ECONOMICAL ANALYSIS OF INCREASING THE EFFICIENCY OF DIGITALIZATION OF ADVERTISING SERVICES

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ANNOTATION:

The article suggested ways to develop and increase the efficiency of advertising services in Samarkand region, studied the factors affecting advertising services, evaluated the results of the multifactorial regression equation and developed a forecast for the next three years.

Keywords: advertising, efficiency, forecast parameters, econometric analysis, linear trends.

INTRODUCTION:

Digitization of advertising services in Uzbekistan and on this basis to increase the efficiency of the industry is a very important task, in this regard, the President of the Republic of Uzbekistan Sh. Mirziyoyev in 2022

According to the Decree No. PF-60 of January 28, the task is to "work to make the digital economy the main" driver "sector and increase its volume by at least 2.5 times, based on the goals set in the" New Development Strategy of Uzbekistan for 2022-2026. "

Therefore, in the context of the transition to a digital economy in the country, it is necessary to develop and increase the efficiency of advertising services in all sectors and industries, in particular, to form a system of indicators and determine the effectiveness. Therefore, it is important to find ways to develop and increase the efficiency of advertising services in the country, to study scientific problems in the development of the market of advertising services.

It plays an important role in expanding the economic system by encouraging consumers to buy more goods or services through the implementation of advertising services. This will have an impact on improving the overall state of the economy.

In the long run, advertising can play a big role in making people more prone to high levels of consumption and creating new products and ideas. Thus, advertising directly and indirectly increases employment.

Advertising works not in a vacuum, but in a market environment where multiple forces, such as consumer needs, business interests, and government regulations, operate. It is a powerful force in terms of persuasion and plays a decisive social role.

According to Czinkota and Kotabe, advertising is an indirect communication with the customer. This is only half of the communication. If an ad doesn't meet customer needs, it will fail no matter how creative. According to Armstrong, advertising appeals are about identifying the preferences of customers that can be used. That is, people react to advertising only if they believe they will benefit from it. Advertising appeals should have three characteristics; meaningful, reliable and distinctive. Meaningful - means that the product should show the advantages that the consumer likes or is more interested in. Reliable - Consumers need to believe that the product or service will deliver the promised

benefits, and finally, the distinctive and superior aspects of the product from competing brands should be mentioned.

In general, the effectiveness of advertising services is largely due to changes in sales, while sales are inextricably linked to economic activity. Therefore, the level of development of advertising services indirectly reflects the level of development of the economy. As with other services, developing a long-term strategy is important in the development of advertising services. In developing the strategy, it is important to calculate the forecast parameters of the factors that serve to create a favorable environment for the development of advertising services.

LITERATURE REVIEW:

The American Marketing Association (2016) defines advertising as "any advertisement or persuasive message placed by a person, company, or organization identified in paid or donated time or space in the media". According to Beerli et al. advertising is effective if it encourages the intentions and affects the feelings of the customer.

According to Ramalingam et al. (2006), effective advertising has two main characteristics. First, the advertiser must meet the consumer's goals by engaging the customer in the product or service experience and sending the customer an appropriate promotional message. Second, the advertisement must be in line with the advertiser's goals. Effective advertising has three dimensions: strategy, creativity, and execution. Firms need to combine these three elements to create effective advertising.

Sales volume and communication effects can be used to measure advertising effectiveness. Although sales volume is affected by a variety of factors not directly related to advertising, including pricing, packaging, and distribution quality, it is considered an appropriate criterion for measuring advertising effectiveness. Because communication effects can be measured, they can also be used as criteria for measuring advertising effectiveness. As a result of limited monetary resources for advertising, contradictions between customer relationships and their expectations, and highly competitive markets, advertising effectiveness has become an important issue for many organizations (Riasi, 2015b).

American researcher Daniel Starch began studying the impact of the form of advertising on its effectiveness in the 1930s "before electronics". Decades later, in the heyday of "verbal" media - radio and television, Marshall McLuhan called the type of media the most important factor in determining the essence of a message and its perception. As for the impact of advertising on the editorial staff of media selected as an advertising medium, researchers only began to pay due attention to it in the early 20th and early 21st centuries.

METHODOLOGY:

In this article, we have developed a linear econometric model to analyze the factors affecting advertising services in Samarkand region. The algebraic view of this model is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + .. + \beta_n X_n + \varepsilon$$

Here α − ozod had, $\beta_1, \beta_2, ... \beta_n$ − coefficients, $X_1, X_2, ... X_n$ − factors, ε − error.

The analysis aimed to test the following hypothesis:

$H_0 − \beta_1 \neq 0 \, || \, \beta_2 \neq 0 \, || \, ... \, || \beta_n \neq 0$, that is, the effect of at least one factor on an involuntary variable is statistically significant.

$H_1 − \beta_1 = 0 \, || \, \beta_2 = 0 \, || \, ... \, || \, \beta_n = 0$, that is, the effect of any factor on an involuntary variable is not statistically significant.

