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الطلب الخارجي علي الفراولة المصرية المجمدة

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المستخلص

استهدف البحث بصفة عامة التعرف على أهم الأسواق المستوردة لمحصول الفراولة المصرية المجمدة، والتعرف على محددات الصادرات المصرية منها وذلك اعتماداً على بيانات الفترة الزمنية (2007-2022)، بالإضافة إلى التعرف على مرونات الطلب المختلفة ودرجتها ومدى مرونتها من عدمه وذلك لتضمينها في سياسات النهوض بصادرات الفراولة المجمدة.

ومن خلال دراسة دالة الطلب الخارجي للدول سالفة الذكر علي الفراولة المصرية المجمدة تبين أن مرونة الطلب السعرية أقل من الواحد للسوق الروسي والهولندي وبالتالي فإن الفراولة المجمدة المصرية يمثل سلعة ضرورية لهذه الدول، بينما كانت أكبر من الواحد في السوق الألماني والصيني أي سلعة مرنة وبالتالي فيعتبر الفراولة المجمدة المصرية سلعة كمالية لكل من ألمانيا والصين. أما بالنسبة لمرونة الطلب العبورية كانت أكبر من الواحد في جميع الأسواق، مما يعني أن صادرات مصر من الفراولة المجمدة تتأثر بأسعار الدول المنافسة. كما أن مرونة الطلب الدخلية كانت أكبر من الواحد في السوق الألماني، مما يعني طلب أكثر مرونة وأن صادرات مصر من الفراولة المجمدة تتأثر بالدخل القومي في السوق الألماني. كما أن مرونة عدد السكان كانت أكبر من الواحد في جميع الأسواق، مما يعني توافق الذوق لمستهلك بنجلاديش مع الفراولة المجمدة المصرية.

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Foreign demand for frozen Egyptian strawberries

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ABSTRACT

the research aimed at identifying the most important importing markets for Egyptian frozen strawberries, and identifying the determinants of Egyptian exports based on data for the time period (2007-2022), in addition to identifying the different elasticity of demand, their degree, and the extent of their elasticity or not, in order to include them in development policies of frozen strawberries exports.

By studying the foreign demand function of the aforementioned countries for Egyptian frozen strawberries, it was shown that the price elasticity of demand is less than one for the Russian and Dutch markets, and therefore Egyptian frozen strawberries represent a necessary commodity for these countries, while it was greater than one in the German and Chinese markets, and this refers to an elastic demand and therefore strawberries are considered Frozen Egyptian is a luxury item for both Germany and China. As for the cross elasticity of demand, it was greater than one in all markets, which means that Egypt's exports of frozen strawberries are affected by the prices of competing countries. Also, the income elasticity of demand was greater than one in the German market, which means more elastic demand and that Egypt's exports of frozen strawberries are affected by national income in the German market. Also, the population elasticity was greater than one in all markets, which means that the taste of the Bangladeshi consumer is consistent with Egyptian frozen strawberries.

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Introduction:

Egypt is considered the first country in the world in exporting frozen strawberries, as the value of Egyptian exports amounted to about 299,364 million dollars in 2022, representing about 21.95% of the total value of world exports of frozen strawberries, which amounted to about 1,363,589 million dollars. and it is also one of the most important countries exporting fresh strawberries. And this crop is exported to European and Arab countries, the most important of which are Germany, Russia, China, the Netherlands, Saudi Arabia and other countries. The export to these countries requires quarantine and phytosanitary conditions, the most important of which are pesticide and microbiological residues and heavy metals in order to comply with the requirements of these markets, what it makes it one of Egypt's priorities among a large group of important export crops. As the strawberry freezing industry is also considered one of the most important food industries because of its special advantages, including (low production costs - reducing waste - preserving nutritional value - light weight - increasing the shelf life without resorting to the use of preservatives), which leads to achieving food quality and safety and opening the doors of exporting in light of applicable international standards and measurements, in addition to the added value that this industry can add.

The law of demand indicates that there is an inverse relationship between the quantity of demand and the price, and this is also associated with the equality of all other influencing factors. The law stipulates that if the percentage of demand for products increases, their prices decrease automatically, and if the percentage of demand decreases, their prices rise directly, meaning that the presence of Other alternatives It is considered one of the most important reasons influencing the law of demand, and the demand curve expresses this relationship, indicating that the matters and factors influencing the law are related to the simultaneous presence of sellers and buyers at the same time.

The foreign demand of frozen Egyptian strawberries for the imported market can be estimated by formulating a statistical model that contains the most important determinants, which are (Egypt’s export price to the importing country, the export price of competing countries, the population of the importing country, and the average per capita income of the importing country).

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Research problem:

Despite the increasing economic importance of the Egyptian frozen strawberry crop, Egyptian exports to countries around the world are characterized by instability on the one hand, and sometimes a tendency towards decline on the other hand, compared to competing countries, and the foreign market's tastes for frozen strawberries differ.

