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MODELING THE STACKELBERG STRATEGY IN A LINEAR MODEL (LINEAR CITY) HOTTELING

Musayeva Shaira Azimovna
Professor of Samarkand Institute of Economic and Service, Samarkand, Uzbekistan

Usmonova Dilfuza Ilkhomovna
Assistant Professor of Samarkand Institute of Economic and Service, Samarkand, Uzbekistan

Abstract: The article examines the model of a linear city with exogenous Stackelberg competition between two firms. In this model, at low transport costs, firms in equilibrium are located at one point in the center of the market, while the profit of the leader firm is twice the profit of the follower firm, the price is minimal, and the quantity of products supplied is maximal at the point where the firms are located. At higher transport costs, firms differentiate, and the market, as it were, splits into two “submarkets”: the leader firm sells the bulk of production near its location, and the follower company sells the bulk of its products, while the profit of the leader firm exceeds the profit of the follower firm by less than twice, the price is always minimal at the point of location of the leading firm. With an increase in transport costs, the quantities of products supplied by firms decrease, and the price rises.

Key words: spatial competition, Stackelberg oligopoly, Hotelling‘s linear city model.

Annotatsiya: Maqolada ikki firma o‘rtasidagi ekzogen Stackelberg raqobatiga ega chiziqli shahar modeli ko‘rib chiqiladi. Ushbu modelda transport xarajatlari past bo‘lgan holda, muvozanatdagi firmalar bozorning markazida bir nuqtada joylashgan bo‘lib, yetakchi firmaning foydasi ergashuvchi firmaning foydasidan ikki baravar ko‘p, narxi minimal va mahsulot miqdori. Ta’minlanganlik firmalar joylashgan nuqtada maksimal bo‘ladi. Ko‘proq transport xarajatlari bilan firmalar farqlanadi va bozor go‘yo ikkita “kichik bozor”ga bo‘linadi: yetakchi firma mahsulotning asosiy qismini o‘z joylashuvi yaqinida sotadi va ergashuvchi kompaniya o‘z mahsulotining asosiy qismini sotadi, shu bilan birga foyda oladi. Yetakchi firma ergashuvchi firmaning foydasidan ikki baravar kam bo‘lsa, yetakchi firma joylashgan joyda narx har doim minimal bo‘ladi. Transport xarajatlarining oshishi bilan firmalar tomonidan yetkazib beriladigan mahsulotlar miqdori kamayadi va narx ko‘tariladi.

Kalit so‘zlar: Fazoviy raqobat, Stackelberg oligopoliyasi, Hotellingning chiziqli shahar modeli.

Аннотация: В статье рассматривается линейная модель города с экзогенной конкуренцией по Штакельбергу между двумя фирмами. В этой модели при низких транспортных издержках фирмы, находящиеся в равновесии, расположены в точке в центре рынка, прибыль ведущей фирмы в два раза превышает прибыль следующей фирмы, а цена и объем выпуска минимальны. Предложение максимально в той точке, где расположены фирмы. При более высоких транспортных издержках фирмы дифференцируются, и рынок распадается на два “субрынка”: ведущая фирма продает большую часть своей продукции вблизи своего местоположения, а фирма-последователь продает большую часть своей продукции, получая при этом прибыль. Цена всегда минимальна в месте нахождения ведущей фирмы, если прибыль ведущей фирмы менее чем в два раза превышает прибыль следующей фирмы. С увеличением транспортных расходов количество поставляемой фирмами продукции уменьшается, а цена возрастает.

Ключевые слова: пространственная конкуренция, олигополия Штакельберга, линейная модель города Хотеллинга.

INTRODUCTION

Definition of the linear model (linear city) Hotteling. “Suppose that along a straight beach of length L, at a distance a and b from its left and right ends, there are 2 trays - A and B, from which ice cream cones are sold. Buyers are placed at a distance of a unit of length from each other, and each buys one horn within a given period of time. The cost of producing ice cream is zero, and the cost of its “transportation” by the buyer from the tray to his place under the beach umbrella is equal to c per one unit of the way (after all, ice cream melts on the way!) Let P A be the price of one cone on the tray A, PB - the price of one cone on Tray B.

