THE IMPACT OF LOGISTICS PERFORMANCE ON COMPETITIVE ADVANTAGE: THE CASE OF FREIGHT TRANSPORTATION IN EGYPT

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Abstract

This research aims to figure out areas of negative performance in logistics provided to customers, identify the relationship between logistics performance and competitive advantage in the Egyptian logistics field and provide solutions to challenges facing freight transportation in Egypt. Correlation and regression analysis were conducted to test the research hypotheses. Results showed that the impact of logistics performance changes according to the competitive advantage considered in the company. Thus, logistics company should determine the strategy they will follow to be able to consider the logistics performance practices that they need to focus on.

Keywords: Logistics Performance, Freight Transportation, Competitive Advantage.

Introduction

The use of transportation is increasing nowadays due to the great usage of e-commerce. It was found that e-commerce sales worldwide had increased by almost 50 percent from 2014 to 2016, and the forecast for 2020 predicts a threefold increase (Frehe et al., 2017). As these amounts of e-commerce orders must also be physically delivered to the costumers, the e-commerce growth is accompanied by an increase in freight transport and an increasing demand of logistics services in general.

Therefore, it becomes necessary to develop the transportation from being only a classic transport function to a strategic, cross-functional, and global discipline, as it becomes important in supplying production material to factories and distributing finished goods to warehouses and shops, and many other services, which means that logistics is playing a vital role in global economies today.

Additionally, the professionalization of logistics management, as well as the strong conviction that logistics contributes to economic wealth and costs savings, have changed the way logistics-related aspects are viewed. Consequently, the overall importance of logistics is increasing. Thus, innovative and up-to-date methods are needed to cope with new challenges in the field (A. von der Gracht and Darkow, 2013).

The research problem arises from the increasing use of freight transport due to the heavy reliance on e-commerce in sales nowadays. Such increasing demand by e-commerce was not met by sufficient and reliable logistics services, which caused negative effect on the services delivered to customers in several ways and by that negatively impact the companies' competitive advantage. Therefore, it becomes urgent to provide digital logistics services in several areas to be able to use less number of employees and minimizes areas causing dissatisfaction to customers to be able to improve companies' performance and gain competitive advantage.

Therefore, this research aims to figure out areas of negative performance in logistics provided to customers, Identify the relationship between logistics performance and competitive advantage in the Egyptian logistics field and provide solutions to challenges facing freight transportation in Egypt nowadays.

Literature Review

Logistics has evolved from a mere classic transport function to a strategic, cross-functional, and global discipline (Grant et al., 2006). Supplying production material to factories and distributing finished goods to warehouses and shops are prerequisites of highly fragmented value chains in global economies today. The increasing impact of logistics on a company's success and economic growth underlines the importance of future planning in this field. Supplying the world's population with food, daily goods, books, educational material, and medicine has become one of the key issues in fostering economic prosperity in developing and emerging countries, especially in rural areas (A. Carallo, 2013).

Additionally, the professionalization of logistics management, as well as the strong conviction that logistics contributes to economic wealth and costs savings, have changed the way logistics-related aspects are viewed. Disaster relief, humanitarian aid, and refugee camp supplies are some important areas which are handled by professional logistics nowadays. Consequently, the overall importance of logistics is increasing. Thus, innovative and up-to-date methods are needed to cope with new challenges in the field (Berghaus, 2015).

Since logistics advanced from 1950s, due to the trend of nationalization and globalization in recent decades, the importance of logistics management has been growing in various areas. For industries, logistics helps to optimize the existing production and distribution processes based on the same resources through management techniques for promoting the efficiency and competitiveness of enterprises (Alessandro Vitale, 2014).

The role logistics system can play in reducing the environmental impact of industries has not been extensively researched. It is especially important to understand the relationship between operational effectiveness and environmental aspects. Both result from a number of decisions taken within the firm concerning both strategic and operative levels (Aronsson and Huge Brodin, 2006). Moreover, Logistics purposes may lead to increased levels of performance for the adopting firm and that complimentary firm resources may affect the degree of performance (Hazen and Byrd, 2012).