ANALYSIS AND RESULTS:

We have selected the following factors that may affect advertising services in Samarkand region:

X_1- The share of small business and entrepreneurship in GDP, in percent

X_2- Retail trade turnover per capita in Samarkand region, thousand soums

X_3- GDP per capita, thousand soums

X_4- volume of investments per capita, thousand soums

Figure 1. Dynamics of advertising services in Samarkand region

A histogram of the distribution of advertising services is shown in the diagram above. As can be seen from this diagram, from 2010 to 2019, advertising services in Samarkand region grew exponentially. In 2020, it will decrease by almost 30% due to the negative impact of the pandemic.

In general, the factors we selected appear to be changing synchronously with the involuntary variable (volume of advertising services) at a glance (Table 1), but this assumption needs to be verified. Therefore, a correlation matrix was first obtained to determine whether there was a multicollinearity state between the factors.

Table 1. Dynamics of advertising services and factors influencing them

Years	GDP per capita per thousand soums-X3	Retail trade turnover per capita in Samarkand region, thousand soums-X2	The share of small business and entrepreneurship in GDP is X1 percent	Total advertising services. (thousand soums) -Y
2010	2 061,3	526,8	52,5	6300,00
2011	2 491,6	669,6	54,0	7700,00
2012	2 968,3	903,5	54,6	13600,00
2013	3 627,9	1 127,0	55,8	28750,00
2014	4 447,2	1 405,1	56,1	61000,00
2015	5 216,0	1 712,5	62,9	91300,00
2016	6 380,5	2 102,1	64,9	143500,00
2017	7 335,8	2 434,5	63,4	279500,00
2018	8 741,5	2 958,7	60,4	769000,00
2019	10 174,4	3 615,7	54,2	1289000,00
2020	11 204,0	4 231,4	53,9	873000,00

Table 2. Correlation matrix

	ln Inv	ln Jyaim	consumer price index	The share of small business and entrepreneurship in GDP is in percent
ln Inv	1			
ln Jyaim	0,97	1		
consumer price index	0,75	0,68	1	
The share of small business and entrepreneurship in GDP is in percent	0,19	0,38	-0,11	1

Table 2 shows that GDP per capita and per capita investment are strongly correlated (0.95). Therefore, in econometric analysis, we perform the analysis by taking only one of these factors.

Table 3. The result of the primary econometric analysis

	R square	Coefficients	Standard error	t-statistics	P-Meaning	F-statistics
Y- intersection		-21,1845	2,44	-8,67	0.000	
ln JYAIM-X1	0,99	2,95	0,2	14,45	0.000	0,000
consumer price index -X2		0,06	0,03	2,34	0,05	
The share of small business and entrepreneurship in GDP is in percent -X3		0,009	0,02	0,47	0,65	

As can be seen from Table 3, the impact of the share of small business and entrepreneurship on GDP on the Y variable is not statistically significant (p-value 0.65). In particular, the very high value of the square R is due to the high correlation correlation between some free variables, i.e., the multicollinearity state. However, the effect of the remaining factors on the involuntary variable is statistically significant. Based on this, we construct the following regression equation:

$$lnY = 2,95 * lnX_1 + 0,06 * X_2 - 21,85 \ (1)$$

In other words, a 1% increase in GDP per capita will increase the involuntary variable by 2.95%, while a 1% increase in consumer prices will increase the volume of advertising services by 6%.

In addition to the model mentioned above, we have the opportunity to test another model. We will now repeat the analysis by taking the per capita investment volume variable instead of the GDP per capita.

Table 4. Factors affecting advertising services and the dynamics of per capita investment

Years	ln Inv	consumer price index	The share of small business and entrepreneurship in GDP is in percent	ln reklama_xiz
2010	5,84	106,9	52,5	8,75
2011	6,01	107,1	54,0	8,95
2012	6,16	107,2	54,6	9,52
2013	6,44	107,0	55,8	10,27
2014	6,59	106,4	56,1	11,02
2015	6,82	105,5	62,9	11,42
2016	6,91	105,6	64,9	11,87
2017	7,08	109,5	63,4	12,54
2018	7,54	117,5	60,4	13,55
2019	7,89	114,5	54,2	14,07
2020	8,14	112,9	53,9	13,68

By entering the data in Table 4 through the Package Analysis software of Excel, we obtain the following econometric analysis results (Table 5).

Table 5. Results of secondary econometric analysis

	R-square	Coefficients	Standard error	t-statistics	P-Meaning
Y- intersection		-14,77	3,86	-3,83	0,006
ln Inv-X4		2,11	0,21	10,01	0,000
consumer price index - X2	0,98	0,06	0,04	1,65	0,14
The share of small business and entrepreneurship in GDP is in percent -X3		0,08	0,02	3,54	0,009

As can be seen from Table 5, the effect of the consumer price index on the Y variable is not statistically significant at 90% confidence level (p-value 0.14). In particular, the very high value of the square R is due to the high correlation correlation between some free variables, i.e., the multicollinearity state. Based on this, we construct the following regression equation:

$$lnY = 2,11 * lnX_4 + 0,08 * X_3 - 21.85 \ (2)$$

In other words, a 1% increase in per capita investment will increase the involuntary variable by 2.11%, and a 1% increase in the share of small business and entrepreneurship in GDP will increase the volume of advertising services by 8%.