Research objective:

the research aimed to identify the most important importing markets for Egyptian frozen strawberries, and to identify the determinants of Egyptian exports based on data for the time period (2007-2022), in addition to identifying the various elasticity of demand, in order to include them in policies of frozen strawberries export development.

Research method and sources of data collection:

To achieve the research objectives, the qualitative analysis method was used, such as the arithmetic mean and percentages, as well as the quantitative analysis method, where some analysis methods were used, such as estimating general time trend equations, and estimating multiple regressions in double logarithmic form by estimating external demand functions, using two Excel programs and SPSS. The research relied mainly on secondary data published on the Internet.

Research results and discussion:

Development of Egyptian frozen strawberry exports:

Data of table (1) shows that the quantity of exports from frozen Egyptian strawberries reached a minimum limit amounted to about 6.6 thousand tons in 2007, and a maximum limit amounted to about 135.7 thousand tons for the year 2022, with an average amounted to about 44.6 thousand tons during the study period (2007-2020). By examining the general time trend equation in Table (2), it was found that the quantity of exports from frozen Egyptian strawberries increased by A statistically significant extent amounted to about 7.29 thousand tons annually, representing 16.3% of the average for the study period, which amounted to about 44.6 thousand tons.

Table (1) also indicates that the price of Egypt's exports of frozen strawberries reached a minimum limit amounted to about $396/ton in 2013, and a maximum limit to about $2128/ton in 2021, with an average amounted to about $1584.3/ton during the study period (2007-2022). By examining the general time trend equation in Table (2), it was found that the export price of frozen Egyptian strawberries increased by a

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statistically significant extent amounted to about $66.67/ton annually, representing 4.2% of the average period of the study.

Table (1): quantity, price and value of exports of frozen Egyptian strawberries during the period (2007-2022)

(Value: million dollar, quantity: thousand ton, price: dollar/ ton)

Years	Quantity of exports	Export price	Export value
2007	6.6	954	6.3
2008	10.6	1761	18.6
2009	10.3	1389	10.8
2010	10.2	1058	10.8
2011	14.5	1165	16.9
2012	11.3	1839	20.8
2013	63.7	396	25.2
2014	33.5	1395	46.7
2015	26.5	1688	44.7
2016	26.4	1687	44.5
2017	34.1	1972	67.3
2018	55.2	2174	119.9
2019	85.8	1776	152.5
2020	78.8	1924	151.5
2021	111.2	2128	236.6
2022	135.7	2042	277.1
Average	**44.6**	**1584.3**	**78.1**

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

It is shown from table (1) and figure (1) that the value of exports of frozen Egyptian strawberries reached a minimum limit amounted to about $6.3 million in 2007, and a maximum limit amounted to about $277.1 million for the year 2022, with an average of about $78.1 million during the study period (2007-2022). By studying the time trend equation in Table (2), it was found that the value of exports from frozen Egyptian strawberries increased by a statistically significant extent amounted to about 15.78 million dollars annually, representing 20.2% of the average period of the study.

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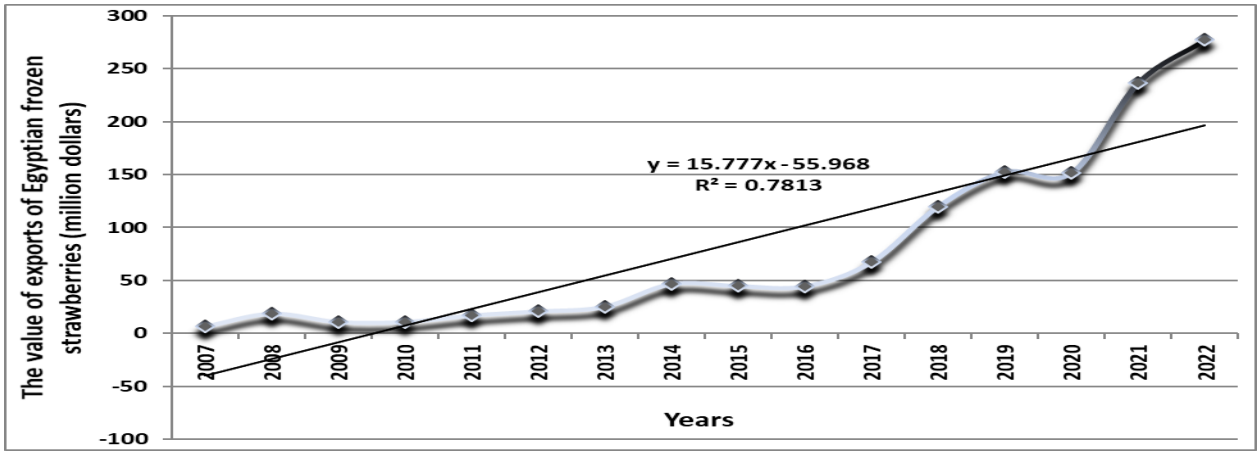
Table (2): trend equations for the development of the quantity, price and value of exports from frozen Egyptian strawberries during the period (2007-2022)

