Competitiveness Determinants for the Egyptian Ports located on the Mediterranean: An Ordinal Logistics Regression Model

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Abstract

The aim of this study is to construct an index for the competitiveness for the Egyptian ports located on the Mediterranean Sea, these shall include the ports of Alexandria, Al Dekhila, East Port Said, West Port Said, and Damietta. A questionnaire was used for (117) shipping agents. The index created for the (14) services provided in these ports empirically explores determinants of competitiveness for the Egyptian ports located on the Mediterranean. The result of the study had shown that the main determinants of the competitiveness for the Egyptian ports located on the Mediterranean Sea are the speedy services, the quality of the infrastructure, and the intra-ports integration, while the inter-ports integration was not significant in determining the competitiveness for the Egyptian ports located on the Mediterranean Sea.

Keywords: Ports Competitiveness, Egyptian ports on the Mediterranean; Intra-ports integration; Inter-port integration; The Quality of Ports Infrastructure.

1 Introduction [1] :

The competitive port is one that shippers choose over other options more frequently, allowing it to expand and gain market share. Port competitiveness is the ability to gain a competitive edge through the development of infrastructure and high-quality services. In addition of being essential transportation linkages in supply chain networks, ports are also crucial for the growth of national economies and for altering the composition of the global shipping industry. As a result, assessing a port's competitiveness has become crucial to its survival and development.

[1]This study is the first of a series of publications of a project lasted for three years started from December 2019 ending by July 2022, where the author had done an extensive visit to the commercial ports in Egypt, and had designed a questionnaire to construct different indexes related to the competitiveness of the Egyptian ports.

The port's competitiveness was one of the main deciding factors for end users. Nevertheless, more broadly speaking, port competitiveness refers to a multidimensional function that considers dominating forces for different demands. Port competitiveness is the ability to gain a competitive edge through the development of infrastructure and high-quality services. The motive of the research which came under the umbrella of port competitiveness to identify a niche area of research. The study provides an analysis of the competitiveness of the Egyptian ports located on the Mediterranean this shall include the speed of services, the infrastructure, intra- port integration, quality of services, and inter ports services.

The paper focuses on the determinants affecting the competitiveness of the Egyptian ports for the inter- port integration and the intra- port that have an effect on the Quality of services provided in the Egyptian ports along with the speed of services provided and the quality of the infrastructure as it became very crucial for the Egyptian ports located on the Mediterranean to study thoroughly these determinants and to recommend an action for implementation to achieve better competitive edge.

The index created in the study used the main (14) services that the ports are providing to the shipping agents, the importance of the idea of the study is investigating comprehensively the determinants of the competitiveness since the Egyptian ports located on the Mediterranean Sea are witnessing strong competition from different ports namely the ports of Malta, Piraeus in Greece, Izmir and Mersin in Istanbul, Limassol in Cyprus, Haifa and Ashdod in Israel, Tanga and Casablanca in Morocco, and port of Gibraltar in Spain, given these competitions from different players, it became a crucial to study the determinants of competition for the Egyptian ports.

The problem that the study investigates the effect of inter-port integration, intra-port integration, the speedy services, and the quality of the infrastructure on the Egyptian ports' competitiveness since the literature lacked a comprehensive approach to study thoroughly the determinants of the competitiveness of the Egyptian ports specifically those are located on the Mediterranean. The Research Hypothesis: The Quality of the Infrastructure, the speedy services, the inter - port integration and the intra - port integration has a significant effect on ports' competitiveness.

The organization of the study is as follows. An introduction is presented in this section. Section (2) begins by illustrating the literature review, Section (3) then discusses the Methodology, Section (4) the questionnaire results and the descriptive analysis, Section (5) discusses the steps for building the indices and checking the reliability, Section (6) is the empirical Model and the findings and finally, conclusion and policy recommendations are presented in Section (7)

2. Literature Review:

The purpose of the study is to measure the competitiveness of the Egyptian ports located on the Mediterranean Sea for the (14) services provided in these ports: the pilotage, towage, mooring, quarantine, docking, marine inspection fees, water supply, waste removal, water drainage, supply of food, supply of spare parts, repairs and maintenance, fuel supply and loading and unloading. The study created the Index that measures the competitiveness for the (14) services provided in the Egyptian ports located on the Mediterranean which shall include Alexandria, El Dekhila, East Port Said, West Port Said, and Damietta.