ANALYSIS OF LITERATURE

Analysis of literature on the topic Based on foreign experiences, it should be ensured that many economists have been engaged in the development of marketing opportunities and their practical application. Among them are Menshikov I.S. Bhadury J., Chandrasekaran R. Padmanabhan V., Combes P.-Ph., Mayer T. and Thisse J.-F. Meza S., Tombak M. Prescott EC, Stackelberg H.

RESEARCH METHODOLOGY

Systematic approach, abstract-logical thinking, grouping, comparison, factor analysis, selective observation methods were used in the research process.

Analysis and results. Then the buyer at point E does not care which of the two trays to buy ice cream from, if the following condition is met:

PA+cx = PB+cy (1)

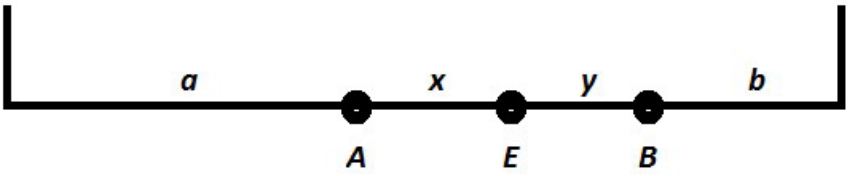

Fig. 1: Model of the linear city “Hotteling”

Let’s make the following designation according to Figure 2.

Let a+ x +y+b =L

Where L is the length of the beach.

Find the coordinates of the point E, determining the distances x and y:

$$X = \frac{P_b - P_a + cy}{c} = \frac{P_b - P_a}{c} + L - a - b - x \quad (2)$$

or

$$X = \frac{1}{2} * \left(L - a - b + \frac{P_b - P_a}{c}\right)$$

$$Y = \frac{1}{2} * \left(L - a - b + \frac{P_a - P_b}{c}\right)$$

Let’s write expressions for the profit of each of the trays (i.e., each of the firms):

$$\Pi_a = P_a(a + x) = \frac{1}{2} * \left((L - a - b)P_a + \frac{P_a P_b - P^2 a}{c}\right)$$

$$\Pi_b = P_b(b + y) = \frac{1}{2} * \left((L - a + b)P_b + \frac{P_a P_b - P^2 b}{c}\right)$$

Each of the firms will choose a price that maximizes its profits, based on the necessary condition for maximizing profits:

$$\frac{\partial \Pi_a}{\partial P_a} = \frac{1}{2} * \left((L - a - b) + \frac{P_b - 2 * P_a}{c} \right) = 0$$

$$\frac{\partial \Pi_b}{\partial P_b} = \frac{1}{2} * \left((L - a - b) + \frac{P_a - 2 * P_b}{c} \right) = 0$$

By solving the equations together, we find that:

$$P_a = c(L + \frac{a - b}{3})$$

$$P_b = c(L - \frac{a - b}{3})$$

If the stalls (firms) are located at different distances from the ends of the beach, then these prices will differ from each other, and the differences in prices, due to the identity and zero marginal production costs, are explained solely by the difference in location: the firm that is better located may require a higher price for the product, while retaining a larger market share, that is, not yielding any significant market share to another company.

Note that this model does not entail the strategic behavior of the two firms. Below we will consider a deeper analysis of the linear model in terms of the Stackelberg model.

Main part.

Stackelberg model of a linear city with exogenous competition.