Logistics generates value through the accommodation of clients' delivery requests. Thus, logistics performance should indicate the organization's ability to deliver goods and services when required at acceptable cost in the quantities required by customers (Zelbst et al., 2008).

Logistics performance can be viewed as a subset of the broader concept of organizational output (Duong and Paché, 2016). The most traditional logistics performance is based on the creation of time and place utility, while the attributes of an organization's product or service offering that lead to utility creation through logistics activities, which are reflected in seven-R formula. It refers to the organization's ability to deliver the right amount of the right product at the right place at the right time in the right condition at the right price with the right information (Lee et al., 2016).

Logistics performance is defined as the degree of efficiency, effectiveness, and differentiation linked with the accomplishment of logistics activities (Mentzer et al., 2004). The logistics function as a whole should strive to reduce the ratio of resources utilized against derived results (efficiency), accomplish pre-defined goals (effectiveness), and gain superiority in comparison with competitors (differentiation) (Tuan, 2017).

The key element in a logistics chain is transportation system, which joints the separated activities. Transportation occupies one-third of the amount in the logistics costs and transportation systems influence the performance of logistics system hugely. Transporting is required in the whole production procedures, from manufacturing to delivery to the final consumers and returns. Only a good coordination between each component would bring the benefits to a maximum (Erik Svanes, 2010). Without well-developed transportation systems, logistics could not bring its advantages into full play. A good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality. The improvement of transportation systems needs the effort from both public and private sectors. A well-operated logistics system could increase both the competitiveness of the government and enterprises (Klosster, 2009).

Logistics and transport increasingly play a pivotal role in international trade relations. The Logistics Performance Index (LPI) analyses differences between countries in terms of customs procedures, logistics costs and the quality of the infrastructure for overland and maritime transport (Alessandro Vitale, 2014). Furthermore, the World Bank's Logistics Performance Index shows that Egypt has significantly improved its logistics performance

over the past few years, with the country moving from 92nd in 2010 to 57th in 2012 and showing improvement in all indicators obtained reveal that improvements in any of the components of the LPI can lead to significant growth in a country's trade flows. Specifically, LPI components are becoming increasingly important for international trade in many countries in such as, Africa, South America and Eastern Europe.

The transport sector in Egypt faces numerous other problems as well. Recent reports suggest fuel shortages are resulting in long queues of cars, taxis and trucks. Most of Egypt's territory has been affected, but the problems are particularly severe in the south. Even if the Government is able to secure of the International Monetary Fund (IMF) loan, the Government will then be under pressure from the IMF to phase out US$14.5 billion a year in fuel subsidies as part of its austerity programmer. Fuel could therefore become an increasingly serious issue. Despite the current situation, Egypt's transport infrastructure is in relatively good condition, compared to that of its African peers (Loayza and Odawara, 2010).

Transport routes in Egypt are mainly focused on Cairo and also follow settlement patterns along the Nile. The road transport network is supplemented by good inland water connections along the Nile as well as a good rail network. In addition to the sea ports, a network of river transport across the Nile Delta and its tributaries facilitates the transport of goods and commodities (Rundh, 2009).

To unlock growth and profitability in a challenging sector, transportation and logistics companies need to make bolder and more astute strategic choices than ever before. The sector's checkered history of value creation is counterbalanced by compelling lessons from successful players in a range of transportation and logistics industries, both pre- and post-crisis. For all of the upheaval facing the sector, a number of powerful megatrends will create unprecedented opportunities to enter new markets and redefine existing business models. The asset intensity and geographic breadth of transportation and logistics companies will reward granular fact-based decisions about the markets in which to play, city by city, route by route. This is an opportune moment for executives in the sector to challenge whether their strategy will meet and outperform market expectations (Bisantz, 2008).