Song and Yeo (2004) claimed that the port's throughput, infrastructure, geopolitical location, and service quality are the elements affecting the port's competitiveness. Yap et al (2006) for the study of five ports in East Asia- Hong Kong, Busan, Kaohsiung, Shanghai, and Shenzhen were examined in terms of their port relationships using the primary port connectedness.

The study of Grosso, M. and Monteiro, F. (2008) identified the main factors and criteria influencing freight forwarders' decision to choose a port. The methodology in the study based on qualitative analysis that has been developed by a questionnaire method applied to the Port of Genoa. A questionnaire with a 5-point Likert scale has been created and distributed to a sample of (26) freight forwarding businesses that are presently using this port. The Factor Analysis approach was employed to analyze the gathered data. The results of this study demonstrate that the primary factors influencing the choice of port may be broadly categorized into four categories: port connection, port productivity, port electronic information, and container logistics.

Yeo et al. (2008), determined the factors affecting the competitiveness and provides a framework for assessing them. A regular questionnaire of shipping businesses and owners revealed that port service, hinterland condition, availability, convenience, legal considerations, regional center, and connection are all important factors in port selection and competitiveness.

Saeed, N. (2009) The purpose of the study is to: 1) use the entropy weigh TOPSIS to compare the port competitiveness of Busan and Shanghai ports; and 2) look for strategies to make Busan port more competitive. Following a search for relevant criteria on port competitiveness factors for analysis, the primary criteria are separated into two categories: port facilities (depth, berth length, number of berth, total area, storage area), and port throughput (throughput change rate, transshipment cargo volume, and transshipment cargo rate) these criteria of study had been done for Busan and Shanghai ports.

Tongzon (2009), had found in his study that several criteria for port choice that are discovered from the body of existing literature, including port efficiency, a prime location, affordable fees, sufficient infrastructure, and a comprehensive array of port services. The ability to communicate with other ports. Having a suitable infrastructure is one of these factors that becomes crucial for port selection.

When investigating the literature review few indices had constructed to measure the competitiveness for ports, as the study of Savardi and Alizmini (2014) Employing TOPSIS and AHP, it was discovered that important considerations for choosing a container seaport in the Persian Gulf include working hours, stevedoring rate, safety, port facility capacity, number of berths operational, ship channelizing, and international policies.

El Haddad (2022) had categorized the Egyptian ports located on the Mediterranean into three types of competitors those are from the first degree in which the Egyptian ports are getting worse because of their continuous development and modernization. The fierce competition from ports in the second category because any increase in the market share of any port in this market will mean a decrease from the market share of the other competing port. Finally, there is no competition for the Egyptian ports from a third degree port unless they had worked on a radical development.

3. Methodology:

The study creates an index to measure the competitiveness of the Egyptian ports located on the Mediterranean for the services of pilotage, towage, mooring, guidance, towage, quarantine, docking, marine inspection fees, water supply, waste removal, water drainage, food supply, spare parts, repairs, fuel supply and loading/unloading. The study creates an index to measure competitiveness by using the questions in the questionnaire for measuring competitiveness in the Mediterranean for the Egyptian ports (see Appendix 1).

3.1 Questionnaire Design:

A questionnaire had been created for the shipping agents working mainly with the Egyptian ports located on the Mediterranean. A pre-test had been conducted on (25) shipping agents before continue interviewing the rest of the sample. Demographic data was collected on the shipping agents concerning the ports that he/she is working in and the history of work with the port.

3.2 Sampling[2] :

Since N is the population size and equal to 286, accordingly the sample size determined

as n0 = (1.96) 2 (0.5)(1-0.5) / 0.072 = 196

Then, we use the following formula using the correction factor:

sample size n= $\frac{Nn_0}{n_0+(N-1)}$

n= $\frac{196*286}{196+(286-1)} = 117$

So, we targeted to reach to around (117) of shipping agents. Nonresponse occurs based on some reasons like wrong numbers, changing the company's activities or the closure of the company (Nawar,2024).