Definition: “Let the following assumptions be fulfilled”

1. The market is a unit segment [0, 1] with a uniform distribution of consumers.
2. Firm-leader (firm 1) is located at point x_1, and the follower firm (firm 2) – at point x_2, and firm 1 is located “To the left” of firm 2, that is: $x_1 \le x_2$
3. The function of transport costs is linear in x, that is, transport costs for the delivery of a unit of goods from the location of firm k to point x is determined as follows

$$t = |x - x_k|$$

   Where t – transportation costs for the transportation of a unit of production
4. There is no cooperative behavior of firms
5. In the first round, firms choose a location, in the second round - the number of products offered.
6. Firm 1 is the leader in both rounds and anticipates the reaction of firm 2, which is the follower.
7. Production costs of both firms are zero.
8. Firms themselves pay transport costs for the delivery of goods to the consumer.
9. Each point of the market is a separate submarket, where a different price can be established from the price in other submarkets, that is, there can be price discrimination based on location.

Let the demand function at point x be defined as

$$P = 1 - Q$$

Where P is the price, Q is the quantity of goods. Let

$$Q = q_1 + q_2$$

Where q_1 and q_2 are the quantities of goods supplied by firms 1 and 2, respectively.

Let’s start by looking at the second round:

Let us define the profit of the follower firm at point x:

$$\Pi_2(x_1,x_2,q_1,q_2) = q_2(1 - q_1 - q_2) - q_2t|x - x_2| = -q_2t|x - x_2| - q_2^2 + (-q_1 + 1)q_2$$

Let’s define the profit of the company - the leader at the point x:

$$\Pi_2(x_1,x_2,q_1,q_2) = q_1(1 - q_1 - q_2) - q_1t|x - x_1| = -q_1t|x - x_1| - q_1^2 + (-q_1 + 1)q_1$$

TARAQQIYOT ПРОГРЕСС PROGRESS

TARAQQIYOT ПРОГРЕСС PROGRESS

Let us find the reaction function by the number of the follower firm in the second round. For this, the derivative of the function $\Pi_2(x_1,x_2,q_1,q_2)$ for q_2 equate to zero:

$$\partial\pi_2(x_1,x_2,q_1,q_2)/\partial q_2 = -t\ |x_2-x| - 2\,q_2 - q_1 + 1 = 0.$$

Solving this equation, we obtain the reaction function for the number of firms 2 $q_1(q_2)$:

$$q_2(q_1) = -\frac{t\ |x_2-x| + q_1 - 1}{2}.$$

Substituting the response function of the follower firm (the above equation) into the profit function of the leader's firm:

$$\pi_1(x_1,x_2,q_1,q_2) = \\ = (-q_1)\ t\ |x_1-x| - q_1\frac{-(t\ |x_2-x| + q_1 - 1)}{2} - {q_1}^2 + q_1 = \\ = \frac{q_1\,t\ |x_2-x| - 2\,q_1\,t\ |x_1-x| - {q_1}^2 + q_1}{2}.$$

To find the equilibrium quantity of goods offered by firms at the point x, we calculate the derivative of the above function with respect to q_1:

$$\partial\pi_1(x_1,x_2,q_1,q_2)/\partial q_1 = \frac{t\ |x_2-x| - 2\,t\ |x_1-x| - 2\,q_1 + 1}{2}.$$

Equating to zero and solving the resulting equation, we obtain the equilibrium quantity of goods supplied by the leader firm at the point x;

$$q_1^*(x,x_1x_2) = \frac{t\ |x_2-x| - 2\,t\ |x_1-x| + 1}{2}.$$

Substituting the above equation into the function $q_2(q_1)$ we find the equilibrium quantity of goods supplied at point x by a firm follower of $q_2^*(x, x_1, x_2)$:

$$q_2^*(x,x_1,x_2) = \frac{-\frac{t|x_2-x|-2\,t|x_1-x|+1}{2} - t\ |x_2-x| + 1}{2} = \\ = -\frac{3\,t\ |x_2-x| - 2\,t\ |x_1-x| - 1}{4}.$$

Using P = 1 - Q and Q = q_1 + q_2, we find the equilibrium price $p^*(x, x_1, x_2)$ at the point x:

$$p^*(x,x_1,x_2) = \\ = -\frac{t\ |x_2-x| - 2\,t\ |x_1-x| + 1}{2} - \frac{-3\,t\ |x_2-x| + 2\,t\ |x_1-x| + 1}{4} + 1 = \\ = \frac{t\ |x_2-x| + 2\,t\ |x_1-x| + 1}{4}. \quad (2.13)$$

