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OVER OR UNDER PRICING OF BRAND: A LINEAR ESTIMATION TECHNIQUE OF ASSESSMENT

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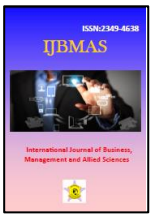

ABSTRACT

Most studies on pricing are conducted with an objective of assessing volume sensitivity (demand levels) dependent on price movements. Some studies focus on relationship of price to value / utility-based associations i.e. conjoint analysis studies.

Most of the above-mentioned studies require extensive primary research. Such studies assess data through a predetermined model, draw inferences and present findings at an aggregate level. Since such studies are elaborate and exploratory in nature, they require investment of time and money.

One area of any marketeer's concern is whether his brand is over or under priced. The paper explores a generalized (though simplified) model of price and market share assessment to indicate whether a particular brand is over or under priced. The model uses secondary data which is readily available or can be easily surmised from market trends. The model, therefore, not only is economical but quick in providing directional results.

In conclusion, the paper considers alternate strategy themes for over and under-priced brand offers depending on the sales volume predicted vis-à-vis price. Under-priced priced brands are those brands where the predicted volume for the brand at its given price is greater than the current volume sold. In this case, marketer can engage in creating market capabilities such as awareness & distribution networks. If the brand is over- priced, i.e. selling more than the predicted volume, the marketer may want to strengthen the brand by line diversification, brand extensions etc.

Key words: linear price, triangulated model, difference cut off, predicted volume

Introduction

One area that has perpetually troubled marketers is the pricing of their brand. Typical questions that emerge in this area are:

a) Is my brand overpriced?

b) Is my brand underpriced?

Since "*right price*" is utopian in nature and seldom static, we can ignore its assessment at this stage of the paper discussion.

Corollary, the question is, whether there exists some technique to assess over or under pricing of brands?

The paper proposes to measure brand pricing in correlation with its sales within similarly priced or price comparable brands to have significant correlation between price and sales. In other words, fashion product, (with high price variations) would become poor product choices for study while generic drugs or cement etc. can be excellent examples due to their price convergence.

Comparative assessment

The model is built on parsimonious data of price (independent variable) per unit of brand and the sales (dependent variable) made in a period. The model is *triangulated* between the highest and lowest price brand and their respective volumes, compared with our brand's price and volume, respectively. Linear coefficients are drawn for predictive analytics to determine over or under priciness of our brand vis a vis the volume sold, which is the marketer's concern.

Model conditions

To strengthen the price invariability condition for the study, the price of brands compared typically should have a skew value with the tolerance limit of ±1, indicating overall price homogeneity. However, the condition is relaxed in case of the dependent variable i.e., sales of the brand thereby yielding robust model coefficients.

The model, further, assumes the market to be a segment, geography, buyer population etc measured per unit of time

As indicated, the technique used is a single factor linear regression model with independent variable, viz. price and its impact on sales. Also, the underlying assumption of inverse price volume relationship holds for all practical purposes.

Since linearity conditions strictly apply to the model, subsequent predictive volumes can be easily determined.

Material and method

Let us assume the market data for a particular period for price per unit and sales given in table 1 below.

Table: 1 Brands for study with price per unit and volume for a generic medicine.

Brands	Price/tablet	Vol/ Strips
a	0.9	200
b	1.6	150
c	1.9	10
d	1.7	150
e	1.1	50

Let us assume that the company's brand is "e." From the above, there is a high priced brand, brand "c," selling strips 10 and the lowest price selling brand, brand "a" selling strips 200 at their respective prices.

The model proposes to establish a formal regression relationship between the market extremes of brand "a" and brand "c."