[2] The author used the same sampling technique for a previous study concerning the evaluation of the pricing in the Egyptian Ports, as this study is the second study from the project conducted concerning evaluating the pricing and the competitiveness of the Egyptian Ports. The reference of the paper is as follows:
Nawar, Z. M. (2024). Determinants of the Satisfaction Based Pricing for the Egyptian Ports: An Ordinal Logistics Regression Model, Scientific Journal for Financial and Commercial Studies and Research, Faculty of Commerce Damietta University, 5(1)1, 859-891.

3.3 Data Collection Method[3] :

The primary collection of data is based on personal interviews with the shipping agents. The data collection system was built using questionnaire solutions which an advanced electronic data collection system, and the database was saved on the CSpro program.

A post review through for the data collection system was done and an approval of the consistent forms and return of the inconsistent ones through the quality monitors.

3.4 Empirical Model to Examine the Determinants of Competitiveness in the Mediterranean (Logistics Model) :

The index was created to measure the competitiveness of the Egyptian ports located on the Mediterranean. Literature identified different methods of constructing competitiveness in the Mediterranean for Egyptian ports. Many factors were able to measure the competitiveness level in the Mediterranean, these detailed measures are the focus of the paper which includes the services of Guidance, Towage, Mooring, Quarantine, Docking, Marine inspection fees, Water supply, Waste removal, Water drainage, food supply, Spare parts, Repairs, Fuel supply and Loading/unloading. These questionnaire results are then used to construct Egyptian competitiveness index in the Mediterranean as explained previously.

To further investigate the determinants of competitiveness in the Mediterranean for Egyptian ports, an Ordinal Logistics Regression Model (OLM) was estimated based on the results of the field questionnaire and the constructed index of competitiveness in the Mediterranean. We use the Proportional Odds Model which is a form of the Ordinal Logistics Regression Model that we believe is the most relevant to the nature of the variables. This is particularly because most of the included variables are categorical in nature (Harrell, 2015; Warner, 2008; Parsons et al. 2009). More on the details, steps and results of the empirical model are presented in section 6.

[3] The author used the same Data Collection Method used for the previous study concerning the evaluation of the pricing in the Egyptian Ports as well.

4. Constructing Different Indices:

Indices for Competitiveness in the Mediterranean, Importance of speed, evaluation of Infrastructure are considered by checking the reliability and then factor analysis has been conducted. No need to consider indices and make a data reduction for Inter -ports integration and intra- ports integration as these two variables have only one statement as shown in Appendix 1.

4.1 Checking Reliability:

To assess the reliability of each set of variables, Cronbach alpha was checked. This study has set the cutoff value for 0.7 of Cronbach alpha as a minimum score for reliability based on the literature (CHO & KIM, 2015; Uyanah et al (2023); Wadkar, et al (2016)).

Table 1: Reliability statistics

Set of variables	No. of items	Cronbach's Alpha
Competitiveness For the Egyptian Ports in the Mediterranean	**14**	**0.855**
Importance of speed	**14**	**0.828**
Importance of the quality of Infrastructure	**14**	**0.923**

Since the value of the Cronbach Alpha is greater than 0.7 so it shows a high internal consistency of the variables.

4.2 Building different indices:

We compose the index through three main steps: (1) weighing, (2) normalization, and (3) aggregation. To estimate the index weights, Principal Components Analysis was used (PCA) as indicated in (Filmer and Pritchett 2010). This approach standardizes the sub-indicators by calculating z-scores using the following formula:

$I = \frac{x-\bar{x}}{\sigma}$,

Where,

- x is the sub-indicator value,
- $\bar{x}$ is the mean value,
- σ is the standard deviation value.

After applying the normalization and aggregation steps, the index scores are then divided into three quintiles: low, moderate, and high. The adequacy of the data to employing Factor Analysis is measured by Kaiser-Meyer-Olkin (KMO) test. As reported in table 8, KMO is greater than 0.8 which affirms the robustness of designed indices.

