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FACTORS INCREASING THE RECREATIONAL AND TOURISM POTENTIAL IN RURAL AREAS

As an appropriate approach to study the impact of factors on the use of recreational and tourism potential in rural areas we used in our research regression and correlation method. The essence of this method is to analyze statistical data and identify the statistical strength and significance of relationship between the input variables and resulting indicators that reflect use of recreational and tourism potential.

Table 1 demonstrates the factors which influence the use of recreational and tourism potential of the region in rural areas

Table 1

Factors which influence the use of recreational and tourism potential of the region in rural areas (for conducting regression and correlation analysis)

№	Independent variables	Dependent variables
1.	Number of specialized institutions, units	Sales volume of services, million UAH
2.	Number of hotels and accommodation facilities, units	Sales volume of services, million UAH
3.	Investment in fixed assets, million UAH.	Number of hotels and accommodation facilities, units
4.	Investment in fixed assets, million UAH.	Number of tourism establishments, units
5.	Foreign direct investment, million USD.	Number of hotels and accommodation facilities, units
6.	Foreign direct investment, million USD.	Number of specialized institutions, units
7.	Emissions of harmful substances into the atmosphere from stationary and mobile sources, thousands tons	Number of tourists, thousand persons

Source: developed by the author

The dependence of sales volume of services on the number of specialized institutions of Western Ukraine (regional pattern) and Ukraine is represented by following linear regression equations:

$$Y_1 = -227,61 x_1 + 97181; R^2 = 0,925 \quad (1.1)$$

$$Y_2 = -202,62 x_2 + 826823; R^2 = 0,509 \quad (1.2)$$

where Y_1 , Y_2 – the sales volume in services of Western Ukraine and Ukraine, mln. UAH; x_1 , x_2 – the number of specialized institutions in Western Ukraine and Ukraine, units.

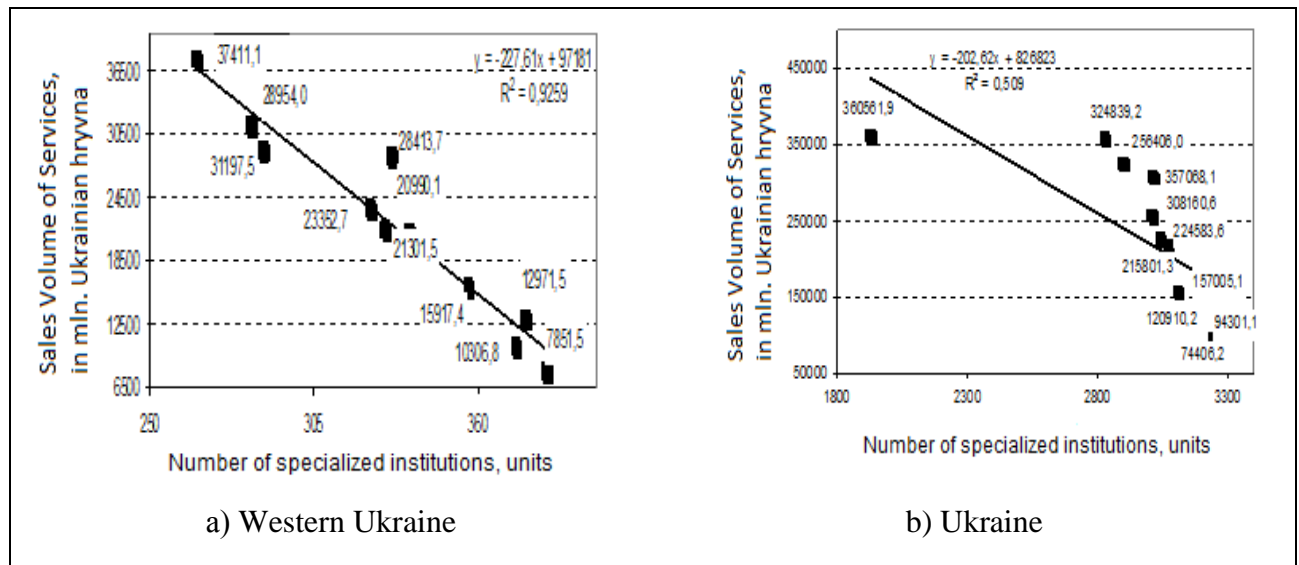


Figure 1. Dependence of the sales volume of services on the number of specialized institutions of Western Ukraine and Ukraine

The results of correlation analysis show that a strong negative linear relationship exists between sales volume of services and number of specialized institutions, as evidenced by the correlation coefficients $r_{wu} = -0,962$ and $r_u = -0,770$ (correlation considered significant with a coefficient > 0.6). As shown in Fig. 1 (a, b) the coefficients of determination are $R^2 = 0,925$ for Western Ukraine and $R^2 = 0,509$ for Ukraine. So, the results of regression analysis indicate that sales volume of services depends by 92,5% and 50,9 % respectively on the change in number of specialized institutions. According to Student's t-test, all parameters of this dependence are significant, because obtained values of t-statistic exceed the critical tabular values.