In today's global marketplace, maintaining a competitive position is a principal concern. The face of the competitive arena has changed dramatically due to technological innovations and economic uncertainties. Several industries have developed from slow moving, stable oligopolies to hypercompetitive environments identified by powerful and rapid competitive moves, in which competitors strike rapidly, unpredictably, and unconventionally and advantages are quickly created and eroded. Recent research has gone further and implies that, generally, periods of sustained competitive advantage have shortened over time. This novel reality, therefore, defies most industries and even the most seasoned executives (Esper, et al., 2007).

In response, several companies eager to compete incorporated such strategic initiatives as price manipulation, product improvement, and reduced design-to-shelf cycle time, only to realize that these strategies were copied rapidly by competitors. Today though, organizations have concentrated on delivering customer value through logistics as a method for staying competitive, since alterations in promotion and price may be more rapidly duplicated. Substantially, companies have begun to enhance their logistics capabilities as a source of competitive advantage (Esper et al., 2007).

Much has been documented on a firm's capability of creating a competitive advantage through strategy development and execution. A survey of the existing literature proposes that research in strategic planning has taken two widely accepted paradigms. The market-driven view, grounded primarily on Porter's framework (Porter, 2011), stresses that advantage comes from externally-based opportunities. The concentration on strategic planning revolves around market positions, industry characteristics, and the nature of competition. Rather, other literature started development of the resource-based paradigm, which examines more internally to reveal competitive advantage in the firm's capabilities and resources (Esper et al., 2007).

It was claimed that the most successful companies, from profitability and growth point of view, are those companies with the elevated dynamic capabilities. In addition, they preserve that interplay between new strategic moves and actions for higher operational effectiveness and this is needed to keep up with the dynamic and altering business environment and to remain ahead of the competition. Hence, firms ought to position themselves strategically according to their unique, valuable and matchless resources and capabilities and should have a dynamic capability, which is the power to attain new forms of competitive advantage to achieve compliance with the

dynamism of the marketplace (Esper et al., 2007).

In today's extremely competitive environment, the two key issues arise for firms, firstly to permit the strategic utilization of capabilities to achieve, create and enhance value in the marketplace, and secondly to realize their performance in the framework of an integrated supply chain, and their capability of doing so under an altering and dynamic context for sustainability. As a boundary spanning function in the supply chain, logistics excellence has, thus, turned into a powerful competence and resource for competitive advantage for several firms. Companies currently oversee logistics as more than simply a source of cost savings and adopt it as a source of improving product or service offerings as part of the bigger supply chain process to generate competitive success. Furthermore, logistics is regarded as a resource area that both supports and permits new strategic moves on the market (Esper et al., 2007).

The trend of focusing on logistics has formed a desire for firms to enhance and sharpen their logistics capabilities. Such capabilities play a role in a firm's competitive advantage through generating cost leadership and differentiation. They aid firms accomplish the cost leadership section of competitive advantage through efficiency (cost and capital reduction) and the differentiation section of competitive advantage through effectiveness (customer service). Additionally, when enhanced, logistics capabilities supply firms with stronger competitive positioning because of the infrastructure-based nature of the capabilities, which may be challenging for competitors to replicate instantly (Esper et al., 2007).

Even though much literature has discussed a firm's ability to generate a competitive advantage through these logistics capabilities, it is presumed that the infrastructure-based nature of these capabilities nurtures competitive positioning. As above-mentioned, to sustain this competitive position, firms should retain the necessary logistics flexibility to act on to the nature of the altering marketplace. This necessitates that firms set up and maintain barriers that make logistics simulation tough by continual investment to nurture or improve the advantage, making this a long-run cyclical process. While the existing logistics capability literature concentrates on developing operational excellence through customer focus, supply management, integration, measurement, and information exchange, attention ought to also be focused on the capability of effectively learning new strategic approaches to logistics operations. In addition to the logistics capabilities mentioned before, a logistics learning capability necessitates to be added to the logistics capabilities literature for successful logistics-driven sustainable competitive advantage (Esper et al., 2007).