For linear regression we can reduce the above table to:

Table: 2

Brands	Price/tablet	Vol/ Strips
a	0.9	200
c	1.9	10

The linear relationship between price and Vol/strips can be estimated as:

$$Vol/Strips = 371 - 190 \times$$

Subsequently, the model posits to establish a relationship between brand "e" and brand "c" the constant brand, since extreme value relationship coefficients i.e., brand "a" and brand "c" have already derived from Table 2 values

To obtain regression coefficient values for brand "e" and "c" we can consider the reduced form table as below:

Table: 3

Brands	Price/tablet	Vol/ Strips
e	1.1	50
c	1.9	10

The linear relationship between price and Vol/strips can be estimated as:

$$Vol/Strips = 105 - 50x$$

Given below is a generalized relationship between brands, prices, and volumes.

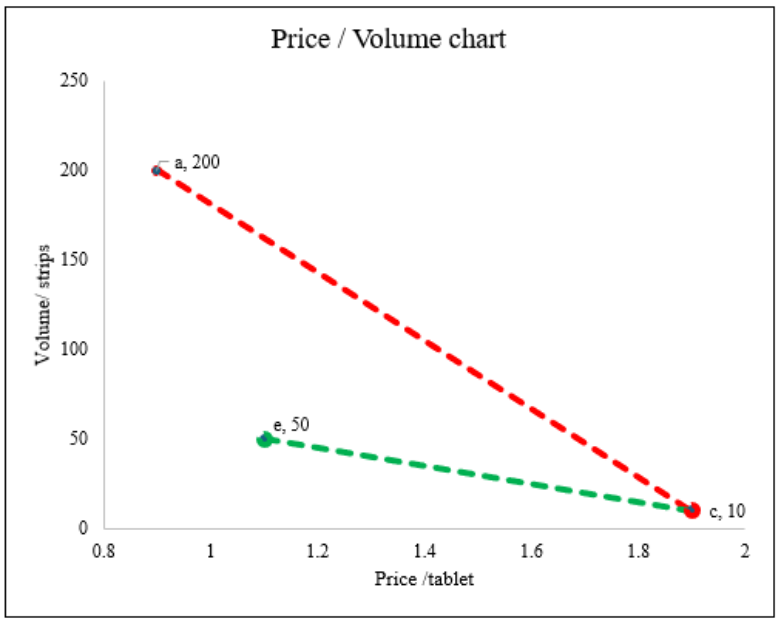

Figure 1 Scatter plot relationship between brands

The above diagram (Figure 1) depicts the inverse relationship between price and volume for the three brands in consideration.

Another way to examine the classification of the brand data is to generate a simple price / sales volume perceptual map as under.