Dependence of the sales volume of services on the number of hotels and accommodation facilities of Western Ukraine and Ukraine will significantly affect the increase in sales volume of services and performance of greater number of competing hotels; the best conditions are determined by location and wide range of services.

The linear regression equations of the sales volume of services on the number of hotels and accommodation facilities of Western Ukraine (regional pattern) and Ukraine are the following:

$$Y_3 = 27,642 x_3 + 6880,8; R^2 = 0,825 \quad (1.3)$$

$$Y_4 = 105,04 x_4 + 10391; R^2 = 0,808 \quad (1.4)$$

where Y_3 , Y_4 – the sales volume of services of Western Ukraine and Ukraine, mln. UAH; x_1 , x_2 – the number of hotels and accommodation facilities, units.

The scatterplots of the relationship between sales volume of services and the number of hotels and accommodation facilities of Western Ukraine and Ukraine are shown in Fig. 2.

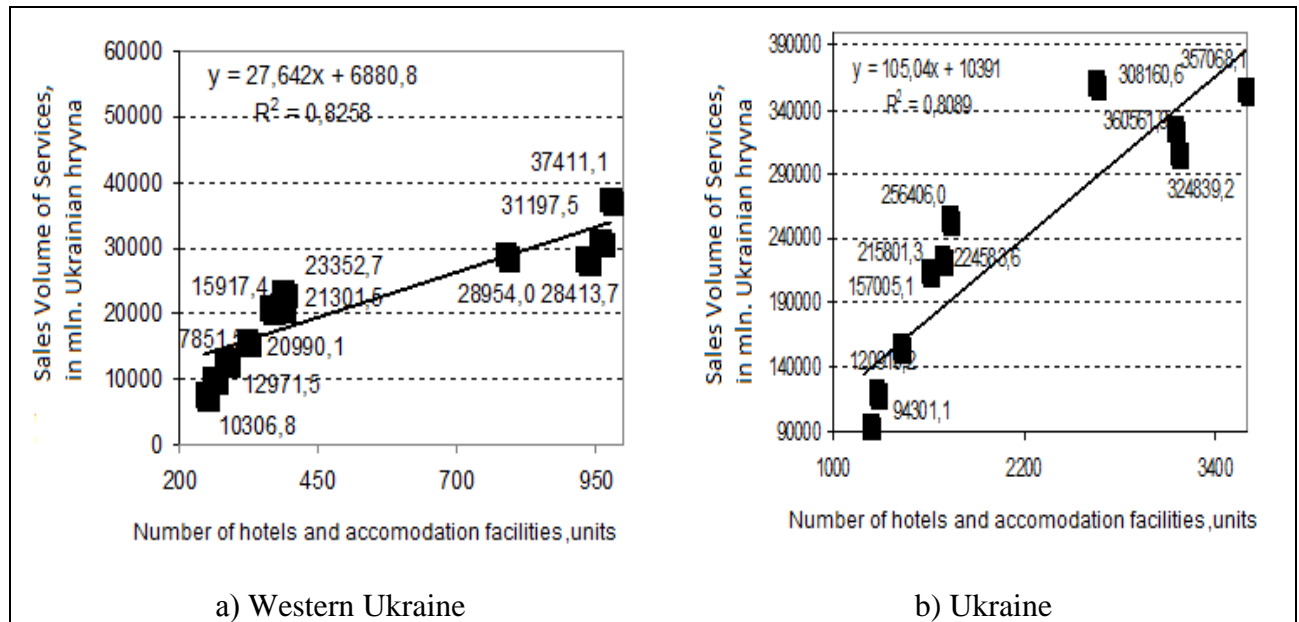


Figure 2. Dependence of the sales volume of services on the number of hotels and accommodation facilities of Western Ukraine and Ukraine

The results of correlation analysis conducted for this pair of indicators demonstrate a strong positive linear relationship, as evidenced by the correlation coefficients ($r_{wu} = 0,908$ for Western Ukraine; $r_u = 0,899$ for Ukraine) and determination coefficients ($R^2 = 0,825$; $R^2 = 0,808$ respectively).