Statement	The equation	R^2	F	% annual change
Quantity of exports (thousand tons)	$\hat{Y}_i = -17.3 + 7.29\ X_i$ (-1.6) (6.56)**	0.75	43.1	16.3
Export price (dollar/ton)	$\hat{Y}_i = 1017.6 + 66.67\ X_i$ (5.01)** (3.18)**	0.42	10.1	4.2
Export value (million dollars)	$\hat{Y}_i = -56.0 + 15.78\ X_i$ (-2.59) ** (7.07)**	0.78	50.0	20.2

Where: $\hat{Y}i$: the estimated value of the statement. Xi: time variable for the time period (2007-2022), where i = (1,2,3,...,16). The value in parentheses indicates the calculated (T) value, (R^2) the coefficient of determination, (F) the significance of the model, (**) indicates the significance of the regression coefficients at a significance level (0.01).
Source: Calculated from Table (1) in the research.

Figure (1): Development of the Egyptian exports value for frozen strawberries in million dollars during the period (2007-2022).



Source: Table (1) in the research.

Relative distribution of the quantity and value of Egyptian frozen strawberry exports to the most important countries in the world:

Table (3) and figure (2) shows the relative distribution of the quantity and value of Egyptian frozen strawberry exports to the most important countries in the world during the period (2018-2022), where the average quantity and the average value of Egypt's exports reached about 93,324.6 tons, 187,507.2 thousand dollars, where Germany occupies the first rank among Egyptian frozen strawberry exports. As the average quantity and the average value of the Egyptian exports to Germany amounted

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to about 15,169.2 tons, 30,470.8 thousand dollars, representing about 16.3% for each of them from the world average, while the Russian Federation came in the second rank, with an average quantity and average value amounted to about 10,096.2 tons, or 20,243.4 thousand dollars, representing about 10.8% for each them from the world,

Table (3): Relative distribution of the quantity and value of Egyptian frozen strawberry exports to the most important countries in the world during the period (2018-2022)

Quantity of exports (tons)			Export value (thousand dollars)		
The average	**Relative distribution**	**Countries**	**Relative distribution**	**The average**	**Countries**
15169.2	16.3	Germany	16.3	30470.8	Germany
10096.2	10.8	Russian Federation	10.8	20243.4	Russian Federation
9240.0	9.9	China	10.0	18737.2	China
9171.4	9.8	Netherlands	9.8	18283.2	Netherlands
7178.8	7.7	Poland	7.7	14413.2	Poland
5204.6	5.6	Kingdom of Saudi Arabia	5.5	10333.2	Kingdom of Saudi Arabia
5018.6	5.4	Japan	5.3	9926.8	Japan
4098.4	4.4	United States of America	4.4	8322.8	United States of America
3486.6	3.7	Belgium	3.7	7006.2	Belgium
3328.4	3.6	Italy	3.5	6649.8	Italy
2468.4	2.6	France	2.6	4952.0	France
1652.2	1.8	United kingdom	1.8	3356.2	United kingdom
1279.0	1.4	Spain	1.4	2548.6	Spain
1072.8	1.1	Turkey	1.2	2167.6	Turkey
14860.0	15.9	other countries	16.1	30096.2	other countries
93324.6	**100**	**the world**	**100**	**187507.2**	**Countries**

Source: Calculated from tables (1, 2) in the appendix.

while China came in the third rank in terms of Egyptian exports from frozen strawberries, as the average quantity and the average value of Egypt's exports to China amounted to about 9,240 tons,18,737.2 thousand dollars, representing about 9.9% and 10.0% of the world average for each of them, respectively, while the