Table 2: Kaiser-Meyer-Olkin (KMO) test

Set of variables	**KMO**
Competitiveness of the Egyptian ports located in the Mediterranean	**0.826**
Importance of speed	**0.927**
Importance of the Quality of Infrastructure	**0.794**

The constructed index is then employed in the empirical model to examine the determinants of competitiveness in the Mediterranean for the Egyptian ports, as illustrated in the next section.

5. Determinants of Competitiveness in the Mediterranean: Empirical Model :

As explained in the previous section, the Competitiveness in the Mediterranean is the dependent variable and it is ordinal in nature; divided into three levels: low, moderate, and high, where the high is the reference point for future comparisons. The ordinal logistic regression model takes the following form:

$$log\left[\frac{P(Y\leq j)}{1-P(Y\leq j)}\right] = \alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k), \quad j = 1, \ldots, J-1 \quad (1)$$

Where,

- X is the set of k predictors/independent variables with J-1 levels response/dependent variable,
- α_j is called the threshold,
- β is the parameter for each predictor variable.
- The cumulative logit probability model (e.g., $P(Y \leq j)$) Takes the form as:

$$P(Y \leq j) = \frac{e^{\alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}}{1 + e^{\alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}}. \quad (2)$$

5.1 Model Variables*:*

The dependent variable is the competitiveness in the Mediterranean. Three competitiveness levels are distinguished in the study as the dependent variable of the ordinal logit model: Low (low competitiveness), Moderate (moderate competitiveness), High (high competitiveness), as shown in table 3.

Table 3: The Dependent variable: Competitiveness in the Mediterranean

Categories	Code
Low competitiveness	1
Moderate competitiveness	2
High competitiveness	3

The study employs two models: a model for the shipping agents. The dependent variables are summarized in table 4.

Table 4: Explanatory variables in the model: The shipping agent questionnaire

Variable	Description	Value labels
X_1 (The speedy services)	The rapid cargo handling processes, vessel turnaround times, and overall operational performance within port facilities. (Notteboom& Rodrigue,2009)	High, Medium, Low
X2 (the quality of Infrastructure)	The quality of infrastructure in ports refers to the condition of physical facilities and systems within port areas, these are essential for supporting maritime activities, cargo handling operations, and vessel movements. (Lafontaine&Jurgen,2015)	Bad, Neutral, Good
X3 (inter ports integration)	Refers to the coordination and collaboration among multiple ports within a region or across different regions to enhance overall efficiency, connectivity, and competitiveness in global maritime trade. (Pallis& Monios,2010)	High, Medium, Low
X4 (intra ports integration)	Refers to the coordination and collaboration among various terminals, facilities, and stakeholders within a single port complex or terminal area to optimize operational efficiency, enhance cargo throughput, and improve overall performance. (Bergqvist & Monios,2014)	High, Medium, Low

6. Empirical Findings:

As previously indicated, we apply Ordinal Logistics Regression model (Logit). To make sure that our results are reliable, Ordinal Logistic Regression model (OLM) assumptions were checked and verified for both models[4]. As

[4] Assumptions of the Ordinal Logistic Model are: (1) The dependent variable should be measured at an ordinal level, (2) Ordinal independent variables must be either continuous or categorical, (3) there is no

established in literature (e.g. Akın & Şentürk (2012) and Garson (2012) parameter interpretation of the Ordinal Logistic regressions is different and more complex than Binary and Multinomial Logistic regression analysis. It requires both the identification of a reference category as well as deriving and interpreting exponential estimated. In the below models, we define a reference category for each variable and interpret according to the known 'interpretation Odds Ratio' method as explained in Field (2009)[5].

To interpret the empirical models, it is worth noting that the reference category is the 'High/Good' category. This means that, the smaller the value of exponential ß, the higher the effect of the independent variable on the dependent variable. In other words, small values of the exponential coefficients indicate that they are less likely to be 'Low/bad, hence implying a strong perceived impact on the competitiveness for the Egyptian ports located in the Mediterranean Sea.

