

## CASELET 1: THE CITY BREAD COMPANY

Given the highly competitive nature of the restaurant industry, individual companies cautiously guard operating information for individual outlets. As a result, there are no publicly available data that can be used to important operating relationships. To see the process that might be undertaken to develop a better understanding of store location decisions, consider the case of The City Bread Co., a chain of bakery-cafes. The company has initiated an empirical estimation of customer traffic at 30 regional locations to help the firm formulate pricing and promotional plans for the coming year. Annual operating data for the 30 outlets appear in Table 1 below.

The following regression equation was fit to these data:

$$Q_i = b_0 + b_1P_i + b_2P_x + b_3Ad_i + b_4I_i + u$$

Where  $Q$  is the number of meals served,  $P$  is the average price per meal (customer ticket amount in dollars),  $P_x$  is the average price charged by competitors (in Philippine Peso),  $Ad$  is the local advertising budget for each outlet.  $I$  is the average income per household in each outlet's immediate service area, and  $u$  is a residual for disturbance term. The subscript  $i$  indicates the regional market from which the observation was taken. Least squares estimation of the regression equation on the basis of the 30 data observations resulted in the estimate regression coefficients and other statistics shown in Table 2.

- A. I'm considering 3 sites for my new branch. Help me pick which of the 3 sites would give me the highest quantity sold.
- |    |            |              |                |              |
|----|------------|--------------|----------------|--------------|
| 1. | $P = 7.50$ | $P_x = 5.00$ | $Ad = 260,000$ | $I = 56,000$ |
| 2. | $P = 7.50$ | $P_x = 8.50$ | $Ad = 180,000$ | $I = 56,000$ |
| 3. | $P = 7.5$  | $P_x = 6.00$ | $Ad = 200,000$ | $I = 69,000$ |
- B. Let's say I would pick the site that you're recommending in question (A), what would be the best pricing strategy. Which one of the prices below will give the highest quantity sold?
- |      |      |
|------|------|
| 8.50 | 7.00 |
| 8.20 | 6.50 |
| 8.00 | 6.20 |
| 7.50 | 6.00 |
- C. Is this level of price that will also give me the highest revenue? So, if I want to maximize revenue or sales value, what would you recommend to be the price? Please explain to me your choice.

Table 1

Market	Demand (Q)	Price (P)	Competitor Price (P <sub>x</sub> )	Advertising (Ad)	Income (I)
1	596,611	7.62	6.54	200,259	54,880
2	596,453	7.29	5.01	204,559	51,755
3	599,201	6.66	5.96	206,647	52,955
4	572,258	8.01	5.30	207,025	54,391
5	558,142	7.53	6.16	207,422	48,491
6	627,973	6.51	7.56	216,224	51,219
7	593,024	6.20	7.15	217,954	48,685
8	565,004	7.28	6.97	220,139	47,219
9	596,254	5.95	5.52	220,215	49,775
10	652,880	6.42	6.27	220,728	54,932
11	596,784	5.94	5.66	226,603	48,092
12	657,468	6.47	7.68	228,620	54,929
13	519,866	6.99	5.10	230,241	46,057
14	612,941	7.72	5.38	232,777	55,239
15	621,707	6.46	6.20	237,300	53,976
16	597,215	7.31	7.43	238,765	49,576
17	617,427	7.36	5.28	241,957	55,454
18	572,320	6.19	6.12	251,317	48,480
19	602,400	7.95	6.38	254,393	53,249
20	575,004	6.34	5.67	255,699	49,696
21	667,581	5.54	7.08	262,270	52,600
22	569,880	7.89	5.10	275,588	50,472
23	644,684	6.76	7.22	277,667	53,409
24	605,468	6.39	5.21	277,816	52,660
25	599,213	6.42	6.00	279,031	50,464
26	610,735	6.82	6.97	279,934	49,525
27	603,830	7.10	5.30	287,921	49,489
28	617,803	7.77	6.96	289,358	49,375
29	529,009	8.07	5.76	294,787	48,254
30	573,211	6.91	5.96	296,246	46,017
Average	598,412	6.93	6.16	244,649	51,044

Table 2. Estimated Demand Function for City Bread Co.

Variable (1)	Coefficient (2)	Standard Error of Coefficient (3)	t Statistic (4) = (2)/(3)
Intercept	128,832.240	69,974.818	1.84
Price (P)	-19,875.954	4,100.856	-4.85
Competitor price (P <sub>x</sub> )	15,467.936	3,459.280	4.47
Advertising(Ad)	0.261	0.094	2.77
Income (I)	8.780	1.017	8.63
Coefficient of determination = $R^2 = 83.3\%$			
Corrected coefficient of determination = $\bar{R}^2 = 80.6\%$			
F statistic = 31.17			
Standard error of the estimate = SEE = 14875.945			