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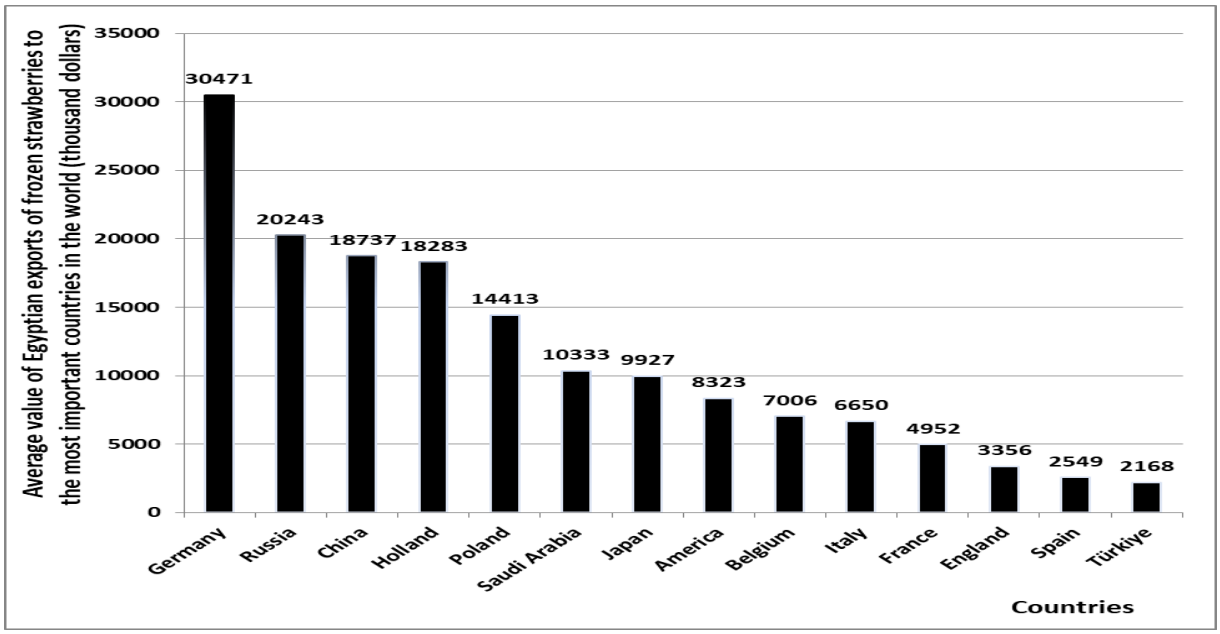
Netherlands came in the fourth rank in terms of Egyptian exports from frozen strawberries, as the average quantity and the average value of Egypt's exports to Netherlands amounted to about 9,171.4 tons, representing 18,283.2 thousand dollars for each of them, which represents about 9.8% from the world average, respectively. It is noted that the four countries (Germany, the Russian Federation, China and the Netherlands) represent the quantity and value of Egyptian exports from frozen strawberries at about 43,676.8 tons, or 87,734.6 thousand dollars, representing about 46.80% and 46.79% from the world average for each of them, respectively. Accordingly, the research will examine the foreign demand function for those countries to determine the most important influencing factors.

Figure (2) Development of the average value of Egyptian exports of frozen strawberries to the most important countries in the world (thousand dollars) during the period (2018-2022).



Source: Table (3) in the research.

Estimating the foreign demand of Egyptian frozen strawberries exports:

To estimate the foreign demand for Egyptian frozen strawberries for the imported market (QEX), a statistical model was formulated that contains the most important determinants, which are (Egypt's export price to the importing country, the export price of competing countries, the population of the importing country, and the average per capita income for the importing country).

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Statistical characterization of the double logarithmic model:

Ln $QEX_i = \beta_0 + \beta_1$ Ln Peg + β_2 Ln $P_1 + \beta_3$ Ln $P_2 + \beta_4$ Ln $P_3 + \beta_4$ Ln $P_4 + \beta_6$ Ln I + β_6 Ln POP

Where:

QEXi = the quantity of Egyptian exports to the importing country in tons.
Peg: Egypt's export price to the importing country.
P1: Export price of the first country competing with Egypt.
P2: Export price of the second country competing with Egypt.
P3: Export price of the third country competing with Egypt.
P4: Export price of the fourth country competing with Egypt.
I: average income of the importing country.
POP: Population of the importing country.

Through the use of both the stepwise regression method and the correlation matrix between the independent variables under study to get rid of the problem of multicollinearity, many attempts were made to determine the most important statistical models that determines the quantity of Egyptian exports to the most important European countries which import Egyptian frozen strawberries (Germany, Russia, China and the Netherlands), All the results obtained were consistent with economic logic. where the estimation results were as the following:

A- Function of the foreign demand for the German market from the Egyptian frozen strawberry exports:

The results of the statistical analysis for the demand function of the German market from the Egyptian frozen strawberry exports during the study period (2007-2022) show that an increase in the export price of Egyptian frozen strawberries and this results in a decrease in the quantity of Egypt's exports from frozen strawberries to Germany by 1.02%, and this means that the price elasticity of demand for Egyptian frozen strawberries, although negative slope and logical from the point of view of economic theory, is slightly greater than one, and therefore it is an elastic demand, meaning that the quantity of exports is affected by the Egyptian export price.
As it is shown an increase in the national income of the German market by 10% leads to an increase in the quantity of Egyptian exports of frozen strawberries by 115%,

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which means that the derived income elasticity is greater than one, and therefore it is a more elastic demand and is greatly affected by income.