Model for The Competitiveness in the Mediterranean in the Egyptian Ports Questionnaire -LOGIT Equation

$logit(Low\ Competitiveness) = -29.352 - 28.665*$ Importance of speed is low -1.182 * Importance of speed is moderate – 1.210*evaluation of the infrastructure is bad– 2.488*evaluation of the infrastructure is neutral+ 3.004*inter ports integration is low– 0.860* inter ports integration is neutral -7.107*intra ports integration is low–-5.654* intra ports integration is neutral

$logit(Medium\ Competitiveness) = -9.743 - 28.665*$ Importance of speed is low -1.182 * Importance of speed is moderate – 1.210*evaluation of the infrastructure is bad– 2.488*evaluation of the infrastructure is neutral+ 3.004*inter ports integration is low– 0.860* inter ports integration is neutral-7.107*intra ports integration is low–-5.654* intra ports integration is neutral

multi-collinearity between independent variables and (4) he effects of any explanatory variables are consistent or proportional across the different thresholds.

[5] The odds ratio indicates how many times more or less is the likelihood of one event being investigated with respect to another event being investigated and is calculated by getting the exponential for β (Salmi et. al. 2015).

Table 5: Ordinal logit model estimation results for shipping agents (Dependent variable is competitiveness in the Mediterranean in the Egyptian Ports)

Variable	Parameter Estimates	
Variable Option	**B**	**Exp(B) / Odds Ratio**
$\alpha_1(\leq Low\ Competitiveness)$	-29.352**	
$\alpha_2(\leq Medium\ Competitiveness)$	-9.743**	
X_1 (Importance of speed)		
Low	-28.665	0.000
Medium	-1.182**	0.306**
High (Ref)	-	-
X2 (Evaluation of the Infrastructure)		
Bad	-1.210**	0.2982
Neutral	-2.488***	0.0831
Good (Ref)	-	-
X3 (inter -port integration)		
Low	3.004	20.166
Medium	-0.860	0.423
High (Ref)	-	-
X4 (intra - ports integration)		
Low	-7.107*	0.367*
Medium	-5.654*	0.122*
High (Ref)	-	-
Psedudo R^2 (Nagelkerke)	0.171	

Source: own study, * significant at 0.1; ** significant at 0.05; *** significant at 0.01

-2loglikelihood= 439.969, $\chi^2_{(11)}$ =26.934, p-value= 0.005

Primarily, the two intercepts are used to differentiate the category of competitiveness in the Mediterranean in the Egyptian Ports questionnaire for comparison. These are also called the cut points of comparison -29.352 is used for comparison of lowest competitiveness to Moderate and highest satisfaction, -9.743 is used to compare category low satisfaction, moderate to the highest satisfaction.

Importance of speed. the low exponential ß of the importance of speed (0.306) indicates that this variable is significantly perceived as high. This means that the odds ratio for being medium is less likely to be in the highest quintile of competitiveness in the Mediterranean compared with the reference category 'high'.

Evaluation of infrastructure. the odds ratio for low are 0.2982 times less likely to be in the highest category of the competitiveness in the Mediterranean as compared to good. This implies that being good are more significant in affecting the competitiveness in the Mediterranean in the Egyptian Ports as compared to the 'bad'. The evaluation of infrastructure 'neutral' is 0.0831 time less odd of being in the highest category of competitiveness in the Mediterranean in the Egyptian Ports quantile compared to evaluation of infrastructure being 'good'.

Inter- ports integration. The results show that inter ports integration doesn't have a significant effect on competitiveness in the Mediterranean in the Egyptian Ports. In the same manner, importance of quality doesn't have any significant effect on competitiveness in the Mediterranean in the Egyptian Ports.

Intra - ports integration*:* The small exponential ß of the Intra ports integration (0.367) indicates that this variable is significantly perceived as high. This means that the odds ratio for being low is less likely to be in the highest quintile compared with the reference category 'high'. The intra ports integration 'medium' is 0.122 time less odd of being in the highest category of competitiveness in the Mediterranean in the Egyptian Ports quantile compared to Intra ports integration being 'high'.

