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FUNCTIONAL MODELS OF LOGISTICS MANAGEMENT IN THE DEVELOPMENT OF EXPORTS IN UZBEKISTAN

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ABSTRACT

In the context of the coronavirus pandemic, the world is seeing a slowdown in global economic growth in developed countries. This affected all sectors of the economy, including manufacturing, services, trade relations between countries and exports. The coronavirus pandemic is projected to slow global economic growth and lead to a global economic crisis, according to a report by the international rating agency Global Ratings. According to the international rating agency Global Ratings, in 2020 the export of goods and services decreased by 17.2% in the People's Republic of China, by 24.1% in the Italian Republic, by 21.3% in Spain and by 13.3% in Russia.

KEYWORDS: *Export, Logistics Management, International Standards, Export Control, Registration Of Export Operations, Transport Corridors, Functional Models Of Export Development, Red Corridor, Yellow Corridor, Green Corridor.*

INTRODUCTION

Scientists from developed countries have studied the impact of product standards on agricultural exports, research is underway on transport infrastructure and logistics quality as a source of comparative advantage and trade impact on overall environmental efficiency with countries participating in the China logistics industry's "Belt and Road".As a result, the global market is saturated with world-class quality goods and ensures that goods are exported and delivered to the global market at the lowest cost and on time.

Over the past three years, the country has undergone fundamental reforms in the system of regulation of export operations of foreign economic activity.In the Action Strategy for the Development of the Republic of Uzbekistan "deepening of structural changes and constant development of production, further strengthening of the country's food security, expansion of production of environmentally friendly products, a significant increase in the export potential of the agricultural sector"important tasks have been identified. Due to the development of regional exports, firstly, the inflow of foreign currency to the regional budget increases, secondly, new enterprises are being created, thirdly, new jobs are being created and, fourthly, the economic interest of the population is growing and this task is one of the the most important.

Research status

It is important to implement the tasks set in decisions and other regulatory documents, such as: No. PD-6042 of the President of the Republic of Uzbekistan dated August 18, 2020 “On additional measures to further develop the export and investment potential of the republic”, No. PD-5853 dated October 23, 2019 decrees "On approval of the Strategy of agricultural development of the Republic of Uzbekistan for 2020-2030", No. PD-5647 of February 1, 2019 "On measures to radically improve the system of public administration in the field of transport".

Research methodology.

In the coverage of this scientific article, methods of grouping, comparison, scientific thinking, economic-statistical, research objects and description of the obtained results were used.

Analysis and results.

Today Uzbekistan has risen to the level of a state with its own independent voice in the world community and has become a member of influential international organizations. He has established political, diplomatic, trade, economic and cultural ties with many of the world's leading economies. Bilateral and multilateral relations are developing steadily.

In this context, the development of foreign economic activity of the republic is determined by the availability of natural resources, production and scientific and technical capabilities, logistics infrastructure, agricultural products and services, the volume of agricultural exports to foreign countries.

One of the most important economic indicators that determine the foreign economic potential of the country is the volume of agricultural production, including the share of exported agricultural products per capita and the share of agricultural products in total exports of goods.

The structure of product exports is changing under the influence of scientific and technological progress and the deepening of the international division of labor. Manufacturing is currently the leading exporter of international trade, accounting for three quarters of world trade. The share of foodstuffs, raw materials and fuels is only a quarter.

In short, the importance of exports for the country's economy is as follows:

- contributes to the development of export-oriented production in the country, creates new jobs at enterprises and organizations producing export-oriented products.

-contributes to an increase in the inflow of foreign currency into the republic. Thus, the increase in agricultural exports is an important source of foreign exchange for the region.

-The main share in foreign trade operations carried out by residents of the republic is occupied by the countries of Asia (52.3%), Europe (38.5%), America (1.5%) and their share in the total trade turnover is 92.3%. done. This, in turn, is a positive shift in the export of industrial goods, which in recent years has accelerated foreign trade relations with the CIS countries and other countries of the world as a result of the liberalization of foreign trade relations with foreign countries.

In recent years, as a result of radical changes in the structure of industry, the agro-industrial complex and the service sector in the country, participation in foreign trade only in raw materials has been excluded. In particular, the share of cotton fiber in exports fell sharply (to 27.5% in 2000) and stood at 3.4% in 2019. The group of other goods with a share in exports of 35.7% also accounted for a certain share, while the volume of textiles in this group amounted to 1133.2 million rubles. US dollars and increased by 22.8% compared to the same period last year, services accounted for 25.2%, including transport services 11.6% and travel services 11.4%, energy and oil products increased by 13, 8%, and food - by 6.3%.

As a result of the adoption of the Law "On further simplification of the system of regulation of

foreign trade operations" in the country, customs control and registration of foreign trade transactions have been simplified, and the number of documents required for customs purposes has been reduced. Yellow, Red and Blue corridors.