By increasing the population of the German market by 10%, this leads to an increase in the quantity of Egyptian exports of frozen strawberries by 287%, which means that the derived elasticity for the population is greater than one, and therefore it is a more elastic demand, which means that the taste of the Russian consumer is compatible with Egyptian frozen strawberries. While increasing Poland's export price of frozen strawberries to the German market by 10%, this leads to an increase in the quantity of Egyptian exports of frozen strawberries by 14.9%, which means that the derived cross elasticity is greater than one, and therefore it is a more elastic demand and greatly affects Egypt's exports.

The significance of the model as a whole was proven at the level of 0.01. The results also showed that about 74% of the changes occurring in the exports quantity from frozen strawberries to the German market are due to changes in the export price of Egypt, the export price of Poland, the national income of the Russian market, and the population of the German market.

Ln Q Germ =	**-216.2**	**- Ln 1.02 P_{eg}**	**+ Ln 1.49 P Poland**	**+ Ln 11.5 I Germ**	**+ Ln 28.7 POP Germ**
	(-1.36)	**(-3.08)****	**(2.75)****	**(3.75)****	**(1.47)**

$R^2 = 0.76$ $Adj.R^2 = 0.67$ $F = 8.56$**

Where: Q Russ: The quantity of the Egyptian frozen strawberries exports to the German market in tons.

Peg: Egyptian export price for frozen strawberries to the German market in dollars/ton.

P Poland: Poland's export price for frozen strawberries to the German market in dollars/ton.

I Germ: National income of the Russian market in billion dollars.

POP: Population of the Russian market in million people.

Source: Results of statistical analysis using SPSS for data in Table (3) in the appendix.

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B- The foreign demand function of the Russian market from Egyptian frozen strawberry exports:

The results of the statistical analysis of the Russian market demand function for Egyptian frozen strawberry exports during the study period (2007-2022) show that increasing the export price of Egyptian frozen strawberries results in a decrease in the quantity of Egyptian exports from frozen strawberries to Russia by 7.9%, which means that the price elasticity of demand On Egyptian frozen strawberries, although it has a negative slope and is logical from the point of view of economic theory, it is less than one and therefore it is an inelastic demand, meaning that the quantity of exports is not affected by the Egyptian export price.

By increasing the population of the Russian market by 10%, this leads to an increase in the quantity of Egyptian exports of frozen strawberries by 4656%, which means that the derived elasticity for the population is greater than one, and therefore it is a more elastic demand, which means that the taste of the Russian consumer is compatible with Egyptian frozen strawberries.

While increasing the Belarusian export price of frozen strawberries to the Russian market by 10%, this leads to an increase in the quantity of Egyptian exports of frozen strawberries by 12.5%, which means that the derived cross elasticity is greater than one, and therefore it is a more elastic demand and greatly affects Egyptian exports.

the significance of the model as a whole was proven at the level of 0.0, results also showed that about 90% of the significant changes in the quantity of exports of frozen strawberries to the Russian market are due to changes in the Egyptian export price, the Belarusian export price, and the population of the Russian market.

$$\text{Ln } Q_{Russ} = -2308.6 - \underset{(-1.53)}{\text{Ln } P_{eg}} + \underset{(-9.65)^{**}}{0.79 \text{ Ln } 1.25\, P_{Bela}} + \underset{(3.45)^{**}}{\text{Ln } 465.6\, POP_{Russ}} \quad \underset{(9.62)^{**}}{}$$

$$R^2 = 0.92 \qquad Adj.R^2 = 0.90 \qquad F = 44.78^{**}$$

where: Q Russ: The quantity of Egyptian exports fro frozen strawberries to the Russian market in tons.

Peg: Egyptian export price for frozen strawberries to the Russian market in dollars/ton.

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P Bela: Belarusian export price for frozen strawberries to the Russian market in dollars/ton.
POP: Russian market population.
Source: Results of statistical analysis using SPSS for data in Table (4) in the appendix.

C- The foreign demand function of the Chinese market from Egyptian frozen strawberry exports:

The results of the statistical analysis of the Chinese market demand function for Egyptian frozen strawberry exports during the study period (2007 - 2022) show that increasing the ratio of the export price of Egyptian frozen strawberries to the export price of Moroccan frozen strawberries by 10% to the Chinese market will result in a decrease in the quantity of Egyptians frozen strawberries exports to the Chinese market by 10.2%, which means that the price elasticity of demand for Egyptian frozen strawberries, although negative and logical from the point of view of economic theory, is slightly greater than one, and therefore it is an elastic demand, meaning that the quantity of exports is affected by the Egyptian export price.
As It is shown that the population of the Chinese market has increased by 10%, which leads to an increase in the quantity of Egyptian exports from frozen strawberries by 484.5%, which means that the derived elasticity of the population of China is greater than one, and therefore it is a more elastic demand, which means that the taste of the Chinese consumer is compatible with the Egyptian Frozen strawberries.

$$\mathbf{Ln\ Q_{China} = 338.4 - Ln\ 1.02\ P_{eg}/P_{Moroc} + Ln\ 48.45\ POP_{China}}$$

$$\mathbf{(-1.64)\quad (-5.66)^{**}\quad (5.91)^{**}}$$

$$\mathbf{R^2 = 0.77\quad Adj.R^2 = 0.73\quad F = 21.73^{**}}$$

Where: Q Neth: The quantity of Egypt's exports of frozen strawberries to the Chinese market in tons.
02 P_{eg} / P Morocco: Ratio of Egypt's export price to Morocco's export price of frozen strawberries to the Chinese market in dollars/ton.
POP China: The population of the Chinese market is in one million people.
Source: Results of statistical analysis using SPSS for data in Table (6) in the appendix.

