

Question

Submitted by Praer4 on Sat, 2014-02-08 22:09
due on Fri, 2014-02-14 00:00
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Imagine that you work for the maker of a leading brand of low-calorie microwavable food that estimates the following demand equation for its product using data from 26 supermarkets around the country for the month of April.

Use the following demand equation concerning the questions of this assignment. This equation has been estimated through linear regression. The independent variables are: price of the product discussed in this assignment (P), advertising expenditure (A), price of leading competitor's product (C), per capita income (I) in the area, and number of microwave ovens sold in the area. The standard errors of estimation are in parentheses below the equation.

$$QD = -5200 - 42P + 20C + 5.2(I) + 0.20(A) + 0.25(M)$$

$$(2) (17.5) (6.2) (2.5) (0.09) (0.21)$$

Standard errors

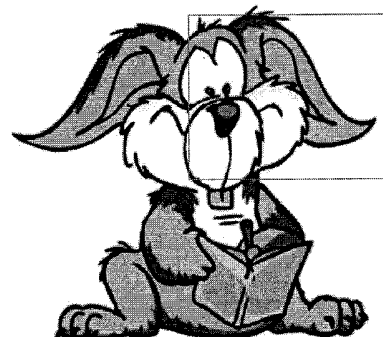
$$R^2 = 0.55 \quad n = 26 \quad F = 4.88$$

Your supervisor has asked you to compute the elasticities for each independent variable. Assume the following values for the independent variables:

QD = Quantity demanded

P (in cents) = Price of the product = 500

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C (in cents) = Price of leading competitor's product = 600

I (in dollars) = Monthly average income in the area = 5,500

A (in dollars) = Monthly advertising expenditures = 10,000

M = Number of microwave ovens sold in the area = 5,000

1. Compute the elasticities for each independent variable. Note: Write down all of your calculations.

When P = 500, C = 600, I = 5500, A = 10000 and M = 5000, using regression equation,

$$Q_D = -5200 - 42 \cdot 500 + 20 \cdot 600 + 5.2 \cdot 5500 + 0.2 \cdot 10000 + 0.25 \cdot 5000 = 17650$$

$$\text{Price elasticity} = (P/Q) \cdot (dQ/dP)$$

From regression equation, $dQ/dP = -42$.

$$\text{So, price elasticity } E_P = (P/Q) \cdot (-42) = (-42) \cdot (500 / 17650) = -1.19$$

Likewise,

$$E_C = 20 \cdot 600 / 17650 = 0.68$$

$$E_I = 5.2 \cdot 5500 / 17650 = 1.62$$

$$E_A = 0.20 \cdot 10000 / 17650 = 0.11$$

$$E_M = 0.25 \cdot 5000 / 17650 = 0.07$$

*cost
income
Advertising
of microwaves*

2. Determine the implications for each of the computed elasticities for the business in terms of short-term and long-term pricing strategies. Provide a rationale in which you cite your results.

Price elasticity is -1.19. This indicates a 1% increase in the price of the product, which makes the quantity demanded to drop by 1.19%. Therefore, the demand of this product is somewhat elastic. Consequently, increase in price may drive customers away.

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kim woods	\$49668.00	1008 times
Proteach	\$28959.70	190 times
shahimermaid	\$27170.00	348 times

TOP RATED (at least ten times)

topannapot	\$7555.50	114 times
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Mahound	\$3372.25	102 times

Cross-price elasticity is 0.68. If the price of a competitor's product goes up by 1%, then quantity demanded of this product will increase by 0.68%. This product is fairly inelastic to a competitor's price and there is no need to be concerned about the competitor since their pricing won't affect sales.

Income-elasticity is 1.62. This indicates that a 1% rise in the average area income will boost the quantity demanded by 1.62%. In this aspect, the product is elastic and the company can make the decision to raise the price if the average income rises.

Advertisement elasticity is 0.11 which means that a 1% increase in advertising expenses will raise the quantity demanded by only 0.11%. Therefore, demand is rather inelastic to advertising. For that reason, more advertisement doesn't automatically mean that a company can raise the price because that still could drive customers away.

With respect to microwave ovens in the area, elasticity is 0.07, which shows an elevation of 1% in the number of ovens in the area increasing the quantity demanded by a mere 0.07%. Therefore, in this aspect, demand is inelastic and the pricing strategy can simply skip this element.

Consequently, quantity demanded (as we have seen above) is sensitive to the price of product and the income of people but somewhat insensitive to our competitor's price and almost completely insensitive to advertising and the amount of microwaves existing in area.

3. Recommend whether you believe that this firm should or should not cut its price to increase its market share. Provide support for your recommendation.