Substituting in $\Pi_2(x_1,x_2,q_1,q_2)$ and $\Pi_1(x_1,x_2,q_1,q_2)$ the equilibrium values $q_1^*(x, x_1, x_2)$ и $q_2^*(x, x_1, x_2)$, we find the equilibrium profit of firm $1\pi_1^*$ and and equilibrium profit π_2^* of firm 2 at point x.

$$\pi_2^*(x,x_1,x_2) = \\ = \frac{1}{16}\Big(9\,t^2\,|x_2-x|^2 + \left(-12\,t^2\ |x_1-x| - 6\,t\right)\ |x_2-x| + \\ + 4\,t^2\,|x_1-x|^2 + 4\,t\ |x_1-x| + 1\Big),$$

$$\pi_1^*(x,x_1,x_2) = \\ = \frac{1}{8}\Big(t^2\,|x_2-x|^2 + \left(-4\,t^2\ |x_1-x| + 2\,t\right)\ |x_2-x| + \\ + 4\,t^2\,|x_1-x|^2 - 4\,t\ |x_1-x| + 1\Big).$$

Round one:

Let us find the integral function of the profit of the firm - the follower of. By the integral function we mean a function that describes the market as a whole, and not a single point in the market.

$$\Pi_2(x_1,x_2)=\int_0^1\pi_2^*(x,x_1,x_2)dx=$$
$$=\frac{1}{16}\int_0^1\Big(\left(-12\,t^2\,|x_1-x|-6\,t\right)|x_2-x|+9\,t^2\,(x_2-x)^2+$$
$$+4\,t\,|x_1-x|+4\,t^2\,(x_1-x)^2+1\Big)dx.$$

Given the constraints on the relative position of firms, the expression for the integral function shown above can be calculated as follows:

$$\Pi_2(x_1,x_2)=\int_0^1\pi_2^*(x,x_1,x_2)dx=$$
$$=\int_0^{x_1}\pi_2^*(x,x_1,x_2)dx+\int_{x_1}^{x_2}\pi_2^*(x,x_1,x_2)dx+$$
$$+\int_{x_2}^1\pi_2^*(x,x_1,x_2)dx=$$
$$=-\frac{1}{48}\Big(12\,t^2\,{x_2}^3+\left(-36\,t^2\,x_1-27\,t^2+18\,t\right)\,{x_2}^2+$$
$$+\left(36\,t^2\,{x_1}^2+36\,t^2\,x_1+9\,t^2-18\,t\right)\,x_2+$$
$$-12\,t^2\,{x_1}^3+\left(-12\,t^2-12\,t\right)\,{x_1}^2+\left(12\,t-6\,t^2\right)\,x_1-t^2+$$
$$+3\,t-3\Big).$$

Let us construct a reaction function based on the location of the follower firm $x_2(x_1)$. Find the value x_2, that maximizes the follower firm's response function. Let us find the derivative $\Pi_2(x_1, x_2)$:

$$\partial\Pi_2(x_1,x_2)/\partial x_2=$$
$$=-\frac{1}{16}\Big(12\,t^2\,{x_2}^2+\left(-24\,t^2\,x_1-18\,t^2+12\,t\right)\,x_2+$$
$$+12\,t^2\,{x_1}^2+12\,t^2\,x_1+3\,t^2-6\,t\Big).$$

Equating the equation to zero and solving the resulting equations, we get:

$$x_2(x_1)=-\frac{\sqrt{\left(8\,t^2-16\,t\right)\,x_1+5\,t^2-4\,t+4}-4\,t\,x_1-3\,t+2}{4\,t}$$

and

$$x_2(x_1)=\frac{\sqrt{\left(8\,t^2-16\,t\right)\,x_1+5\,t^2-4\,t+4}+4\,t\,x_1+3\,t-2}{4\,t}.$$