Exports of food products, including fruits and vegetables and their processed products, which are expected to become one of the main components of Uzbekistan's foreign economic relations in the near future, amounted to USD 1.3 billion in 2019, which is 15.6% more than from to the previous year 2018. It should be noted that the laws and decisions on the further simplification of the export of goods, the agreements signed between the countries on the simplification of phytosanitary and quarantine measures in relation to food products have laid the foundation.

The main partners in foreign trade turnover are Kazakhstan (46.4% of the total), Russia (18.0%), Afghanistan (6.6%), China (5.7%), Turkey (4.5%) and Kyrgyzstan (4.3%). Our statistical analysis shows that in 2018, 2,697 exporters from our country were exported to 51 countries, and in 2019, 2,929 exporters were exported to 81 countries.

The range and geography of the country's exports are expanding from year to year, and for the first time in 2019, fruits and vegetables and their processed products were exported to Bulgaria, Sri Lanka, Indonesia, the Philippines, Greece, Qatar, Croatia and other countries. Malta.

In particular, in 2019, some types of food from the region were exported to Bulgaria and Sri Lanka, and some types of agro-industrial products were exported for the first time to Canada and Mongolia.

Food security is one of the most important factors in the development of the national economy of each country, solving the problems of social protection, and strengthening social stability. Ensuring food security largely depends on the level of development of the food and agricultural sectors.

In preparing this scientific article, an econometric analysis and a model for the development of production and export of food products in the Bukhara region were carried out.

Theresearch examined the influence of factors influencing the development of food and agricultural production in the Bukhara region and an increase in the export of grown fruits. (This econometric analysis was carried out on the example of agricultural products)

TABLE 1. TOTAL FRUITS GROWN IN THE BUKHARA REGION (APPLES, PEARS, QUINCE, ETC. THOUSAND TONS)

	2015	2016	2017	2018	2019
Bukhara	14315	16514	18262	20574	22453
Wobkent	11157	11425	14395	16850	17246
Zhondor	15308	17296	20185	21089	2489
Kogon	3267	3802	4134	4471	4729
Olot	4871	5742	60527	62841	65328
Peshkou	10813	13333	15029	17658	19378
Romitan	4150	4444	4705	49325	49537
Shofirkhon	6662	8126	9385	9873	10186
Korakol	8624	9014	9287	9827	10759
Koravulbazar	345	666	785	862	978
Gijduvan	8385	9860	10287	10257	10945
Bukharacity	1098	1235	1587	1736	1952
Kogoncity	16	17	24	59	75
Total:	89011	101474	168592	225422	216055

The table above shows the total volume of seeds grown in the Bukhara region in 2015-2019. According to this table, the growth of the indicator was observed in all districts of the region.

TABLE 2. TOTAL FRUITS GROWN IN BUKHARA REGION(APRICOTS, PEACHES, PLUMS, DATES, THOUSAND TONS)

	2015	**2016**	**2017**	**2018**	**2019**
Bukhara	12448	13817	15682	16824	17091
Wobkent	29170	33548	35801	37549	39214
Zhondor	15626	17721	18945	19341	20489
Kogon	2613	3112	3528	3896	4057
Olot	5293	4947	5287	5463	5734
Peshkou	16304	16277	17596	19354	21008
Romitan	17872	20817	21675	23424	25063
Shofirkon	12248	13773	15078	17652	19357
Korakul	11314	11775	12864	15304	18214
Korovulbozor	1349	1352	1536	1758	1957
Fijduvon	20106	22152	25864	26485	28067
Bukhoro	1124	1211	1428	1657	1832
Kogon city	22	22	22	22	22
throughout the region	**145489**	**160524**	**175306**	**188729**	**202105**

The table above shows the total cultivation of leguminous crops in the Bukhara region in 2015-2019. According to this table, the growth of the indicator was observed in all districts of the region.

Due to an insufficient number of observations of the data collected on the volume of agricultural exports in the Bukhara region (u1) and the factors affecting the volume of agricultural production in this region (u2), we do not consider the panel in this study. data type. Districts of Bukhara oblast were also taken as panel units. Data for each district is presented for 2011-2019.

A number of variables were selected as independent variables, including the volume of agricultural exports (u1) and the volume of agricultural production in the region (u2), and the following 2 mathematical functions were constructed:

$$y_1 = f_1 (x_1, x_2, x_3, x_4,).$$

In this case, u1 is the volume of exports of agricultural products of the Bukhara region (exp), x1 is seed fruits grown in the region (apples, pears, quince, etc., Efur), x2 is legumes grown in the region (fur), x3 is the amount orchards in the region, x4 is the volume of agricultural products (agr).

$$y_2 = f_2(y_1, x_3, x_5).$$

Y2 - the volume of agricultural production in the Bukhara region (qagr), u1 - the volume of agricultural exports in the Bukhara region (exp), x3 - the number of gardens in the region (gar), x5 - storage of agricultural products, the number of chambers (cam).