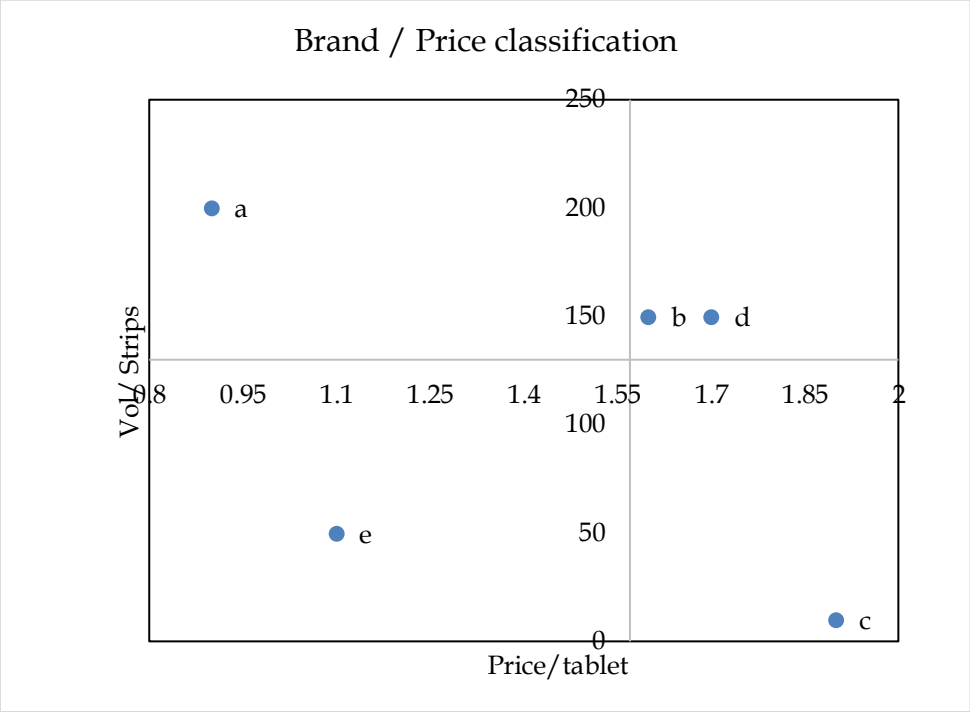

Figure 2: Brand / Volume perceptual map

In the above classification, all brands in Table 1 are depicted. The axis values considered are the mean values of all the brand for price and volume. As seen in Table 5, the distance between brand "c" and brand "a" is the longest, where brand "a" sells maximum volume for lowest price and brand "c" sells minimum volume for highest price. Since we are studying price volume relationship between brands, in a triangulated form, we consider the extreme price brand "c' and its volume regression with the extreme volume brand "a" and our brand "e"

The model, as mentioned earlier, considers two extreme brands for a fixed linear relationship. (see Table 2) and uses its derived regression coefficient values of:

$$Vol/Strips = 371 - 190 \times$$

Where brand "c" is the high price, low value brand which is compared with brand "a" which is low price high value brand. Since values are based in single factor linear regression, the difference in the resultant constants too will yield linear differences which are used in predicting volumes. The process is detailed below.

Model steps

1) Derive the extreme value limit regression values, in our case brand "c" and brand "a"
2) Derive the regression values for our brand "e" with brand "c"
3) Take the differences in value

i.e.

For, a and c brands

$Vol/Strips = 371 - 190 \times \ldots$ (1)

For, e and c brands

$Vol/Strips = 105 - 50 \times \ldots$ (2)

Difference in intercept = $371 - 105 = 266$

Difference in slope = $190 \times -50 \times = 140 \times$

The rewritten equation can be termed as the *difference cut-off* equation which is used to determine predicted volume values.

Difference cut-off equation:

The difference cut-off equation is the differences between the linear values of equation 1 & 2 as above.

$$Y = 266 - 140 \times \ldots (3)$$

Since our brand "e" is Rs. 1.1 per unit, by substitution, yields volume "y" = 112. Since brand "e" is selling 50 units and we consider the equation 3 as a difference between the values of equation 1 and equation 2, we can conclude that brand 'e" is underpriced for the quantity sold i.e., 50.

Conversely, ceteris paribus, the price for the volume sold for brand "e" should be, ~1.42 per strip for the sale of 50 strips. However, if brand "e" were priced Rs. 1.50, it would be overpriced for recorded volume of 50 strips.

Average Value as model input

Some marketeers may want to consider a range of values for development of the model. One other method to do this is to consider the average values of price and volume of all the brands in place of brand "a" while keeping the extreme brand "c" constant and run the same model for our brand "e." This might change the price but within tolerance levels since only comparable brands were considered for the study.

Conclusion

The study has marketing implications for both under and overpriced brands. One such area is volume correction for the same price. For instance, the projected volume for brand "e" was 112, where it was selling 50. This is case of an underpriced brand for the low volumes its sells. The gap can be bridged through managerial recommendations viz. distribution coverage, retail presence management etc.

The other alternative is to increase the price of the brand and match it for the quantity sold through strong promotion, branding, and retail promotion. Either way, the brand "e" can seek parity with the predicted model results

Limitations

The model is easy to understand and works on scanty data. On the surface, it is tempting to be tried out by marketers. However, the issue involved is that the results of being over or underpriced may have some latent variables apart from price whose effects may not be captured by the model. The model will have to be evaluated with other price-based studies to yield more healthy results.

Future researchers can explore these areas and make the model more robust than it is.

Bibliography

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