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Prerequisites

$$QD = -5200 + 20(600) - 42(500) + 5.2(5500) + 0.20(10000) + 0.25(5000)$$

$$QD = -5200 + 12000 - 21000 + 28600 + 2000 + 1250$$

Computing Elasticity

Price Elasticity

Price elasticity is computed using the formula = (P/Q) (Change in Q/Change in P)

The value of (Change in Q/Change in P) can be determined from the regression equation.

(Change in Q/Change in P) = -42. Using the value of (Change in Q/Change in P), one can determine the price elasticity (Ep).

$$\text{Price elasticity} = (-42) (500/17650)$$

$$\text{Price elasticity} = (-42) (0.02832)$$

$$\text{Price elasticity} = -1.189$$

Cross Price Elasticity

Using the same regression equation, cross price elasticity = 20(600/17650)

$$\text{Cross price elasticity} = 20(0.0341)$$

$$\text{Cross Price Elasticity} = 0.6833$$

Advertisement Elasticity

Using the same regression equation, advertisement elasticity = (P/Q) (0.20) (10000/17650)

$$EA = (P/Q) (0.20) (0.5694)$$

$$\text{Advertisement Elasticity} = 0.1138$$

Income Elasticity

Using the same regression equation, income elasticity = $(P/Q) (5.2)$
 $(5500/17650)$

Income elasticity = $(P/Q) (5.2) (0.31321)$

Income Elasticity = 1.628

Elasticity of Microwave Ovens

Using the same regression equation, elasticity of microwave ovens = (P/Q)
 $(0.25) (5000/17650)$

Elasticity of microwave ovens = $(P/Q) (0.25) (0.2832)$

Elasticity of Microwave = 0.0708

Implication of the Elasticity

The computed elasticity impacts the business in different ways. The impacts are both in the short-term pricing strategies and the long-term pricing strategies. One of the computed elasticity is the price elasticity. The computed price elasticity for the independent variable is -1.189. The implication of this value on the pricing strategy of the business is that of the price of the microwaveable food product increases by one percent, the quantity of the microwaveable food product that is demanded by the customers will drop in the amount of 1.19%. This implies that the demand for the frozen microwaveable food product is elastic in that a change in the price affects the demand for the product. The impact on the pricing strategies is both in the short-term and in the long-term. A rise in the price of the food products would drive away customers. This implies that the makers should look for ways of reducing the cost of production in order to ensure

that the food fetches lower prices in order to increase the customers.

Based on the calculations, the cross price elasticity was 0.68. The effect is that a rise in the price of the product by the competitors by one percent results in a 0.68% increase in the quantity of the food product that is demanded. This value shows that the microwavable food product is not affected by the pricing strategies of the competitors. As such, the microwavable food product is relatively inelastic. As such, the pricing strategies of the competitors have no impact on the pricing strategies of the maker as they do not affect their sales. The income elasticity indicated (1.62) that if the average income in the area where the supermarkets are located increased by one percent, the quantity of the microwavable food product that is demanded will increase by 1.62%. The value of the income elasticity affects the pricing strategy of the maker in both the short-term and long-term in that following an increase in the income in the area where the supermarkets are located; the maker can decide to increase the price of the product.

Advertisement is one of the avenues through which businesses seek to increase their sales. The advertisement elasticity in the scenario was at 0.11. The implication is that if the maker of the frozen microwavable product increases their expenditure on advertisements by one percent, the resultant increase in the quantity of the food product that is demanded is 0.11%. This has an impact on the pricing strategy of the maker both in the short-term and long-term. An increased expenditure on advertising does not guarantee an increase in the demand for the product. As such, an increase in the prices of the food product might drive the consumers of the product away resulting

in a decrease in sales. The elasticity of the microwave ovens is 0.07. This indicates that a one percent increase in the number of microwave ovens in the area results in a 0.07% increase in the quantity of the food product that is demanded. This implies that the maker of the food product cannot increase the price of the product on the account of an increasing number of microwave ovens.

Recommendations

Based on the calculations made, the price elasticity, when considered in absolute zero, is bigger than one. The implications are that a reduction in the price of the frozen microwavable food product will result in an increased percentage of the quantity of the food product that is demanded. An increase in the quantity of the product that is demanded results in a larger market share. More precisely, a reduction of the price of the frozen microwavable will result in a larger market share. As such, it is recommended for the maker of the frozen microwavable to reduce the price of its product in order to control a larger market share than it has at present (Boyes & Melvin, 2015).

Demand curves

Changes in price are from 100 cents to 200 cents, to 300 cents, to 400 cents, to 500 cents to 600 cents.

$$Q = 38,650 - 42P$$

$$\text{Solving for } P = (38,650/42) - (Q/42)$$

$$Q = 5200 = 45P$$

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

Using this equation, one can solve both the curves for demand and supply

$$38,650 - 42P = 5200 + 45P$$

Solving for P requires all the like numbers to cross to the same side of the equal side.

$$87P = 33,450$$

$$P = 33,450/87$$

$$P = 384.48$$

Supply curve

The value of P can be substituted into the earlier equation to get the value of

Q

$$Q = -7909.89 + 79.1P$$

$$Q = -7909.89 + 79.1(384.48)$$

$$Q = 463.58$$

Factors Affecting Changes in Supply and Demand

The demand of the frozen food product can be affected by various factors in the market as highlighted in the calculations above. The factors include among others increase in the income of the consumers in the area where the supermarkets are located. An increase in the income will result in an increase in the demand for the product. The inverse of this equation is also true. The price and the availability of the related goods also affect the demand (Welch & Welch, 2009). For instance, the food item is frozen and also microwavable. As such, a refrigerator and a microwave are related goods. The price of these goods affects the demand for the product. A

change in the preferences of the consumers also affects the demand. The supply of the food products is affected by many factors among which include the price of the raw materials and labor. This is because these are factors of production that affect costs of production. High costs of labor and raw materials affect the supply of the product (Welch & Welch, 2009).

Shifts in Demand and Supply

Factors such as a reduction in the price of the related prices could cause a shift in the demand for the products to the right. In the same respect, an increase in the surplus income of the consumers will also shift the demand of the product to the right. On the flipside, decrease income, an increase in the prices of the related goods will cause the demand for the product to shift to the left (Hirschey, 2009). The supply of the product is also affected by numerous factors. Factors that reduce the cost of production such as advancements in processing technology, tax reliefs and subsidies from the government will shift the supply curve to the right. Conversely, factors such as increases in the cost of raw materials and labor as well as decrease availability of these factors of production will shift the supply curve to the left (Hirschey, 2009).

References

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- Hirschey, M. (2009). Fundamentals of managerial economics. Mason, OH: South-Western/Cengage Learning.
- Welch, P. & Welch, G. (2009). Economics: Theory and practice. Hoboken, N. J: Wiley.