Of course, the volume of exports and agricultural production in the region depends not only on the factors selected above, but also on the state and local capital. The factors influencing arbitrary variables associated with government and local government decisions are taken into account in the study, since the volume of influence is small.

The correlation between the factors was observed in the districts of the Bukhara region from 2011 to 2019. To calculate the panel models described above, the study performs the following steps. First select an arbitrary variable. The regression model was chosen based on the theory of free variables. However, it should be noted that some of the variables are interrelated.When the two correlation coefficients perpeccop are high (although there is no multicollinearity problem), the highly correlated variables exaggerate the standard errors of the econometric model. When choosing variables for the model, one of the variables with the highest pairwise correlation

coefficient was selected. While the simple correlation coefficient does not account for correlations between time or panel units, it represents the relationship between the set of two variables under consideration.

Second, arbitrary and arbitrary variables change in panel units and time. The change in a variable over time is called the change over time, and the variance between regions is called the change between panel units and is calculated as follows:

Discontinuous dispersion:

$$S^2_{within} = \frac{1}{NT-1}\sum_{i=1}^{n}\sum_{t=1}^{i}(x_{it} - \overline{x}_2)^2 = \frac{1}{NT-1}\sum_{i=1}^{n}\sum_{l=1}^{i}(x_{it} - \overline{x}_2 + \overline{x})^2$$

Spread between panels:

$$S^2_{between} = \frac{1}{N-1}\sum_{i=1}^{n}(\overline{x}_1 - \overline{x})^2$$

Total variance:

$$s^2_{overall} = \frac{1}{NT-1}\sum_{i=1}^{n}\sum_{i=1}^{i}(x_{it-} \overline{X})^2$$

To calculate using panel models, it is advisable to allocate variations between time units and panels. In particular, when calculating the model of variable effects, inefficient estimates arise if the variation in time is less than the variation between the panel units.

Firstly, the aggregate model as a base model is evaluated by the ECC method. Although the ECC panel sampling calculation is not optimal, it is advisable to start the calculation of panel models with the ECC method.

In addition, when calculating the model uit=huitß+α+eit by ECC, the complex error obeys the law e_it~(0, σ_ε^2) as a prerequisite for testing hypotheses. This hypothesis cannot be satisfied with the panel data and, therefore, will not be effective if the calculated parameters are justified.

Secondly, although there are several empirical calculation methods based on panel data, the most common are immutable effects (OLS) and random effects (GLS-Generalized least squares mle-Maximum lickelyhood estimation). At the same time, if the observed interphase variables (various factors that cannot be measured) and the variational effects between the panel units affecting the export of agricultural products of the Bukhara region are strong, it is advisable to use a model of variational effects.

Thirdly, when choosing one of the invariant and random effects models, the Housman test is used. According to this test, it is known that the estimate of Ω1 corresponds to the estimate of Ω2, and it is assumed that the estimate of Ω2 is effective.

H0: Ω2b: Ω2 is an effective estimate of the actual parameter. If the null hypothesis is correct, there is no systematic difference between these two estimates, and a random effects model is used to calculate regression parameters. If the null hypothesis is correct, then a systemic difference arises between these two estimates, and the hypothesis put forward, i.e. the parameters calculated using the random effects model, is considered reasonable (effective) and the same model is used (Table 1).

Table 3. $y_{it} = x'_{it}\beta + z'_i\alpha + \varepsilon_{it}$ **RESULTS OF CALCULATION OF PANEL MODEL PARAMETERS**

	-1	-2	-3	-4
Arbitrary variable lg(exp)	**Composite model**	Cluster proof assembled model	**Fixed effects**	**Random**
lg(efur)	**0.486*** **	**0.486**	**0.734*** **	**0.728*** **
	(0.0842)	**(0.244)**	**(0.206)**	**(0.082)**

lg(fur)	**0.469*** **	**0.469**	**0.797**	**0.725***
	(0.119)	**(0.352)**	**(0.882)**	**(0.461)**
lg(gar)	**0.938*** **	**0.938****	**0.334***	**0.987****
	(0.229)	**(0.287)**	**(0.139)**	**(0.133)**
lg(agr)	**0.536*** **	**0.536**	**0.0349**	**0.892**
	(0.282)	**(0.357)**	**(0.275)**	**(0.267)**
Constant	**-6.865*** **	**-6.865*** **	**-10.64**	**-9.39*** **
	(0.832)	**(3.334)**	**(7.537)**	**(2.544)**
Кузатувлар сони	**117**	**117**	**117**	**17**
R^2	**0.956**	**.956**	**0.938**	**.944**
Вилоятдагитуманлар сони	**13**	**13**	**3**	**3**

Standard errors in parentheses: $***\rho < 0.01, **\rho < 0.05, *\rho < 0.1$

Aggregate models (models 1 and 2) regression parameter values calculated in the Stata program by ECC method and obtained in their models***p<0.01 , **p<0.05 and *p<0.1 was calculated using the levels of statistical significance. I. Their quantitative growth and other factors in conditions of immutability lead to an increase in the volume of exports of agricultural products of the Bukhara region.