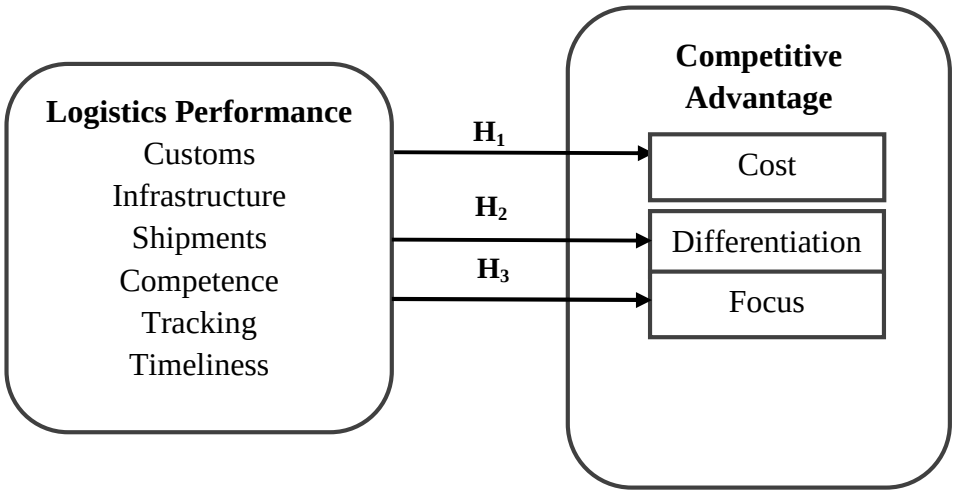
Methodology

This research aims to evaluate the impact of Logistics Performance dimensions, namely; Customs, Infrastructure, Shipments, Competence, Tracking, and Timeliness (Frehe et al., 2017) on achieving overall competitive advantage in the Egyptian freight transportation, including the Cost, Differentiation, and Focus dimensions (Porter, 2011) and this will be tested according to the statistical processes assigned below. Therefore, this research follows the descriptive explanatory research to describe the relationship between the independent and the dependent variable. In this research, data was collected through a questionnaire designed for logistics customers, through which the relationship between logistics performance and competitive advantage was analyzed. The researcher used the probability sampling method, where a total number of 460 customers using logistics services were collected, after distributing 750 questionnaires. This sample size is adequate for a 95% confidence interval (Saunders et al., 2016).

Quantitative research methods usually involve large randomized samples, more applications of statistical inference, and few applications of cases demonstrating findings. The objective of quantitative research is to determine the relationship between one thing (an independent variable(s)) and another (a dependent or outcome variable) in a population. Therefore, for the purpose of quantitative approach, customers had been targeted to respond to the research questionnaire as a quantitative tool for measuring the research variables. Customers of freight transportation are randomly selected from different companies performing logistics activities to avoid biasness in the sample under study.

In the questionnaire assigned, the questions were adopted to measure the dimensions under study by implementing a 5-point Likert -scale used for all responses with (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

The current research framework could be expressed using the following figure:



Hypothesis testing is a form of statistical inference that uses data from a sample to draw conclusions about a population parameter or a population probability distribution. Hypothesis tests are also conducted in regression and correlation analysis to determine if the regression relationship and the correlation coefficient are statistically significant. A goodness-of-fit test refers to a hypothesis test in which the null hypothesis is that the population has a specific probability distribution, such as a normal probability distribution. Nonparametric statistical methods also involve a variety of hypothesis-testing procedures. Thus, the research hypotheses could be stated as follows:

H_1: There is a significant positive relationship between Logistics Performance and Cost Advantage.

H_2: There is a significant positive relationship between Logistics Performance and Differentiation Advantage.

H_3: There is a significant positive relationship between Logistics Performance and Focus Advantage.

Results and Findings

To test the hypotheses stated above, the current research utilized correlation analysis and regression analysis. This entails testing the validity and reliability of the research variables in addition to presenting their descriptive analysis. After that, the hypotheses testing will be presented through the model constructed. As a preliminary step, the frequency tables are computed for the research variables.