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the significance of the model as a whole was proven at the level of 0.01, The results also showed that about 73% of the significant changes in the quantity of Egyptian frozen strawberries exports to the Chinese market are due to changes in both the ratio of Egypt's export price to the Moroccan export price of frozen strawberries to the Chinese market and the number of Chinese population.

D- Foreign demand function of the Dutch market for Egyptian frozen strawberry exports:

The results of the statistical analysis of the Dutch market demand function for Egyptian frozen strawberry exports during the study period (2007-2022) show that by increasing Poland's export price by 10%, this leads to an increase in the quantity of Egyptian exports from frozen strawberries by 16.6%, which means that the derived cross elasticity for Egyptian frozen strawberry exports are larger than one, and therefore it is a more elastic demand and is greatly affected by competitive prices.

As it is shown that the population of the Dutch market increases by 10%, which leads to an increase in the quantity of Egyptian exports from frozen strawberries by 581.6%, which means that the derived elasticity of the population is greater than one, and therefore it is a more elastic demand, which means that the taste of the Dutch consumer is compatible with Egyptian frozen strawberries.

$$\text{Ln } Q_{Neth} = 166.7 - \underset{(-0.25)}{0.40 \text{ Ln } P_{eg}} + \underset{(-5.67)^{**}}{1.66 \text{ Ln } P_{Poland}} + \underset{(1.45)}{58.16 \text{ Ln } POP_{Neth}} \quad \underset{(4.47)^{**}}{}$$

$$R^2 = 0.80 \qquad Adj.R^2 = 0.75 \qquad F = 16.11^{**}$$

where:

Q Neth: The quantity of Egypt's exports of frozen strawberries to the Dutch market in tons.

Peg: Egypt's export price of frozen strawberries to the Dutch market in dollars/ton.

P Poland: Poland's export price of frozen strawberries to the Dutch market in dollars/ton.

POP Neth: Dutch market population in millions.

Source: Results of statistical analysis using SPSS for data in Table (7) in the appendix.

While increasing the export price of Egyptian frozen strawberries by 10% to the Dutch market results in a decrease in the quantity of Egypt's exports of frozen

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strawberries to the Dutch market by 4.0%, which means that the price elasticity of demand for Egyptian frozen strawberries, although it is negative slope and logical from the point of view of economic theory, is less than one and then it is an inelastic demand, meaning that the quantity of exports is not affected by the Egyptian export price.

The significance of the model as a whole was proven at the level of 0.01, The results also showed that about 75% of the significant changes in the quantity of exports from Egyptian frozen strawberries to the Netherlands are due to changes in the export price of Egyptian frozen strawberries to the Dutch market, the export price of Poland, and the Dutch market population.

Table (4): Summary of price elasticity, cross elasticity, and income elasticity of Egypt's exports of frozen strawberries to the most important European markets

The market	Price elasticity	Cross elasticity	Income elasticity
German	- 1.02	1.49 Poland	11.5
Russian	- 0.78	1.25 Bela	
Chinese	- 1.02		
Dutch	- 0.40	1.66 Poland	

Source: Results of statistical analysis of foreign demand functions for Egyptian frozen strawberries.

It is shown from Table (4) that the price elasticity of demand is less than one for the Russian and Dutch markets, and therefore Egyptian frozen strawberries represent a necessary commodity for these countries, while it was greater than one in the German and Chinese markets and this means it is an elastic commodity and therefore, Egyptian frozen strawberries are considered a luxury good for both Germany and China. As the cross elasticity of demand, it was greater than one in all markets, which means that Egypt's exports of frozen strawberries are affected by the prices of competing countries. Also, the income elasticity of demand was greater than one in the German market, which means more elastic demand and that Egypt's exports of frozen strawberries are affected by national income in the German market. As the population elasticity was greater than one in all markets, which means that the taste of the Bangladeshi consumer is compatible with Egyptian frozen strawberries.

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Recommendations:

Through the results of the statistical analysis for the research data, several recommendations were reached to develop the Egyptian frozen the following:

1- The price elasticity of demand is lower than one (inelastic demand) in the Russian and Dutch market for Egyptian frozen strawberries, which means that Egyptian frozen strawberries for those countries has great importance in these markets, such that the attempt of these countries to reduce the quantities of their exports from Egypt by increasing the export price is weak, which gives A great opportunity for Egypt to increase its export share of Egyptian frozen strawberries to those countries.