Let us find the integral function of the profit of the company - leader $\Pi_1(x_1,x_2)$.

$$\Pi_1(x_1,x_2)=\int_0^1\pi_1^*(x,x_1,x_2)dx=$$
$$=\frac{1}{8}\int_0^1\Big(\left(2\,t-4\,t^2\,\left(x-x_1\right)\right)|x_2-x|+t^2\,(x_2-x)^2+$$
$$-4\,t\,\left(x-x_1\right)+4\,t^2\,\left(x-x_1\right)^2+1\Big)dx.$$

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TARAQQIYOT PROGRESS ПРОГРЕСС

Let's write the integral function as a sum:

$$\Pi_1(x_1,x_2)=\int_0^1\pi_1^*(x,x_1,x_2)dx=$$
$$=\int_0^{x_1}\pi_1^*(x,x_1,x_2)dx+\int_{x_1}^{x_2}\pi_1^*(x,x_1,x_2)dx+$$
$$+\int_{x_2}^{1}\pi_1^*(x,x_1,x_2)dx.$$

Than:

$$\Pi_1(x_1,x_2)=$$
$$=-\frac{1}{24}\Big(4t^2{x_2}^3+\left(-12t^2x_1-3t^2-6t\right){x_2}^2+$$
$$+\left(12t^2{x_1}^2+12t^2x_1-3t^2+6t\right)x_2+$$
$$-4t^2{x_1}^3+\left(12t-12t^2\right){x_1}^2+\left(6t^2-12t\right)x_1-t^2+3t-3\Big).$$

Substituting the response functions of the follower firm by location $X_2(X_1)$ into the integral profit function of the leader firm (indicated above).

$$\Pi_1(x_1)=$$
$$=\frac{1}{192t}\Big(\left(24t^3-48t^2\right){x_1}^2+$$
$$+\sqrt{\left(8t^2-16t\right)x_1+5t^2-4t+4}\times$$
$$\times\left(\left(16t^2-32t\right)x_1+t^2-20t+20\right)+$$
$$+\left(-84t^3+240t^2-144t\right)x_1+11t^3+6t^2-36t+40\Big).$$

When setting the First $X_2(X_1)$, we get:
When setting the Second $X_2(X_1)$ we get:

$$\Pi_1(x_1)=$$
$$=-\frac{1}{192t}\Big(\left(48t^2-24t^3\right){x_1}^2+$$
$$+\sqrt{\left(8t^2-16t\right)x_1+5t^2-4t+4}\times$$
$$\times\left(\left(16t^2-32t\right)x_1+t^2-20t+20\right)+$$
$$+\left(84t^3-240t^2+144t\right)x_1-11t^3-6t^2+36t-40\Big).$$

Having received the equations of profit, we can then proceed to the analysis of the extrema of each of them:

First Option: Function

$$\Pi_1(x_1)=$$
$$=\frac{1}{192t}\Big(\left(24t^3-48t^2\right){x_1}^2+$$
$$+\sqrt{\left(8t^2-16t\right)x_1+5t^2-4t+4}\times$$
$$\times\left(\left(16t^2-32t\right)x_1+t^2-20t+20\right)+$$
$$+\left(-84t^3+240t^2-144t\right)x_1+11t^3+6t^2-36t+40\Big).$$

Reaches an extremum at a point

$$x_1=$$
$$=\frac{(7t-6)\sqrt{\left(8t^2-16t\right)x_1+5t^2-4t+4}-7t^2+12t-12}{4t\sqrt{\left(8t^2-16t\right)x_1+5t^2-4t+4}+16t^2-32t}. \quad (A)$$