Descriptive Analysis

In this section, frequency statistics will be conducted on the research variables. The variables under study are Logistics Performance – Customs, Infrastructure, Shipment, Competence, Tracking and Timeliness against Competitive Advantage Cost, Differentiation and Focus. A frequency table will be introduced for each variable where frequencies will be a measure of customers opinion towards factors of each dimension with a scale from 1 to 5, where 1 refers to "Strongly Disagree", while 5 refers to "Strongly Agree".

On examining the frequencies of Logistics Performance dimensions presented in Table 1 below, it was found that most of the sample under study rarely responded with "Strongly Agree" while the majority of the sample responded with "Disagree" in all the dimensions except for the customs where the majority responded with "Strongly Disagree".

Table 1: *Frequencies of Logistics Performance Dimensions*

#	Dimension	Frequency					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	Customs	150	59	115	117	19	460
2	Infrastructure	160	204	87	7	2	460
3	Shipment	149	198	67	43	3	460
4	Competence	77	222	157	4	0	460
5	Tracking	104	254	81	8	13	460
6	Timeliness	130	240	90	0	0	460

As for the Competitive Advantage dimensions, the frequencies of the sample responses are demonstrated in Table 2 below. Similarly, most of the sample under study rarely responded with "Strongly Agree" while the majority of the sample responded with "Disagree" in all the dimensions.

Table 2: *Frequencies of Competitive Advantage Dimensions*

#	Dimension	Frequency					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	Cost	142	196	116	6	0	460
2	Differentiation	94	150	127	77	12	460
3	Focus	142	203	53	43	19	460

Data Validation

Testing the research hypotheses requires the validation of the questionnaire data. To validate such data two tests will be conducted which are reliability and validity tests. The following section introduces the results of such tests.

Reliability Analysis

The questionnaire reliability is examined utilizing Cronbach's α by SPSS package. Table 3 displays the result of reliability evaluation of the questionnaire regarding to the dimensions. In the Cronbach's α analysis, an item is reliable if the value is greater than 0.7 (Hair et al., 2006). Apparently, the measured α for each dimension and the whole questionnaire is greater than the minimum acceptance level. Thus, it is comprehended that the adapted questionnaire retains the original reliability intensity.

Dimension	Number of Questions	Cronbach's Alpha
Customs	2	0.886
Infrastructure	2	0.756
Shipment	2	0.794
Competence	2	0.714
Tracking	2	0.764
Timeliness	2	0.721
Cost	5	0.891
Differentiation	5	0.916
Focus	5	0.920
Total Reliability	27	0.854

Validity Testing

In addition to reliability investigation, factor analysis is employed on the questionnaire results to evaluate dimensions and their items (Nikfalazar et al., 2014). To determine whether an item is worthy for attention or not, factor loadings are vital scales. A factor loading specifies the correlation between a variable and its factor that is corresponding to correlation between an item and its dimension. If factor loadings are greater than 0.4, they are essentially significant for consideration (Hair et al., 2006). As it is shown in Table 4, all items have factor loading values higher than 0.4 so that they are generally necessary for practical significance. Also, the average variance extracted (AVE) which is used to measure the factor validity is greater than 50% for all items. As a result, the adapted questionnaire is reliable and valid to measure logistics performance on competitive advantage. Thus, it is proven that the questionnaire's results are reliable and valid to use in the algorithm.

Table 4: *Data Validity by AVE and Factor Loadings*

Dimension	AVE	Items	Factor Loading
Customs	89.74%	Customs1	0.897
		Customs2	0.897
Infrastructure	80.41%	Infrastructure1	0.804
		Infrastructure2	0.804
Shipment	82.92%	Shipment1	0.829
		Shipment2	0.829
Competence	77.77%	Competence1	0.778
		Competence 2	0.778
Tracking	80.93%	Tracking1	0.809
		Tracking2	0.809
Timeliness	78.17%	Timeliness1	0.782
		Timeliness2	0.782
Cost	69.78%	Cost1	0.547
		Cost2	0.697
		Cost3	0.816
		Cost4	0.688
		Cost5	0.740
Differentiation	75.6%	Differentiation1	0.837
		Differentiation2	0.664
		Differentiation3	0.819
		Differentiation4	0.646
		Differentiation5	0.814
Focus	76.61%	Focus1	0.859
		Focus2	0.660
		Focus3	0.813
		Focus4	0.640
		Focus5	0.860

Hypotheses Testing

Testing the hypotheses under study will be performed by conducting Correlation matrix, as well as regression models.

