IMPROVING THE ORGANIZATIONAL AND ECONOMIC MECHANISM FOR THE DEVELOPMENT OF INNOVATIVE PROGRAMMING SERVICES IN THE REGION

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ABSTRACT

This article discusses the role of programming services in the development of international trade in services. And issues related to the role and importance of increasing international trade in programming services in achieving employment and ensuring economic well-being were discussed. In order to develop programming services in the future, analyzes were conducted based on social surveys. And on the basis of these statistical analyzes, econometric models of forecasting the development of international trade in programming services were constructed and the results were obtained.

KEYWORDS: *Innovative Services, International Trade In Services, Programming Services, Export Of Services.*

INTRODUCTION

The role of the service sector and innovative services in the economies of developed and developing countries is growing rapidly. The share of services in the world economy is growing day by day. Taking into account the world experience, great attention is paid to the development of services in our country.

The Digital Uzbekistan 2030 Strategy envisages increasing the volume of exports of software products from $ 10 million in 2020 to $ 100 million by 2025, as well as increasing the share of the information technology sector in GDP by at least 4%. [1]

The share of the services sector in the country's GDP in recent years is 36%. The share of the services sector in the country's GDP in recent years is 36%. Economists have found that the

economy can be considered developed if the share of services in the country's GDP is 65% or higher.[3]

LITERATURE ANALYSIS

Schumpeter, often acknowledged as the "father of the field of innovation" explains that innovations took place only when inventions were accompanied by entrepreneurship: "… As long as they [inventions] are not carried into practice, inventions are economically irrelevant".[3] Hall and Rosenberg also define similar concepts of innovation, encompassing technical change in both products as well as organization. [4]

Later, many scientists conducted scientific research on innovations and interpreted them differently. In particular, John Ettlie, commented on innovation as follows. Service and manufacturing firms are different when it comes to innovation. Manufacturing is more likely to report the need for new strategies and structures when products are new to the industry or new to the firm. Services, on the other hand, are more likely to convert novelty into success. Services are significantly more likely to have a short beta testing process. [5] Innovation should not be confused with or mistaken for invention, the discovery of something previously not known. Further, product and process innovations may be radical or incremental, where radical innovation fundamentally changes the products offered while incremental innovation makes small and continuous improvements to an existing product. [6] For instance, Porter (1996) differentiates between product and process innovation: product innovation means doing new things while process innovation is about doing things differently. [7]

Michael Engman, an American economist, explains IT service sector makes intensive use of human capital, but is not particularly reliant on physical capital. An export-oriented IT service sector can thus thrive in a country with good technical education and limited infrastructure. [8]

The development of programming services has a huge impact on eliminating unemployment in the region, supply of domestic demand, exporting to foreign markets without any customs restrictions and rapid implementation of the digital economy. On the other hand, progress and development in information and communications technology (ICT) enabled remote provision of services that previously required consumer and provider to be in the same location.[9] The growth in modern economies will come from intellectually based services. Intellectual services, such as software, will be at the heart of service innovation in the foreseeable future. [10]

ANALYSIS AND RESULTS

It is necessary to increase the role of innovative services in the sustainable development of the country and its regions. In the process of rapid globalization, given the growing share of services in GDP, it is necessary to develop international trade in services. Based on the results of a survey on international trade in programming services, the impact of factors on the potential to increase exports of programming services was analyzed.

In order to implement the modeling, 11 factors influencing the development of international trade in programming services were taken and their impact levels were assessed. They are followings:

X1 - Importance of international trade (export) of programming services

X2 - Number of employees

X3 - Export volume in total trade

X4 - The level of exported software products (semi-finished or finished)

X5 - How long have you been operating?

X6 - The level of barriers and problems in the export of services

X7 - The level of barriers and problems in the import of services

X8 - Sufficiency of information about foreign markets

X9 - Sufficiency of information about trading partners

X10 - Importance of the project "One million Uzbek programmers"

X11 - Availability of skilled labor

According to the results of the analysis, the coefficients representing the effects of factors 6 and 11 were found to be adequate. The results are given in the table below.

TABLE 4 THE RESULTS OF THE ANALYSIS BASED ON THE EVIEWS PROGRAM

Dependent Variable: Y				
Method: ML - Binary Logit (Quadratic hill climbing)				
Date: 08/10/21 Time: 10:26				
Sample (adjusted): 1 55				
Included observations: 42 after adjustments				
Convergence achieved after 4 iterations				
Covariance matrix computed using second derivatives				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
X6	-0.723072	0.337652	-2.141470	0.0322
X11	1.050676	0.565343	1.858477	0.0631
Mean dependent var	0.404762	S.D. dependent var		0.496796
S.E. of regression	0.474991	Akaike info criterion		1.326807
Sum squared resid	9.024651	Schwarz criterion		1.409553
Log likelihood	-25.86295	Hannan-Quinn criter.		1.357137
Deviance	51.72590	Restr. deviance		56.69120
Avg. log likelihood	-0.615785			
Obs with Dep=0	25	Total obs		42
Obs with Dep=1	17			

Here:

Y - The ability of programming service providers to offer their software products to foreign markets;

X6- responses on the level of barriers and problems in the export of services (these responses are rated from one to five);

X11- availability of skilled labor (these answers are rated on a scale of one to three).