Dependence of the number of hotels/specialized institutions on investment in fixed capital in Western Ukraine (regional pattern) and Ukraine is represented in following linear regression equations:

$$Y_5 = 0,0256 x_5 - 65,331; R^2 = 0,415 \quad (1.5)$$

$$Y_6 = 0,0104 x_6 + 164,67; R^2 = 0,660 \quad (1.6)$$

$$Y_7 = - 0,0038 x_7 + 421,93; R^2 = 0,566 \quad (1.7)$$

$$Y_8 = - 0,0025 x_8 + 3418,5; R^2 = 0,226 \quad (1.8)$$

where Y_5 , Y_6 – the number of hotels, units; Y_7 , Y_8 – the number of specialized institutions of Western Ukraine and Ukraine, units; x_5 , x_6 , x_7 , x_8 – investment in fixed capital, mln. UAH.

As shown in Fig. 3 there is a significant correlation between investment in fixed capital and number of hotels (Y5 and Y6). The analysis results show following correlation coefficients ($r_{wu} = 0,644$ for the Western Ukraine; $r_u = 0,812$ for Ukraine) and determination coefficients ($R^2 = 0,415$; $R^2 = 0,660$ respectively). Although positive significant relationship exists between these two factors in both patterns, it is weaker in the Western Ukraine (Fig. 3a) compared to Ukraine (Fig. 3b).

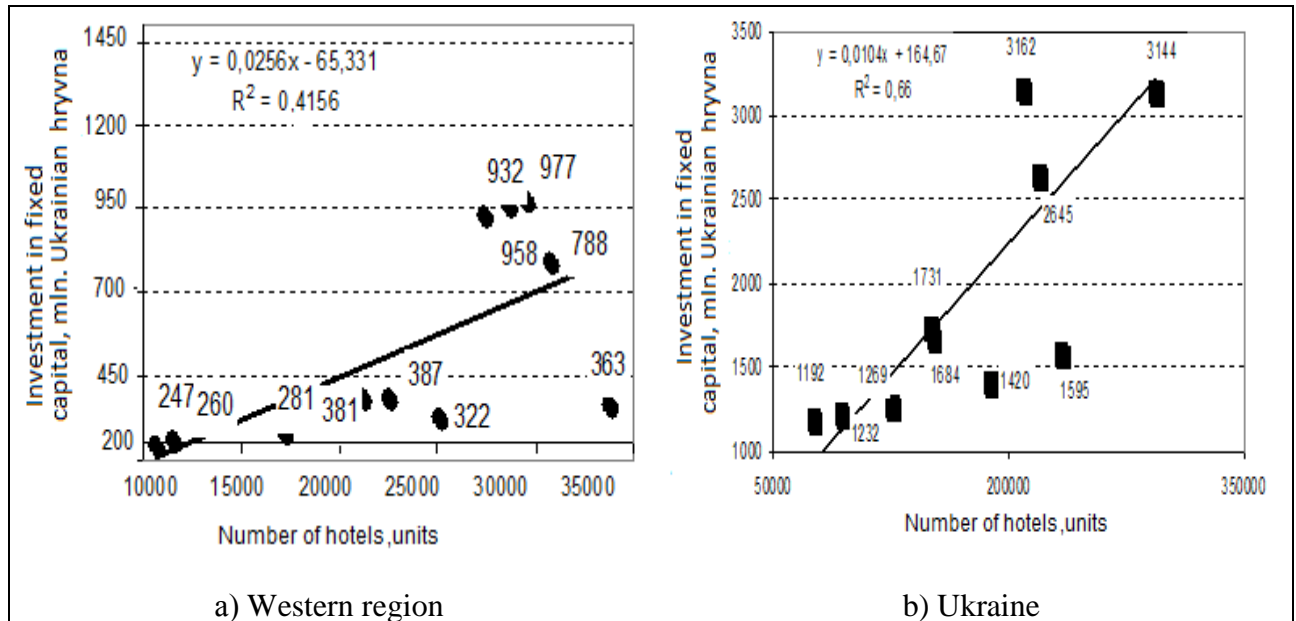


Figure 3. Dependence of the number of hotels on investment in fixed capital in Western Ukraine and Ukraine

According to our analysis the dependence of the number of specialized institutions (Y7 and Y8) on investment in fixed capital in Western Ukraine and Ukraine is indicated by a stronger negative correlation coefficient for Western Ukraine ($r_{wu} = -0,752$) compared to Ukraine ($r_u = -0,476$). The negative significant statistical relationship shows inverse effects of increase in investments in fixed assets on the number of specialized institutions every next year.