Let's replace the variable in x_1 with the one shown above:

$$w = \sqrt{(8t^2 - 16t)x_1 + 5t^2 - 4t + 4} \quad w > 0\,. \text{ (B)}$$

Than:

$$x_1 = \frac{w^2 - 5t^2 + 4t - 4}{8t^2 - 16t}. \text{ (C)}$$

Substituting (C) in (A) and solve this equation for ω
We get:

$$w = -\frac{\sqrt{41t^2 - 140t + 132} + 7t - 10}{2}, \text{ (D)}$$

$$w = \frac{\sqrt{41t^2 - 140t + 132} - 7t + 10}{2} \text{ (E)}$$

And

$$w = 3t - 2. \text{ (F)}$$

In (C) we put (D), (E) and (F). We get:

$$x_1 = \frac{(7t - 10)\sqrt{41t^2 - 140t + 132} + 35t^2 - 132t + 108}{16t^2 - 32t},$$

$$x_1 = -\frac{(7t - 10)\sqrt{41t^2 - 140t + 132} - 35t^2 + 132t - 108}{16t^2 - 32t}$$

and

$$x_1 = \frac{1}{2}.$$

Let's find the X_2 values by the above three roots X_1. To do this, we substitute these roots in the equation:

$$x_2(x_1) = -\frac{\sqrt{(8t^2 - 16t)\,x_1 + 5t^2 - 4t + 4} - 4t\,x_1 - 3t + 2}{4t}$$

Below we get the following roots:

$$x_2 = \\ = -\frac{1}{2^{\frac{9}{2}}t^2 - 2^{\frac{11}{2}}t} \times \\ \times \left((4t - 8)\sqrt{(7t - 10)\sqrt{41t^2 - 140t + 132} + 45t^2 - 140t + 116} + \right. \\ + \left(5\,2^{\frac{3}{2}} - 7\sqrt{2}t\right)\sqrt{41t^2 - 140t + 132} - 47\sqrt{2}t^2 + \\ \left. + 41\,2^{\frac{5}{2}}t - 31\,2^{\frac{5}{2}}\right), \quad (2.34)$$

$$x_2 = \\ = -\frac{1}{2^{\frac{9}{2}}t^2 - 2^{\frac{11}{2}}t} \times \\ \times \left((4t - 8)\sqrt{(10 - 7t)\sqrt{41t^2 - 140t + 132} + 45t^2 - 140t + 116} + \right. \\ + \left(7\sqrt{2}t - 5\,2^{\frac{3}{2}}\right)\sqrt{41t^2 - 140t + 132} - 47\sqrt{2}t^2 + \\ \left. + 41\,2^{\frac{5}{2}}t - 31\,2^{\frac{5}{2}}\right) \quad (2.35)$$

и

$$x_2 = \frac{1}{2}. \quad (2.36)$$

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Second option:
Function:

$$\Pi_1(x_1) = \\ = -\frac{1}{192t}\Big((48t^2-24t^3)\,x_1{}^2+ \\ +\sqrt{(8t^2-16t)\,x_1+5t^2-4t+4}\times \\ \times\left((16t^2-32t)\,x_1+t^2-20t+20\right)+ \\ +\left(84t^3-240t^2+144t\right)x_1-11t^3-6t^2+36t-40\Big).$$

Reaches an extremum at a point

$$x_1 = \\ = \frac{(7t-6)\,\sqrt{(8t^2-16t)\,x_1+5t^2-4t+4}+7t^2-12t+12}{4t\,\sqrt{(8t^2-16t)\,x_1+5t^2-4t+4}-16t^2+32t}.$$

By a similar change of variable we obtain

$$x_1 = -\frac{(7t-10)\,\sqrt{41t^2-140t+132}-35t^2+132t-108}{16t^2-32t},$$

$$x_1 = \frac{(7t-10)\,\sqrt{41t^2-140t+132}+35t^2-132t+108}{16t^2-32t}$$

и

$$x_1 = \frac{1}{2}.$$

Let's find the X_2 values by the above three roots X_1.