2- The price elasticity of demand is higher than one (elastic demand) for Egyptian frozen strawberries in the German and Chinese markets, which means that these countries have the ability to reduce the quantities of their exports from Egyptian frozen strawberries and import from other countries competing with Egypt when the price of Egyptian exports increases, which requires Paying attention to these countries and trying to increase the Egyptian market share in them by following appropriate and encouraging price and marketing policies.

3- Through the regression coefficient for the number of population, it is clear that Egyptian frozen strawberries are compatible with the taste of the external consumer, which encourages Egypt to search for opening new markets for Egyptian frozen strawberries and to pay attention to and maintain their quality.

4- improving methods for freezing Egyptian strawberries corresponding with the needs of the foreign market and public health.

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Appendix

Table (1): Geographical distribution for the quantity of Egypt's strawberry exports to the most important importing countries in tons during the period (2018-2022)

Countries	2018	2019	2020	2021	2022
Germany	12254	14799	13595	16352	18846
Russian Federation	7649	10115	8993	10285	13439
China	1833	5401	5451	13791	19724
Netherlands	6614	10009	9296	7740	12198
Poland	2232	6123	5016	8126	14397
King. of Saudi Arabia	5080	6983	4832	3315	5813
Japan	3615	6579	6308	4784	3807
U. S. of America	833	2258	2503	6490	8408
Belgium	2580	3078	3545	3847	4383
Italy	2659	4189	2388	3609	3797
France	1152	1825	2925	2743	3697
United kingdom	60	651	1288	2690	3572
Spain	1195	1779	832	1106	1483
Turkey	384	657	973	1462	1888
other countries	7029	11391	10809	24825	20246
Countries	55169	85837	78754	111165	135698

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

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Table (2): Geographical distribution of the value of Egypt's strawberry exports to the most important importing countries in thousand dollars during the period (2018-2022)

Countries	**2018**	2019	2020	2021	2022
Germany	26633	26284	26157	34798	38482
Russian Federation	16624	17965	17302	21886	27440
China	3983	9592	10488	29348	40275
Netherlands	14377	17776	17885	16471	24907
Poland	4852	10874	9651	17292	29397
King. of Saudi Arabia	11042	12402	9297	7055	11870
Japan	7858	11685	12137	10181	7773
U.S. of America	1810	4010	4816	13810	17168
Belgium	5608	5467	6820	8187	8949
Italy	5780	7441	4595	7680	7753
France	2504	3241	5628	5837	7550
United kingdom	130	1156	2477	5724	7294
Spain	2598	3160	1601	2355	3029
Turkey	834	1167	1872	3110	3855
other countries	15278	20235	20803	52826	41339
Countries	119911	152455	151529	236560	277081

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

Table (3): Development of Egypt's exports quantity from frozen strawberries to Germany and the factors affecting external demand during the period (2007-2022)

(Exports quantity: tons, export price: dollar/ton, national income: dollar billion, population: million people)

years	Quantity of exports	Egypt export price	Poland export price	Morocco export price	Netherlands export price	Spain export price	National income of Germany	Population of Germany
2007	1235	1037	1777	1217	1689	1320	3329.51	82.27
2008	1017	1760	2094	1676	1963	1541	3584.35	82.11
2009	421	1390	1327	1275	1982	1429	3575.76	81.90
2010	937	1194	1230	1156	1338	1104	3653.93	81.78
2011	1521	1393	2002	1189	1883	1425	3798.77	80.27
2012	2941	1838	2068	1398	1873	1361	3744.75	80.43
2013	50141	117	1878	1435	1816	1436	3807.84	80.65
2014	7128	1277	1575	1497	1781	1477	3858.31	80.98
2015	2551	1688	1196	1343	1393	2038	3740.02	81.69
2016	2703	1687	1227	1338	1491	1360	3646.62	82.35
2017	5958	1972	1697	1200	1623	1378	3617.06	82.66
2018	12254	2173	1995	1318	1760	1556	3937.44	82.91
2019	14799	1776	1827	1373	1665	1465	4105.52	83.09
2020	13595	1924	1720	1523	1846	1557	3989.01	83.16
2021	16352	2128	1773	1627	2013	1770	4329.96	83.20
2022	18846	2042	1698	1493	1743	1396	4527.64	83.80
average	9524.9	1587.3	1692.8	1378.6	1741.2	1475.8	3827.91	82.08

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

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Table (4): Development of the quantity of Egypt's exports from frozen strawberries to Russia and the factors affecting foreign demand during the period (2007-2022)