In general, it is advisable to adopt the results of the primary econometric model because in the primary model the R square value is relatively high and the standard error is relatively low. Thus, according to the primary model, the volume of advertising services in Samarkand region is strongly influenced by GDP per capita and inflation.

We will now use the linear trending method to provide a forecast of advertising services for the next three years. The essence of this method is that the trend line closest to the change function of the arbitrary variable is selected and the forecast is made on this basis.

In Samarkand region, the exponential curve corresponds to the line of change of advertising services. This is due to the fact that

from 2010 to 2019, the growth rate of advertising services increased from year to year.
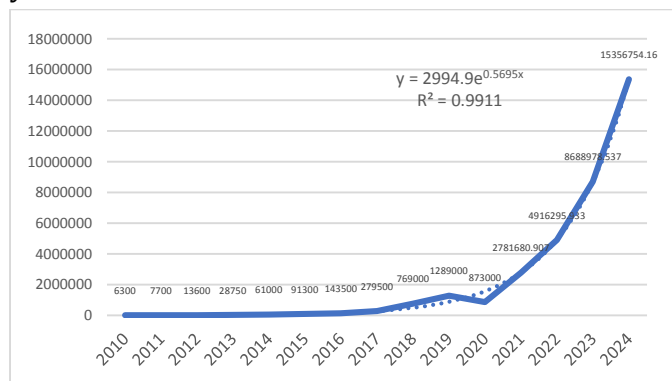

Figure 2. Forecast of the volume of advertising services in Samarkand region.

In Figure 2, we assume that advertising services grew in an exponential trend until 2019, but that exponential growth will continue in 2021 and beyond, despite a decline in 2020. This hypothesis can be substantiated as follows:

We know that the development of advertising services until 2016 was very slow, ie limited media activities, strong censorship and the promotion of entrepreneurship was not through the creation of a competitive environment, but through the application of protectionist policies. However, after 2016, with the change of leadership of the republic, the implementation of economic policy based on the principles of promoting freedom and healthy competition has led to the rapid development of advertising services, and this trend has not yet reached saturation.

Table 6. Dynamics of advertising services in Samarkand region for 2021-2024

Years	Volume of advertising services
2019	1289000
2020	873000
2021	2781681
2022	4916296
2023	8688979
2024	15356754

The exponential trend in this Table 6 $Y_{rek\_xiz} = 2994,4 * e^{0,5695t}$ the forecast results calculated by the function are given. It can be seen that from 2021, the volume of advertising services will continue to grow on average twice as much as in the previous year.

Thus, according to our forecast, advertising services in Samarkand region will recover rapidly in 2021, despite the decline in 2020, and by 2024 will reach 15 billion soums.

CONCLUSIONS AND SUGGESTIONS:

Based on the above, advertising services in Samarkand region are inextricably linked with GDP per capita and inflation. As the development of advertising services aims to stimulate sales, it is strongly linked to changes in the income of the population. That is, an increase in income (GDP per capita is given as an indicator of income) increases the ability of the population to purchase goods and services. This has a positive effect on the efficiency of advertising services. The reason for the impact of the inflation rate on the volume of advertising services is that in the study we estimated the volume of advertising services at current prices, ie prices at which inflation is not excluded, so the impact of this factor was positive.

The development of advertising services is in many ways also associated with the development of small business and entrepreneurship. Therefore, we decided to use the indicator of the share of small business and entrepreneurship in GDP in the econometric analysis to assess the impact of changes in the volume of advertising services. According to the results of the secondary econometric analysis, a 1% increase in the share of small business and entrepreneurship in GDP will lead to an 8% increase in the volume of advertising services. Of course, the reason for such high elasticity is that these small businesses are the main consumers that shape the demand for

advertising services. That is, with the increase and development of the number of small businesses, the demand for advertising services will increase. Therefore, the results of the analysis have a completely logical basis.

In the development of advertising services in Samarkand region, in our opinion, it is expedient to:

1) 1) Introduction of automatic solution of existing bureaucratic problems in small business and entrepreneurship through digital platforms, thereby reducing unnecessary costs in this sector;

2) 2) Incentives, competitions, awards for qualified IT professionals and graphic designers who play a key role in the provision of advertising services;

3) 3) Encourage the creation of new forms of entrepreneurship (venture funds, incubators), reduce barriers to attracting foreign investment and maximize the process;

4) 4) Development of a clear mechanism of government intervention in the publication of advertising, a clear definition of the level of responsibility for advertising content;

5) Organization of international seminars and trainings to stimulate the activities of enterprises or individuals providing Internet advertising services, the creation of quality advertising content.

The above proposals can help to create a favorable environment for the development of advertising services in Samarkand region, to provide advertising services at the level of world standards, to minimize bureaucratic barriers to entrepreneurship.

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