According to the results of this model, the level of barriers and problems in the export of services has a negative impact on the activities of enterprises in foreign markets. The coefficient representing this effect is adequate by all criteria. The availability of a skilled workforce has a positive impact. However, we can observe that the indicators representing the impact of this factor are adequate in the 90% confidence interval. That is, the r-value is 0.06, which should actually be 0.05 or less for a 95 percent confidence interval. Since the difference has an insignificant value, we found it appropriate to use a two-factor function.

$$P = \frac{e^{-0.723*X_6 + 1.051*X_{11}}}{1 + e^{-0.723*X_6 + 1.051*X_{11}}} \quad (1)$$

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$$\ln\left(\frac{P}{1-P}\right) = -0.723*X_6 + 1.051*X_{11} \quad (2)$$

    Here:

P - The ability of programming service providers to offer their software products to foreign markets;

Taking into account the influence of the given model and factors, we consider the probability that programming service providers will operate in foreign markets in cases corresponding to their different levels

TABLE 5 THE IMPACT OF THE REDUCTION OF BARRIERS AND PROBLEMS IN THE EXPORT OF SERVICES ON THE PROBABILITY OF EXPORTING PROGRAMMING SERVICES IN CONDITIONS OF UNSATISFACTORY AND MODERATE AVAILABILITY OF SKILLED WORKERS

	Coefficients	Options									
X6	0.723072	5	4	3	2	1	5	4	3	2	1
X11	.050676	1	1	1	1	1	2	2	2	2	2
	Y*=ln(p/(1-p))	-2.565	-1.842	-1.119	-0.395	0.328	-1.514	-0.791	-0.068	0.655	1.378
Probability	p=exp(y*)/ exp(y*)+1)	0.071	0.137	0.246	0.402	0.581	0.180	0.312	0.483	0.658	0.799
Limited effect			0.065		0.156		-0.401		0.171		0.141

According to the results of the calculations, the elimination of barriers and problems in the export of programming services at an unsatisfactory level of skilled workers will increase the export of these services from 7.1% to 58.1%. If the availability of skilled workers is moderate, then these quantities range from 18.0 to 79.9 per cent, respectively. It can be seen that the high

barriers to exports are important factors that negatively affect the access of programming companies to foreign markets.

Our government is taking a number of measures to develop programming services. In particular, the establishment of the project "One Million Programmers" is aimed at overcoming the problem of providing qualified personnel in this area. From the above measures, we can predict an increase in the number of skilled workers in the future. In this case, we would like to pay special attention to the impact of reducing barriers and problems in the export of services on the activities of programming companies to foreign markets.

TABLE 6 THE IMPACT OF THE REDUCTION OF BARRIERS AND PROBLEMS IN THE EXPORT OF SERVICES ON THE PROBABILITY OF EXPORTING PROGRAMMING SERVICES IN CONDITIONS OF HIGH AVAILABILITY OF SKILLED WORKERS

	Coefficients	Options				
X6	-0.723072	5	4	3	2	1
X11	1.050676	3	3	3	3	3
	$Y^*=\ln(p/(1-p))$	-0.463	0.260	0.983	1.706	2.429
Probability	$p=\exp(y^*)/(\exp(y^*)+1)$	0.386	0.565	0.728	0.846	0.919
Limited effect			0.178		0.119	

According to the results, if the availability of skilled workers is high, there is an opportunity to increase the probability of programming companies to enter foreign markets from 38.6% to 91.9% by reducing barriers and problems in exports.

In briefly, there is an opportunity to ensure the development of not only domestic but also foreign markets of innovative services provided by providing skilled workers and overcoming existing problems in entering foreign markets.

In general, at a time when the digital economy and knowledge-based economy are evolving, the development of programming services is directly related to the provision of skilled workers in this field and the elimination of barriers and restrictions in the export of software products to foreign markets. That is, by ensuring the positive results of both factors, the programming service has the potential to increase the efficiency of international sales to 91.9%.

In other words, there is an opportunity to increase the efficiency of programming companies in domestic and foreign markets to 91.9% by ensuring the positive results of both factors.

CONCLUSION AND RECOMMENDATIONS

The share of services in the economy of the region and the country, and the share of modern, innovative services in the structure of services differs sharply compared with developed countries. Development of innovative services based on knowledge and technology is an effective solution to increase the welfare of the population, reduce unemployment.

There is an opportunity to develop and organize all 12 types of services classified by the World Trade Organization in the region on the basis of innovations. With this in mind, focusing on

innovative programming services to increase the export potential of the region will bring great economic benefits in the near future. Motivating the younger generation to take an interest in the field, increase their knowledge of programming, and teach foreign languages are important in increasing the number of programming professionals.

In conclusion, the following measures will need to be taken to develop international trade in programming services:

Promote for the development of programming services

Infrastructure improvement

Removal of barriers to the provision of programming services

Improving the quality and quantity of staff in the field of programming services

Access to payment systems (PayPal)

Establishment of special economic zones and IT parks

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