1. Folding model and folding models resistant to clustering

$$\mathbf{lg}(exp_{it}) = \mathbf{0.486} * \mathbf{lg}\, efur + \mathbf{0.797} * \mathbf{lg}\, fur + \mathbf{0.938} * \mathbf{lg}\, gar + \mathbf{0.536} * \mathbf{lg}\, agr - \mathbf{6.865}$$

2. Model of immutable effects

$$lg(exp_{it}) = \mathbf{0.734} * lgefur + \mathbf{0.797} * lgfur + \mathbf{0.334} * lggar + \mathbf{0.034} * lgagr - \mathbf{10.64}$$

3. Randomeffectsmodel

$$lg(exp) = \mathbf{0.728} * lg\ efur + \mathbf{0.725} * lg\ fur + \mathbf{0.987} * lg\ gar + \mathbf{0.892} * lg\ agr - \mathbf{9.39}$$

It can be seen that the parameters calculated using invariant and random effects models differ somewhat from the parameters calculated by the ECC method. Firstly, the gestures of most display variables are almost identical.

Coefficients				
	(h) fixed	**(B) random**	**(b-B) difference**	**Sqrt(ding(V_b-V_B)) stsndard error**
Lg(efur)	**0.7339384**	**0.7612369**	**-0.02730**	**0.235684**
Lg(fur)	**0.1348664**	**0.2822.139**	**-0,14735**	**0.124586**
Lg(gar)	**0.7974828**	**0.7422687**	**0.055214**	**0.789253**
Lg(agr)	**0.3435135**	**0.3876112**	**-0.04410**	**0.532698**
B=	**B=consistent under Hoand Ha: obtaned from xtreginconsistent under Ha: efficient under Ho: obtained from xtreg**			
Test:H_0:	**Difference in coefficients not systematic , chi2(7)=(b-B)'{(V_b-V_B)^(-1)}(b-B)**			

In addition, in panel models, the expected parameter is the parameters with an unexpected gesture in accordance with the theory of the volume of exports of agricultural products of the region, calculated by the ECC method. That is, the parameters calculated taking into account the heterogeneity of the districts of the region remain reasonable. Secondly, the calculated parameters

in the models of immutable and random effects show close elasticity of each other.

That is, it can be seen that it is calculated practically at the same distance from its parameters calculated by the ECC method, in quantitative terms. That is, with an increase in the volume of seed fruits grown in the region by 1 percent, with other factors unchanged, the volume of exports in this area additionally increases by 0.734 percent (unchanged effects) and 0.728 percent (random effects) (Table 2).

Which of these two panel models best explains the change in the export volume of the region is explained by several criteria (cov(e_it*h_jit))=0. These include the individual statistical significance of the calculated parameters, although dependent on the general significance test (F-test, H2-test), but using the formal Hausman test.

According to correlation and regression analyses based on panel data for 2015-2019 in the context of districts of the Bukhara region, it was noted that there is a direct relationship between the early factor (seed fruits grown in the region (apples, pears, quinces, etc., fruit trees grown in the region, the number of orchards in the region, the volume of agricultural products) and the non-male factor (the volume of agricultural exports in the Bukhara region). According to the random effects model, with an increase in the volume of seed fruits grown in the province by 1%, provided that other factors remain unchanged, the volume of agricultural exports to the province will additionally increase by 0.728%, due to berry fruits -by 0.725%, due to an increase in the number of orchards in the province -by 0.987%, due to an increase in the volume of agricultural products - by 0.892%.

The volume of exports of agricultural products of the Bukhara region can serve as a basis for making a decision on the expediency of its interpretation using a random effects model.

An increase in the volume of exports of agricultural products, the number of gardens and storage chambers of agricultural products in the region by 1 percent will additionally lead to an increase in agricultural production in the Bukhara region by 0.711, 0.924 and 0.687 units, respectively.

CONCLUSION

The scientific articles consider theoretical and practical aspects of export development, including the importance of commodity production that meets international standards in the development of the export potential of the region. The development of exports is so important for the economy of our republic that this industry will quickly have a positive impact on the population of the republic, improve the standard of living, provide them with work. In this regard, the President of our country Sh.M.Mirziyoyev also noted that when visiting the regions of our republic, first of all, it is necessary to visit newly created enterprises, get acquainted with the process and hold conversations with workers.

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