Testing the Impact of Logistics Performance on Competitive Advantage Cost

A correlation matrix between Logistics Performance dimensions and Competitive Advantage Cost is introduced in the following Table 5, in which the value of Spearman's correlation is calculated. Results denote that the correlation coefficient between Logistics Performance - Customs, Infrastructure, Shipment, Competence, Tracking and Timeliness and Competitive Advantage Cost is -0.4, 0.223, 0.209, 0.065, 0.183, 0.518 respectively with P-value of 0.000 for all dimensions except for Competence with P-value of 0.163. These values indicate that there is a positive significant weak relationship between Infrastructure, Shipment, Tracking and Cost while there is an insignificant relationship between Competence and Cost. Also, there is a negative significant moderate relationship between Customs and Cost.

Table 5: Correlation matrix between Logistics Performance and Competitive Advantage Cost

		Customs	Infrastructure	Shipment	Competence	Tracking	Timeliness	Cost
Customs	r	1						
	P-value							
	N	460						
Infrastructure	r	.144	1					
	P-value	.002						
	N	460	460					
Shipment	r	.042	.297	1				
	P-value	.365	.000					
	N	460	460	460				
Competence	r	-.005	.140	.143	1			
	P-value	.920	.003	.002				
	N	460	460	460	460			
Tracking	r	-.014	.005	.159	.172	1		
	P-value	.772	.907	.001	.000			
	N	460	460	460	460	460		
Timeliness	r	-.184	.238	.197	.234	.227	1	
	P-value	.000	.000	.000	.000	.000		
	N	460	460	460	460	460	460	
Cost	r	**-.400**	**.223**	**.209**	**.065**	**.183**	**.518**	**1**
	P-value	**.000**	**.000**	**.000**	**.163**	**.000**	**.000**	
	N	**460**	**460**	**460**	**460**	**460**	**460**	**460**

The above results are further established by conducting a multiple linear regression model to test the impact on Competitive Advantage Cost, as the dependent variable, using Logistics Performance dimensions, as the independent variables. Data for such model are displayed in Table 6 below where the coefficient of determination (R Square) equals 41.2 %. Such percentage implies that the model explains 41.2 % of the variation in Competitive Advantage Cost. The P-value for the model equals 0.000 which implies that Logistics Performance has a significant impact on Competitive Advantage Cost at 0.05 significance level.

Consequently, the model fitted could be stated as follows:

Competitive Advantage Cost = 1.225 - 0.215 * Customs + 0.161 * Infrastructure + 0.079 * Shipment - 0.088 * Competence + 0.080 * Tracking + 0.449 * Timeliness

Table 6: Regression Model of Logistics Performance on Competitive Advantage Cost

	Unstandardized Coefficients		Standardized Coefficients			R-Squared	F	P-value
Model	B	Std. Error	Beta	t	Sig.			
(Constant)	1.225	.142		8.659	.000			
Customs	-.215	.023	-.354	-9.464	.000			
Infrastructure	.161	.039	.163	4.133	.000			
Shipment	.079	.032	.096	2.479	.014	.412	52.985	.000
Competence	-.088	.041	-.080	-2.133	.033			
Tracking	.080	.035	.087	2.301	.022			
Timeliness	.449	.046	.394	9.853	.000			

The above analysis shows that the first hypothesis is partially supported.