(Exports quantity: tons, export price: dollar/ton, national income: dollar billion, population: million people)

years	Quantity of exports	Egypt export price	China export price	Serbia export price	Belarus export price	Turkey export price	National income of Russia	Population of Russia
2007	190	421	1072	1156	850	——	1079.9	142.8
2008	196	1760	1156	1203	1174	——	1368.0	142.7
2009	49	1388	793	1353	1364	——	1318.5	142.8
2010	184	1060	950	1563	849	——	1425.2	142.8
2011	172	1215	1277	2349	1322	——	1581.3	143.0
2012	86	1849	1133	2220	792	——	1931.7	143.2
2013	943	1454	1193	2615	1441	1770	2179.4	143.5
2014	2133	1126	1399	2155	616	1900	2138.0	143.8
2015	1408	1688	1057	1692	513	1950	1725.2	144.1
2016	1698	1687	1068	1618	325	——	1426.9	144.3
2017	4745	1972	1366	1717	316	2263	1352.3	144.5
2018	7649	2173	1598	2512	782	2114	1505.2	144.5
2019	10115	1776	1554	2565	954	——	1655.6	144.4
2020	8993	1924	1257	2263	859	2000	1575.0	144.1
2021	10285	2128	1551	2339	1125	3000	1723.8	144.1
2022	13439	2042	1802	2128	1978	4000	1870.6	144.2
average	**3892.8**	**1603.9**	**1264.1**	**1965.5**	**953.8**	**2374.6**	**1616.0**	**143.7**

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

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Table (5): Development of the quantity of Egypt's exports from frozen strawberries to China and the factors affecting external demand during the period (2007-2022)

(Exports quantity: tons, export price: dollar/ton, national income: dollar billion, population: million people)

years	Quantity of exports	Egypt export price	Chile export price	Morocco export price	America's export price	Poland export price	National income of China	Population of China
2007	295	1169	1389	1336	1947	1667	3310.31	1317.89
2008	911	1762	1422	1396	1609	1906	4104.18	1324.66
2009	100	1400	1403	1015	1591	1573	4901.28	1331.26
2010	240	1308	1272	1145	1774	1630	5801.88	1337.71
2011	444	1457	1814	1507	1855	1711	6783.89	1345.04
2012	498	1398	1982	1290	1699	1612	8006.08	1354.19
2013	350	1440	2201	1466	1556	1890	9193.84	1363.24
2014	1517	1367	2063	1512	1551	1969	10246.59	1371.86
2015	813	1688	1997	1216	1280	1401	10883.16	1379.86
2016	1120	1687	2131	1268	3000	1472	11387.93	1387.79
2017	1585	1971	2186	1136	1949	2458	12104.95	1396.22
2018	1833	2173	2254	1366	1477	2244	13385.45	1402.76
2019	5401	1776	2047	1440	3583	2409	14512.89	1407.75
2020	5451	1924	1905	1296	3000	1757	14843.78	1411.10
2021	13791	2128	1941	1404	3714	1928	16883.57	1412.36
2022	19724	2042	1701	1320	3810	2158	18151.67	1412.18
average	3379.6	1668.1	1856.8	1319.6	2212.2	1861.6	10281.34	1372.24

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG

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Table (6): Development of the quantity of Egypt's exports from frozen strawberries to the Netherlands and the factors affecting external demand during the period (2007-2022)

(Exports quantity: tons, export price: dollar/ton, national income: dollar billion, population: million people)

years	Quantity of exports	Egypt export price	Poland export price	Morocco export price	Belgium export price	Spain export price	National income of Netherlands	Population of Netherlands
2007	497	1137	1581	1237	1682	1269	796.48	16.38
2008	804	1761	1906	1383	1862	1237	849.82	16.45
2009	69	1406	1157	1173	1664	1087	864.71	16.53
2010	159	1497	1136	1206	1602	1600	887.70	16.62
2011	480	1233	1906	1361	1824	1533	895.67	16.69
2012	394	1840	1860	1375	1919	1441	862.91	16.75
2013	555	1560	1720	1397	1733	1017	872.10	16.80
2014	2522	1302	1641	1412	1553	1461	870.31	16.87
2015	3063	1688	1179	1255	1420	1070	835.16	16.94
2016	1628	1687	1260	1310	1435	1235	791.58	17.03
2017	2601	1971	1537	1266	1371	1235	792.65	17.13
2018	6614	2174	1815	1464	1511	937	870.93	17.23
2019	10009	1776	1691	1376	1415	1342	900.78	17.34
2020	9296	1924	1649	1445	1504	1270	875.07	17.44
2021	7740	2128	1710	1712	1680	1178	1019.89	17.53
2022	12198	2042	1740	1588	1671	1005	1066.10	17.70
average	3664.3	1695.4	1593.0	1372.5	1615.4	1244.8	878.24	16.97

Source: Collected and calculated from the official website WWW.TRADEMAP.ORG