Free report on further, we use the regression analysis to estimate the total vari...

Business, Marketing

Introduction

Our supermarket chain sells “ regular” and “ lite” variety of two brands of soda X and Y. At any given time and at any store, each brand of soda can potentially have either no promotion whatsoever or a “ price promotion” and/or an “ in-store promotion”. We are to prepare a business report on our product’s current pricing structure and proposed pricing mechanism aimed at increasing profitability of your product line.

Discussion

In the pivot table, we can infer that when the Lite brand of X used in-store promotion, the Lite brand of Y chose not to have the in store promotion (83% compared to the 7. 41% when X does not use price promo, and 75. 68% vs. 9. 46% when X uses price promotion). When the Lite Brand X uses price Promo, the Brand Y tend not to use the same strategy (56. 25% + 12. 5% vs 31. 25% when X use in store promo, and 75. 68% + 9. 48% vs 2. 7% + 12. 16% when X does not use in store promo). The lite version of both X and Y the brands don’t have in-store promotion, when both of them are having price promotion (0%). Significantly, when the Lite version of Brand X is having promotion, the Regular version of Brand is not having any promotions. Similarly, when the Lite version of Brand Y is having promotion, the regular brand of X is not having promotion. Further, when there is only price promotion on regular Brand X, there is no only price promotion on regular Brand Y.

Overall there was very little only in-store promotion of regular Brand Y concurrently with the regular Brand X (3. 42%, 2. 17%, 0. 00%, 7. 50%).

Mostly, there are no promotions on regular Brand Y alongside regular Brand X. In moderate amount of cases both the promotions in case of regular Brand of Y are there with the entire situation concerning regular Brand X (19. 01%, 2. 17%, 40. 00%, and 7. 50%). A very similar thing is experienced with Lite version of both the brands. The Brand X, promo or no promo, sold more when there was no promo on lite Brand Y (64. 55%, 83. 33%, 56. 25%, and 75. 68%). Similarly, there is moderate amount of sales of lite Brand X, when both promos are being offered for Lite Brand Y (15. 45%, 5. 56%, 31. 25%, and 12. 16%).

The scatter plot depicts graphically the relationship between – total variable cost of the regular variety of brand X soda versus the quantity of the regular variety of brand X soda – the two variables. Here the slope, which is the coefficient of X, is 0. 0178. It is the marginal rate of the change of the dependent variable, which is X. This implies that for every bottle of soda sold, there is an increase of $0. 0178 of total variable cost.

Now coming to the next parameter, which is R2. It is also called the coefficient of determination. It measures the proportion of the variation in y (dependent variable) that is explained by the variation in x. In this example, the value of R2 is 0. 9961. This statistic tells us that 99. 61% of the variation in the TVC and be explained by the variation in X. Therefore, this gives us the measure of the strength of the relationship, which in this case is very strong.

Here we notice the value of R2 to be 0. 992, which means that 99. 2% of variation in TVC can be explained by X. Analyzing the intercepts, we find that

the value of coefficient of X is 0. 01881. This means that for every incremental increase in X, there is an increase of 0. 01881 in its TVC. One should note that the P value is 0. This value of P below 1% suggests that the test is highly significant.

Next, we will be determining the Qx which is the demand function. Here we will try to determine the average quantity of the regular variety of brand X when there is no promo whatsoever on regular brand Y. This has been determined to be 6305. 39 when there is no promotion. Also, we will analyze the average quantity of the regular brand X when regular brand Y has both the promos. This has been determined to be 4512. Therefore, we infer that it is not profitable to have both the promotion at the same time. Though, it was beyond the scope of the study to infer the impact of just one promo. Here the R2 value is 0. 6199, which means only 62% of variation in X can be explained by the independent variables, which are promo or both promos.

Next, of all let us examine the demand function’s constant and slope coefficient of the regular brand of X against: no promo of brand Y and both promo of brand Y.

The demand function refers to consumer’s preference for a product, which in this case is the brand X. How much the brand X satisfies their demand. Here, if there is no promotion on Brand Y, then 62647. 27 units of Brand X will be sold. However, if both the promotion of Brand Y are on, then 62149. 93 units Brand X will be sold. This means there is minimal impact on Brand X if both the promo on Brand Y were on.

Now we will be evaluating the impact of the Price of Brand X in either of the two situations: where are no promo and both promo of Y. Here we find that

with every $ increase in price of Brand X, there is equal amount of decrease in demand for the product. This amount of decrease is same whether there is no promo on Y or both the promo.

Next, let’s examine the demand curve’s constant and slope for the regular brand of X as against: no promo of brand Y and both promo of brand Y. Before we go into that, let us explain about demand curve. It shows the relationship between what a product costs and how much a consumer is willing and able fly at a given price. In this context the constant is little value. However, the coefficient of Q of regular brand is negative. It is negative by equal amount whether there are no promotions or both promotions on Y brand. This means that for every $ increase in the price of Brand X, its demand curve goes down. However the number is very small, so the impact would be minimal

Here we infer that the profit maximizing quantity of X where both regular and lite are combined are 25, 251. However, when there are no promos in Y, the optimal mark-up is 26%; and when there are both promos in Y, the optimal mark-up is 25%. Also, as both the segments are being lumped together and treated as a single market, there price differential is zero.

Here also as both the segments are lumped together and treated as a single market, their prices differential is zero.

Like in previous case, there also the profit maximizing quantity remains as 25, 251. When there are no promos in Y, the optimal mark-up is 26%; and when there are both promos in Y, the optimal mark-up is 25%.

Here we will be examining the prics, MR, MC, MR-MC, price elasticity, and markup over price.

In these circumstances, the profit maximizing quantity is 50, 502. The price of the Brand X, whether there is no promo of Y or both promos, remains, is $0. 0188. The MR and MC in both the situations is $0. 0188. Therefore, the value of " MR-MC" becomes 0. The price elasticity in the situation is same, which is 1. 45676. Finally, the markup over prices is 0 in both the cases.

In this segment, we will be analyzing further when the customers are identifiable or not identifiable. In both these conditions, the MR-MC remains almost the same that is 0. 0129. The optimal markup remains in the range of 66~69%. The price elasticity also remains in the range of 1. 45~1. 5.

Evaluating the regression, the R2 value is 0. 6199. This means that 62% of the variation in dependent variable can be explained by independent variable.

Here we will take the following constraints, (a) when Qx when there is no promo on Y ≤ 6, 000, and (b) when Qx when there are both promos on Y ≤ 5, 000

In the first situation when there are no promos and Y ≤ 6, 000, the optimal markup is 11%. And in the other situation, with both promos Y ≤ 5, 000, the optimal markup is 9%. The price elasticity in the first case is 9. 12, and in the second case it is 6. 33.

Conclusion

When the Lite version of Brand X is having promotion, the Regular version of Brand is not having any promotions. Similarly, when the lite version of Brand Y is having promotion, the regular brand of X is not having promotion. Next,

with every bottle of soda X sold, there in an increase in TVC by $0. 0178. The correlation is very strong as 99. 6% variation in TVC is explained by the variation in X. The regression analysis further proves the point.