Testing the Impact of Logistics Performance on Competitive Advantage Differentiation

The second hypothesis is tested using a correlation matrix between Logistics Performance dimensions and Competitive Advantage Differentiation. The results are displayed in Table 7 below where the correlation coefficient between Logistics Performance - Customs, Infrastructure, Shipment, Competence, Tracking and Timeliness and Competitive Advantage – Differentiation is -0.093, 0.202, 0.365, 0.121, 0.025, 0.241 respectively with P-value of 0.000 for Infrastructure, Shipment and Timeliness and P-value of 0.046, 0.010 and 0.592 for Customs, Competence and Tracking respectively. This denotes that Customs has a negative moderate significant relationship with Differentiation while Infrastructure, Shipment, Competence and Timeliness have a Positive weak significant relationship with Differentiation. On the other hand, Tracking has an insignificant relationship with Differentiation.

Table 7: Correlation matrix between Logistics Performance and Competitive Advantage Differentiation

		Customs	Infrastructure	Shipment	Competence	Tracking	Timeliness	Differentiation
Customs	r	1						
	P-value							
	N	460						
Infrastructure	r	.144	1					
	P-value	.002						
	N	460	460					
Shipment	r	.042	.297	1				
	P-value	.365	.000					
	N	460	460	460				
Competence	r	-.005	.140	.143	1			
	P-value	.920	.003	.002				
	N	460	460	460	460			
Tracking	r	-.014	.005	.159	.172	1		
	P-value	.772	.907	.001	.000			
	N	460	460	460	460	460		
Timeliness	r	-.184	.238	.197	.234	.227	1	
	P-value	.000	.000	.000	.000	.000		
	N	460	460	460	460	460	460	
Differentiation	r	**-.093**	**.202**	**.365**	**.121**	**.025**	**.241**	**1**
	P-value	**.046**	**.000**	**.000**	**.010**	**.592**	**.000**	
	N	**460**	**460**	**460**	**460**	**460**	**460**	**460**

A linear regression model is calculated to support the correlation test results where Competitive Advantage Differentiation is used as the dependent variable while Logistics Performance dimensions are used as independent variables. Table 8 below demonstrate that the model itself is significant with P-value is 0.000 and coefficient of determination (R Square) equals 18 %. On the contrary, Infrastructure, Competence and Tracking have an insignificant impact on Differentiation.

The model fitted could be stated as follows:

Competitive Advantage Differentiation = 1.346 - 0.077 * Customs + 0.108 * Infrastructure + 0.362 * Shipment + 0.061 * Competence - 0.086 * Tracking + 0.230 * Timeliness

Table 8: Regression Model of Logistics Performance on Competitive Advantage Differentiation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R-Squared	F	P-value
	B	Std. Error	Beta					
(Constant)	1.346	0.229		5.877	0.000			
Customs	-0.077	0.037	-0.092	-2.077	0.038			
Infrastructure	0.108	0.063	0.08	1.712	0.088			
Shipment	0.362	0.051	0.321	7.046	0.000	0.18	16.589	0.000
Competence	0.061	0.067	0.04	0.907	0.365			
Tracking	-0.086	0.056	-0.068	-1.53	0.127			
Timeliness	0.23	0.074	0.147	3.121	0.002			

Consequently, the above analysis shows that the second hypothesis is partially supported.

Testing the Impact of Logistics Performance on Competitive Advantage Focus

Testing the third hypothesis involved conducting a correlation matrix between Logistics Performance dimensions and Competitive Advantage Focus as shown in Table 9, in which the value of Spearman's correlation is calculated. Results denote that the correlation coefficient between Logistics Performance - Customs, Infrastructure, Shipment, Competence, Tracking and Timeliness and Competitive Advantage Focus is 0.045, 0.339, 0.702, 0.184, 0.132, 0.158 respectively with P-value of 0.000 for Infrastructure, Shipment and Competence and P-value of 0.005 and 0.001 for Tracking and Timeliness respectively and P-value of 0.33 for Customs. These values indicate that there is a positive significant weak relationship between Infrastructure, Shipment, Competence, Tracking, Timeliness and Focus while there is an insignificant relationship between Customs and Focus.