Thus, the correlation and regression analysis implies that among the above six pairs of variables investment in fixed assets is one of the main infrastructural factors which reflects intensive use of recreational and tourism potential, because its development is essential to replenish and preserve assets that require some investment.

Among important benchmarks for our regression and correlation analysis we input the indicator of foreign direct investment, which is obviously an influential factor in the model of use of recreational and tourism potential of the region in rural areas.

Dependence of number of hotels/specialized accommodation establishments on foreign direct investment in Western Ukraine (regional pattern) and Ukraine expressed by the following linear regression equations:

$$Y_9 = 0,2538 x_9 - 103,37; R^2 = 0,644 \quad (1.9)$$

$$Y_{10} = 0,049 x_{10} + 257,88; R^2 = 0,762 \quad (1.10)$$

$$Y_{11} = -0,0373 x_{11} + 425,51; R^2 = 0,840 \quad (1.11)$$

$$Y_{12} = -0,012 x_{12} + 3404,7; R^2 = 0,272 \quad (1.12)$$

where Y_9, Y_{10} – number of hotels in Western Ukraine and Ukraine, units; Y_{11}, Y_{12} – number of specialized accommodation establishments, units; $x_9, x_{10}, x_{11}, x_{12}$ – foreign direct investment, mln. \$ USA.

According to the results of our analysis there is a strong positive correlation between number of hotels and volume of foreign direct investment in Western Ukraine and Ukraine respectively. Although positive significant relationship exists between these two factors in both patterns, it is weaker in the Western Ukraine compared to Ukraine. The values of the correlation coefficient ($r_{zw} = 0,802$ for Western Ukraine; $r_u = 0,873$ for Ukraine) and determination coefficient ($R^2 = 0,644$; $R^2 = 0,762$ respectively). The statistical relationship between number of specialized accommodation establishments and foreign direct investment is negative for both patterns and much stronger for Western Ukraine compared to Ukraine. For the pattern Ukraine for this pair of indicators the correlation is statistically weak.

The dependence of the number of tourists on the degree of harmful emissions into the atmosphere from stationary and mobile sources, expressing improvement (deterioration) of environmental conditions in the region, is represented by linear regression equations:

$$Y_{13} = 2,5405 x_{13} - 1422,9; R^2 = 0,422 \quad (1.13)$$

$$Y_{14} = 0,2426 x_{14} + 885,57; R^2 = 0,084 \quad (1.14)$$

where Y_{13}, Y_{14} – number of tourists of Western Ukraine and Ukraine, thousand persons; x_{13}, x_{14} – the amount of harmful emissions into the atmosphere from stationary and mobile sources, respectively, thousand tons.

Our calculations show that there is a statistically weak correlation between the selected pair of indicators for Ukraine, but average strong and statistically significant one for Western Ukraine. The values of the correlation coefficient ($r_{zw} = 0,649$ for Western Ukraine; $r_u = 0,290$ for Ukraine) and determination coefficient ($R^2 = 0,422$; $R^2 = 0,084$ respectively). This correlation and regression analysis of factors which influence the use of recreational and tourism potential in rural areas of Western Ukraine (as regional pattern) and Ukraine in general, has shown that there is a strong and statistically significant dependence primarily on the external and internal investment for both patterns, and on the ecological state of the environment for Western Ukraine.

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РЕГІОНАЛЬНІ АСПЕКТИ РОЗВИТКУ АГРОПРОМИСЛОВИХ КОМПЛЕКСІВ

В сучасних умовах економічної нестабільності великого значення набуває розвиток агропромислових комплексів, продукція яких забезпечує не тільки споживачів продуктами харчування, переробні галузі сировиною, а й економічну безпеку регіонів та країни в цілому. Це, своєю чергою, зумовлює дослідження регіональних аспектів розвитку агропромислових комплексів.

Сільське господарство, виступаючи однією зі сфер агропромислових комплексів, грає у ньому провідну роль. Виробництво сільськогосподарської продукції безпосередньо залежить від природно-кліматичних умов того чи іншого регіону, тому при управлінні розвитком агропромислових комплексів особливого значення набуває регіональний аспект.