6.1 Model validation:

Model Fitting Information, Goodness-of-Fit, Pseudo R-Square, Parameter Estimates and Test of parallel lines are checked. Tables (6) and (7) illustrate the results of the shipping agent model. Results in table (6) suggest that our model fit very well ($p>0.05$) which indicates that we fail to reject the null hypothesis depending on the observed data with adequate fitness.

Table 6: Goodness of fit for competitiveness in the Mediterranean model

	Model	-2 Log Likelihood	df	Sig.
Shipping Agent Model	Pearson	52.470	261	.480
	Deviance	272.849	261	.268

Table 7: Test of Parallel Lines for the model

	Model	-2 Log Likelihood	Chi-Square	df	Sig.
Model	Null Hypothesis	720.182			
	General	579.294	52.470	10	0.836

Now, it is important to make the test of parallel lines. The null hypothesis in the test of parallel lines states that the location parameters (slope coefficients) are the same across response categories.

Parallel Lines: One of the assumptions underlying Ordinal Logistics Regression is that the relationship between each pair of outcome groups is the same. This is commonly referred to as the test of Parallel Lines because the null hypothesis states that the slope coefficients in the model are the same across response categories (and lines of the same slope are parallel). If we fail to reject the null hypothesis, we conclude that the assumption holds.

As shown in table 7 for our model, the Parallel Line test for the model is 720.182 with Chi square value 52.470 and p-value= 0.836 which is greater than the 5% level of significance. This indicates a failure to reject the null hypothesis. Thus, the proportional odds assumption appears to hold for the general model.

7. Conclusion and Recommendations:

7.1. The conclusion:

The main aim of the study is to examine and to identify the factors that influencing the completeness in the Egyptian ports located on the Mediterranean, these factors are the provision of the speedy services, the quality of the infrastructure, the intra-ports integration, and the inter- ports integration. The aim of the study also is to construct an index using these factors.

This study has a number of theoretical and practical implications. In terms of theoretical implications, the current study proposes a new conceptual framework to analyze port competitiveness through the use of the variables of the provision of speedy services, upgrading the infrastructure, and the integration between the different ports and also the integration between the different departments inside the port. The proposed framework considered and used the (14) main services provided at the ports as the core-stone in measuring the competitiveness.

Research results and conceptual framework shed the lights and stressed on the importance on creating an index for the competitiveness for the Egyptian ports and upgrading this index to improve the overall efficiency and performance of the Egyptian ports and to deal with the fierce competition that the ports specifically on the Mediterranean are facing.

The study found and for the index created that the provision of the speedy services, the upgrading of the ports infrastructure, and the intra- ports integration has significant impact on the competitiveness of the Egyptian ports located in the Mediterranean. Whereas the inter-port integration of services didn't have any significant effect on the competitiveness of the Egyptian ports located on the Mediterranean.

7.2. The Recommendations:

- To work on increasing the intra- ports integration, there should be for the Egyptian ports a clear vision and in the core of this vision is the port's integration between the different departments and the stakeholders. Also, in the heart of this vision is training the human factor on the importance and on the implementation of the integration between departments and stakeholders in the port to achieve quality services.
- Developing a system to link the various departments in the port, and using the latest technological means to link services within the port became a must for the Egyptian ports.
- Expanding the construction of berths, using the latest technological means, deepening the berths, creating new berths, establishing container terminals, and establishing logistics areas are in the core of the recommendations to ensure quality services provided, speedy services and also enhancing the quality of infrastructure for the Egyptian ports.

- For the Egyptian ports and for those are located on the Mediterranean Sea, there must be markets and competitors' analysis studies to measure the competitiveness of the ports, these to be done to upgrade and to develop the services provided.
- For the Egyptian ports and for inter-ports integration, there should be a unification of goals and also the ports should work on a unified system in dealing with the shipping agents.
- Creativity and innovation in providing and improving services, the use of the latest technology, upgrading the infrastructure, and training the labor factor became an essential factor for the Egyptian ports to increase its competitiveness.

