.89	0.75**	5.73
5	Order control	0.82**	6.28	0.75**	5.77	0.64**	4.92	0.71**	5.48	0.72**	5.51
6	production logistic	0.87**	6.69	0.76**	5.84	0.70**	5.4	0.77**	5.92	0.78**	5.96
0.05 at the tabular level		Z= 1.96				n=60					
Means acceptance of the hypothesis with a confidence level of 95% *						Means acceptance of the hypothesis with a confidence level of 99% **					

Testing the first main hypothesis states that (there is a significant significant correlation between your production logistics and competitive advantage with its indicators)

It is clear to us from the results of Table (3) and the data of Figure (3) that:

A- There is a strong and positive correlation between your production logistics and competitive advantage, as the value of the correlation coefficient reached (0.87 \*\*), which is a high value that reflects a positive statistically significant relationship with a confidence level (99%) This relationship explains that the more the researched company is interested in production logistics, the greater its ability to achieve competitive advantage, which is a significant relationship, as the calculated value of (Z) reached (6.69), which is greater than its tabular value of (1.96) at the level of significance of (0.05) and ( 2.576 at the level of significance of (0.01).

B- The existence of a strong and positive correlation between your production logistics and cost, as the value of the correlation coefficient, reached (0.76 \*\*), which is a high value that reflects the existence of a positive statistically significant relationship, as the level of confidence reached (99%), which indicates that the more the research company is interested in your production Its ability to optimize costs increased It is a significant relationship, as the calculated value of (Z) reached (5.84), which is greater than its tabular value of (1.96) at the level of significance of (0.05) and ((2.576) at the level of significance of (0.01).

C-There is a moderate and positive correlation between your production logistics and quality, as the value of the correlation coefficient reached (0.70 \*\*), which is a medium value that reflects a positive statistically significant relationship, as the level of confidence reached (99%), meaning that the more the company in question is interested in your production logistics, the greater its capacity On achieving quality, which is a significant relationship, as the calculated value of (Z) reached (5.4), which is greater than its tabular value of (1.96) at the level of significance of (0.05) and (2.576 at the level of significance of 0.01).

D-The existence of a strong and positive correlation between your production logistics and flexibility, as the value of the correlation coefficient, reached (0.77 \*\*), which is a high value that reflects a positive relationship, statistically significant with the level of confidence (99%), and this relationship explains that the more the researched company is interested in your production logistics, the greater its ability to achieve flexibility. At the level of significance of (0.05) and ((2.576) at the level of significance of (0.01).

E-There is a strong and positive correlation between your production logistics and delivery time, as the value of the correlation coefficient reached (0.78 \*\*), which is a high value that reflects the existence of a positive relationship with statistical significance as the level of confidence reached (99%), and accordingly, the more the researched company is interested in your production logistics, the more its ability to deliver on time increases. The level of significance of (0.05) and ((2.576) at the level of significance of (0.01).

Based on the aforementioned, accept the first main hypothesis, which states that: (There is a significant correlation between your production logistics and competitive advantage with its indicators)

From the aforementioned, the positive correlation between your production logistics and competitive advantage can explained by saying that the increased interest of the study sample company in the dimensions of your production logistics will positively affect the competitive advantage.

B-Analysing and testing the influence trends between study variables

This topic aims to test the effect of the independent variable (production logistics) individually and collectively on the dependent variable (competitive advantage), in light of simple and multiple regression analysis and the statistical laboratory (T) to determine the significance of the parameters of the simple regression equation and statistical test (F) to test the effect hypotheses.

Test the second main hypothesis, which states that: (There is a significant impact relationship between your production logistics and competitive advantage with its indicators).

In light of this hypothesis, an indicative relationship was formulated between the true value of the variable (Y) competitive advantage and your production logistics (X). The regression equation was as follows:

$$Y = - 4,080 + 1,473 * X$$

Table 4. Estimate the parameters of the simple linear regression model to measure the impact of your production logistics on competitive advantage.

Dimensions	Constant		Value (T)		Value (F)	
	Production Logistics (x)		To account	Tabular	To account	Tabular
Competitive advantage (Y)	A	B	To account	Tabular	To account	Tabular
4.080	1.473	13,51	2,02	182,54	4,0012	0,759
n=60	The level of significance = 0.05					



It is clear to us from the results of Table No. (4) That:

The calculated value of (T) was approximately (13.51), which is greater than its tabular value of approximately (2.02) at the level of significance of (0.05). This indicates that the regression coefficient ( $B = 1.473$ ) is fixed at the mentioned level of significance, that is, a change of one unit of your production logistics affects the competitive advantage by approximately (1.473), and this means that the simple linear regression model is evident. While the calculated value of (F) was (182.54), which is greater than its tabular value of (4.0012) at the level of (0.05). Accordingly, your production logistics (X) have a significant effect on competitive advantage (Y). The value of the interpretation coefficient ( $R^2$ ) was approximately (0.759), and this indicates that your production logistics (X) explains (75.9%) of the changes in the competitive advantage (Y). As for the remaining percentage, it is due to the contribution of other variables outside the limits of the current study.

#### 4. Conclusions

The term logistics is one of the recent manifestations that have posed a challenge in the economic aspect and organizations sought to subjugate it in terms of its applications on the production aspects in most organizations, as an activity that works to provide goods and services, which speeds up the production process and reduces effort and time.

Logistic organizations have applied to most of their activities, including the (production) stage, and it has been termed as production logistics, which is those activities aimed at preparing the appropriate ground for production. In terms of raw materials and others, planning them in a way that leads to a level of legitimate competition between organizations and providing goods or services in a manner that achieves customer satisfaction.

The group of activities practiced by your production logistics take a scientific and objective sequence, they are two processes of planning and implementing production programs, starting from planning and ending with customer satisfaction through a series of measures that the organization takes in managing your logistics operations, especially in your production logistics.

The generalization of this study to the departments responsible for the production department in the Hilla tissue laboratory and serious coordination in the application of the paragraphs of this study, which indicated in the theoretical and practical sides the existence of a correlation and the impact of a close between the basic variable (production logistics) and the sub-variable (competitive advantage).

The Company's work must reduce the processing time by choosing suppliers who supply them on time. The importance of the company's work to calculate the required energy accurately because of its great importance in the processing process by the company for its customers.

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