Table 8: Correlation matrix between Logistics Performance and Competitive Advantage Focus

		Customs	Infrastructure	Shipment	Competence	Tracking	Timeliness	Focus
Customs	R	1						
	P-value							
	N	460						
Infrastructure	R	.144	1					
	P-value	.002						
	N	460	460					
Shipment	R	.042	.297	1				
	P-value	.365	.000					
	N	460	460	460				
Competence	R	-.005	.140	.143	1			
	P-value	.920	.003	.002				

	N	460	460	460	460			
Tracking	R	-.014	.005	.159	.172	1		
	P-value	.772	.907	.001	.000			
	N	460	460	460	460	460		
Timeliness	R	-.184	.238	.197	.234	.227	1	
	P-value	.000	.000	.000	.000	.000		
	N	460	460	460	460	460	460	
Focus	R	**.045**	**.339**	**.702**	**.184**	**.132**	**.158**	**1**
	P-value	**.330**	**.000**	**.000**	**.000**	**.005**	**.001**	
	N	**460**	**460**	**460**	**460**	**460**	**460**	**460**

The correlation test results are further verified by conducting a multiple linear regression model to test the impact on Competitive Advantage Focus, as the dependent variable, using Logistics Performance dimensions, as the independent variables. Data for such model are displayed in Table 10 below where the coefficient of determination (R Square) equals 51.7 %. Even though the P-value for the model itself equals 0.000 which means that the model is significant, yet, P-values for Customs, Tracking and Timeliness are greater than 0.05 which denotes that they have an insignificant impact on Focus.

Consequently, the model fitted could be stated as follows:

Competitive Advantage Focus = 0.057 - 0.006 * Customs + 0.193 * Infrastructure + 0.738 * Shipment + 0.111 * Competence + 0.026 * Tracking - 0.043 * Timeliness

Table 9: Regression Model of Logistics Performance on Competitive Advantage Focus

	Unstandardized Coefficients		Standardized Coefficients			R-Squared	F	P-value
Model	B	Std. Error	Beta	t	Sig.			
(Constant)	.057	.176		.323	.747			
Customs	-.006	.028	-.007	-.206	.837			
Infrastructure	.193	.049	.142	3.981	.000			
Shipment	.738	.040	.651	18.639	.000	.517	80.739	.000
Competence	.111	.051	.073	2.153	.032			
Tracking	.026	.043	.020	.597	.550			
Timeliness	-.043	.057	-.027	-.752	.452			

Thus, the above analysis shows that the third hypothesis is partially supported.

Discussion and Conclusions

This research aims to identify the relationship between logistics performance and competitive advantage in the Egyptian logistics field and provide solutions to challenges facing freight transportation in Egypt nowadays. To reveal such relationship, correlation and regression analysis were conducted between the dimensions of Logistics Performance and Cost, Differentiation and focus as dimensions of Competitive Advantage.

The results show that Logistics Performance has a significant impact on Competitive Advantage Cost where the standardized coefficients calculated in regression analysis determine the importance of the independent variables with respect to Cost. Timeliness is ranked the most important, followed by Infrastructure, Shipment and Tracking. The least important dimensions are Competence and Customs.

As for Logistics Performance impact on Competitive Advantage Differentiation, it was found that the research variable as a whole has a significant impact while the dimensions Infrastructure, Competence and Tracking have an insignificant impact on Differentiation. On the other hand, the other significant dimensions ranked according to their more significant impact are Shipment, Timeliness and Customs.

Similarly, Logistics Performance as a whole has significant impact on Competitive Advantage Focus, yet, Customs, Tracking and Timeliness have an insignificant impact on Focus. Shipment is ranked more important with highest standardized beta value followed by Infrastructure and then Competence.

On comparing R-Squared value for the three regression models calculated, it was found that Focus Advantage has the highest value followed by Cost Advantage and finally Differentiation Advantage. This implies that Logistics Performance has the highest impact on Focus Advantage.

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