$$x_2 = -\frac{1}{16t^2-32t}\times \\ \times\Big((4-2t)\left|\sqrt{41t^2-140t+132}-7t+10\right|+ \\ +(7t-10)\,\sqrt{41t^2-140t+132}-47t^2+164t-124\Big),$$

$$x_2 = \frac{1}{16t^2-32t}\times \\ \times\Big((2t-4)\left|\sqrt{41t^2-140t+132}+7t-10\right|+ \\ +(7t-10)\,\sqrt{41t^2-140t+132}+47t^2-164t+124\Big)$$

и

$$x_2 = \frac{|3t-2|+5t-2}{4t}.$$

So, we have six possible options for an equilibrium position. In addition to these six, variants with the location of the leader firm at points 1 and 0 should be checked. The location of the follower firm is determined in this case from the response function of the follower firm. Equating the equation to zero and solving the resulting equations, we obtain:

$$x_2(x_1) = -\frac{\sqrt{(8t^2-16t)\,x_1+5t^2-4t+4}-4tx_1-3t+2}{4t}$$

or

$$x_2(x_1) = \frac{\sqrt{(8t^2-16t)\,x_1+5t^2-4t+4}+4tx_1+3t-2}{4t}.$$

For X_1 =0

$$x_2 = \frac{-\sqrt{5t^2 - 4t + 4} + 3t - 2}{4t}$$

or

$$x_2 = \frac{\sqrt{5t^2 - 4t + 4} + 3t - 2}{4t}.$$

For X_1 = 1; X_2 =1.

Now let's get down to the most interesting thing, find which of the equilibrium values satisfy the conditions of the model. These values should maximize the integral functions of profit, and also satisfy the conditions $0 \le X_1 \le X_2 \le 1$. Considering that the leader firm foresees the follower's actions at both stages, we will assume that the leader firm chooses from the possible equilibrium positions the one that maximizes its profit.

Table 1 below shows only the "permitted" locations of firms, in which the profit function of the leader firm is maximal, but the entire market is served. In this table, we took the transport tariff from 0.1 to 0.6.

Table 1: Approximate parameters of equilibrium placement

t	X_1^*	X_2^*	$П_1^*$	$П_2^*$	Stackelberg equilibrium
0,1	0,5	0,5	0,119	0,059	(2,40);(2,43)
0,2	0,5	0,5	0,113	0,056	(2,40);(2,43)
0,3	0,5	0,5	0,107	0,054	(2,40);(2,43)
0,4	0,451	0,541	0,102	0,051	(2,39);(2,42)
0,5	0,375	0,625	0,098	0,052	(2,39);(2.42)
0.6	0.338	0.697	0.099	0.055	(2.39);(2.42)

CONCLUSION

The Nash – Stackelberg equilibrium of firms depends on transport costs. At low values of transport costs, firms are undifferentiated; at higher transport costs, firms are differentiated. Consequently, in Hotelling's model, the level of differentiation of firms depends on the transport tariff.

References:

1. Menshikov I.S. Lectures on game theory and economic modeling. M .: OOO "Contact Plus", 2010.
2. Bhadury J., Chandrasekaran R. Padmanabhan V. Competitive Location and Entry Deterrence in Hotelling's Duopoly Model // Location Science. 1994. V. 2. N. 4. P. 259-275.
3. Combes P.-Ph., Mayer T. and Thisse J.-F. Economic Geography: The Integration of Regions and Nations. Princeton: Princeton University Press, 2008.
4. Meza S., Tombak M. Endogenous Location Leadership // International Journal of Industrial Organization. 2009. V.27. P.687–707.
5. Prescott E.C., Visscher M. Sequential Location Among Firms with Foresight // Bell Journal of Economics. 1977.V.8.N2.P.378–393.
6. Stackelberg H. Marktform und Gleichgewicht. Wien und Berlin: J. Springer, 1934.
7. Musaeva Sh.A. Integrated marketing communicationStudy guide "Mahorat" publishing house, Samarkand–2022.
8. Musaeva Sh.A., Usmonova DI Innovative marketing Study guide "TURON EDITION" 2021.
9. Musaeva Sh.A. Marketing research. Textbook "STAR-SEL" LLC publishing and creative department. Samarkand–2023.

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