A cut in price would raise the quantity demanded since the price elasticity is negative. Additionally, the elasticity is a little over unity. Revenue is maximized when the degree of elasticity is one. With that in mind, a price reduction will raise the quantity demanded and will lead to a net gain in sales as elasticity moves towards unity. In my opinion, the firm should decrease the price just as it would increase the market share and the revenue generated.

4. Assume that all the factors affecting demand in this model remain the same, but that the price has changed. Further assume that the price changes are 100, 200, 300, 400, 500, 600 cents.

A. Plot the demand curve for the firm.

With all other factors constant, the demand equation is as follows:

$$Q = -5200 - 42 \cdot P + 20 \cdot 600 + 5.2 \cdot 5500 + 0.2 \cdot 10000 + 0.25 \cdot 5000$$

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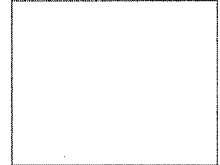
$$Q = 38650 - 42P$$

$$P = 38650/42 - Q/42 \text{ (plotted below)}$$

B. Plot the corresponding supply curve on the same graph using the supply function $Q = 5200 + 45P$ with the same prices.

$$Q = 5200 + 45P$$

$$P = -5200/45 + Q/45$$



C. Determine the equilibrium price and quantity.

Solving the demand and supply equation concurrently,

$$38650 - 42P = 5200 + 45P$$

$$87P = 33450$$

$$P = 384.48$$

$$\text{and } Q = 5200 + 45 \cdot 384.48 = 22501$$

Therefore, the equilibrium price is 384 cents and the equilibrium quantity is 22,501 units. Additionally, the equilibrium price and the quantity can be seen on the graph indicated at the point where the supply and demand curve meet.

4. Outline the significant factors that could cause changes in supply and demand for the product. Determine the primary manner in which both the short-term and the long-term changes in market conditions could impact the demand for, and the supply, of the product.

As is pointed out in the demand equation, demand of the low-calorie food can change if there is a change in consumer income, the pricing of a competitor product and the price of correlating goods (microwave oven). This change can also happen as a result of change in consumer preference (e.g. consciousness towards low-calorie food). Supply of the product can change if there is a change in the number of product suppliers, production technological advances in addition to other elements like labor and raw-material availability change, which directly affect production costs.

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5. Indicate the crucial factors that could cause rightward shifts and leftward shifts of the demand and supply curves.

An increase in consumer income, a price cut in the price of a complementary product (e.g., microwave ovens) could cause a rightward shift of demand curve product; as could a population increase or increased preference for the product (e.g., awareness towards low-calorie food). A decrease in consumer income or a recession (like the U.S. has been experiencing) can cause a leftward shift of demand curve; additionally, an increase in price of a complementary product (microwave oven etc.) could cause the same leftward shift of demand curve.

Technology advances in food processing, increased availability of cheap labor and raw materials, increased tax-cuts and government subsidies (among other things) can cause a rightward shift of supply curve. A leftward shift can be caused by a decrease in availability or an increase in price of labor and raw materials, increased taxes, etc.

Use the Internet to research two (2) of the leading competitors in the low-calorie microwavable food industry, and take note of their pricing strategies, profitability, and their relationships within the industry (worldwide).

Write a six to eight (6-8) page paper in which you:

1. Outline a plan that will assess the effectiveness of the market structure for the company's operations.
2. Suppose the business operations have now changed from the market structure specified in the scenario. Determine two (2) likely factors that might have caused the change. Predict the primary manner in which this change would likely impact business operations in the new market environment.
3. Analyze the major short-run and long-run production and cost functions for the low-calorie microwavable food company. Suggest substantive ways in which the low-calorie food company may use this information in order to make decisions in both the short-run and the long-run.
4. Determine the possible circumstances under which the company should discontinue operations. Suggest key actions that management should take in order to confront these circumstances. Provide a rationale for your response.
5. Suggest one (1) pricing policy that will enable your low-calorie microwavable food company to maximize profits. Provide a rationale for your suggestion.
6. Outline a plan, based on the information provided in the scenario, that the company could use in order to evaluate its financial performance. Consider all the key drivers of



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performance, such as company profit or loss for both the short term and long term, and the fundamental manner in which each factor influences managerial decisions.

7.Recommend two (2) actions that the company could take in order to improve its profitability and deliver more value to its stakeholders. Outline, in brief, a plan to implement your recommendations.

8.Use at least five (5) quality academic resources in this assignment.

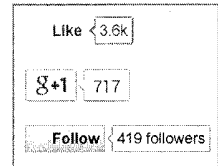


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