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Appendix 1: Questionnaire Distributed to Shipping Agents:

Participants' names

(Agent data is optional)

Shipping Agent Name: …….. Company……Nationality

Tel. :……

Check the ports usually used:

☐ Alexandria ☐ Al Dakhilah	☐ East Port Said ☐ West Port Said	☐ Damietta

Type of Goods Transferred

☐ Containers
☐ Liquid Bulk
☐ Dry Bulk
☐ General Cargo
☐ Others
Please specify……
No. of visits to the Egyptian ports……..period of stay……

1- How long have you been working with marine ports subject of the research?
   1- ☐ Less than one year
   2- ☐ 1- 5 years
   3- ☐ 6- 10 years
   4- ☐ 11- 20 years
   5- ☐ More than 20 years

2- No. of employees in the company:
   Number: ☐☐☐

2- In relation to the following services:

1**- Please specify from a scale from 1 to 5 the importance of the "Quality of Infrastructure", where 1 is the most important and 5 is the least important):**

Service	1	2	3	4	5
Guidance					
Towage					
Mooring					
Quarantine					
Docking					
Marine inspection					
Water supply					
Waste removal					
Water drainage					
Food supply					
Spare parts					
Repairs					
Fuel supply					
Loading/unloading					

2- Please specify from a scale from 1 to 5 the importance of the "speedy services", where 1 is the most important and 5 is the least important):

Service	1	2	3	4	5
Guidance					
Towage					
Mooring					
Quarantine					
Docking					
Marine inspection					
Water supply					
Waste removal					
Water drainage					
Food supply					
Spare parts					
Repairs					
Fuel supply					
Loading/unloading					

3- How would you rate the level of the following services compared to other ports in the Mediterranean (internationally):

Service	Very poor (1)	poor (2)	Medium (3)	Good (4)	Very good (5)
Guidance					
Towage					
Mooring					
Quarantine					
Docking					
Marine inspection					
Water supply					
Waste removal					
Water drainage					
Food supply					
Spare parts					
Repairs					
Fuel supply					
Loading/unloading					

4 - How would you rate the intra-port integration?

1- ☐ No integration.
2- ☐ Poor integration.
3- ☐ Fair integration.
4- ☐ Highly Integrated.
5- ☐ Very High integration.

If your answer was 1, 2, or 3, what do you think are the reasons?

……

5- How would you rate the Egyptian inter-ports integration?

1- ☐ No integration.
2- ☐ Poor integration.
3- ☐ Fair integration.
4- ☐ Highly Integrated.
5- ☐ Very High integration.

محددات القدرة التنافسية للموانئ المصرية الواقعة على البحر المتوسط: نموذج الانحدار اللوجستي الترتيبي

هدفت هذه الدراسة إلى بناء مؤشر للقدرة التنافسية للموانئ المصرية الواقعة على البحر الأبيض المتوسط، وتشمل هذه الموانئ الإسكندرية والدخيلة، وشرق بورسعيد، وغرب بورسعيد ودمياط. تم استخدام استبيان لـ (١١٧) وكيلًا ملاحيًا. وقد تم إنشاء مؤشر للخدمات المقدمة في هذه الموانئ وعددها (١٤) خدمة، وذلك لاستكشاف محددات القدرة التنافسية للموانئ المصرية الواقعة على البحر المتوسط. وقد أظهرت نتيجة الدراسة أن المحددات الرئيسية للقدرة التنافسية للموانئ المصرية الواقعة على البحر المتوسط هي سرعة تقديم الخدمة، وجودة البنية التحتية، والتكامل بين الإدارات بالميناء الواحد، بينما لم يكن التكامل بين الموانئ ذو أهمية في تحديد القدرة التنافسية للموانئ المصرية الواقعة على البحر المتوسط .

الكلمات المفتاحية: القدرة التنافسية للموانئ، الموانئ المصرية الواقعة على البحر المتوسط؛ التكامل بين الموانئ؛ التكامل بين الادارات داخل الميناء؛ جودة البنية التحتية للموانئ.