International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Observed Value of "Attraction" in Brand Purchase Incidence Model Objective and Explanation

Rajesh Deshpande

Visiting Faculty, SBUP

Abstract:
The model's objective is to calibrate "value of attraction", observed by buyers when they select a brand. The model proposes the logic that the buyers perceive the value of any brand through the average reference price of other brands in their consideration set with reference to their average attraction value which forms a linear relationship

The objective of the paper is to demonstrate the observed value of brand attractiveness in purchase incidence.

The model is based on the assumption that purchase incidence and market share is proportional to brand 'attractiveness'. However, actual market shares of brands differ from expected market shares due to several factors which we could term as "disturbances" that reduce the brand buyer's ability to see the "value" in the brand to its fullest potential.

The paper proposes to develop a normative tool to calibrate "value of attraction" observed by buyers when they select a brand. In doing so, the model posits that buyers perceive the value of any brand from the point of view of the average reference price of other brands in their consideration set. The reference prices to attraction value of such a brand form a linear relationship.

The objective of the model is to present a non-complex understanding of:

1. How much of the value (attraction coefficient) is noticed / realized by brand buyers when they make a brand choices?
2. How can we compare brands by their observed attraction share and their actual market shares indicating latent potential for brands to increase their observational value or alter their prices?
   Even though, earlier work on the subject has been deep in understanding the calibration of attraction share and implied market share, the estimate of actual value observed by the consumer in a brand's claim is lacking.

Model and explanation

$$Share = O_i (A_{p*} / P_{p*}) + (1-O_i)\, d^2$$

Where;

Share = Actual Market share of the brand

O_i *= Observed value of the attraction coefficient*

A_{p*} *= Actual price of the brand to end buyer*

P_{P*} *=Perceived price of the brand (factor of attraction share)*

$d^2 = (A_{s**} - P_{s**})^2$

("Actual" share of the brand minus "Observed" share)

A_{s**}= *Share*

P_{s**}= *Observed share (Attraction market share)*

$O_i + (1- O_i) = 1$ *(where* O_i *is a constant)*

Assumptions

1. The model is based on the premise of attraction share yields market share. The term "attraction" considers all elements in the marketing mix, including price.
2. Attraction share is non – negative.
3. Attraction value of the brand determines purchase probability and perceived price for the brand.
4. Since, Oi + (1- Oi) = 1, the maximum attraction observation value for any market share is 1.

Model working

Attraction share model – basic form

- Basic multi-nominal model to represent "probability of choice." The individual's probability of choosing brand 1 is:

$$Pi1 = \frac{e^{A1}}{\sum_i e^{A_i}}$$

Pi1 = Probability of selecting brand 1 out of a set of brands

Where;

$Aj = \sum W_k b_{ijk}$

A_j = *Attractiveness of brand "j" to individual "i"*

W_k = *Importance associated with attribute "k"*

b_{ijk} = *Individual 'i'' s evaluation of brand 'j' on attribute 'k'*

By implication, the above working can indicate a hypothesized market share for the brand based on perceptual value. Alternately, the above model also suggests the "attraction" rate. A_j is used later in the paper.

Model Explanation

The model postulates that actual attraction value of the brand may not be entirely observed by the buyer as this could be influenced by the frame of proportional reference in price and value of competing brands which act simultaneously. This influence is termed as 'disturbance'.

The model is based on the premise that, the buyer's ability to judge a single brand's value is influenced by average attraction value and perceived price effects of all brands in the consideration set, where perceived attraction rate and perceived price of the brand form a linear relationship. Purchase incidence is a function of this metric.

Implicitly, if the average price of the brands in the market is say 1.96 (index of value), which equals say $31.60 in price, and the selected brand's value index indicates 1.31, then, the estimated price of the brand by unitary method, is around $ 21, irrespective of the actual price of the brand.

The model postulates, even though two brands may have equal attraction shares and market shares but different market prices, would end up having different coefficients of observed attraction value. Accordingly, even if a brand's market share comes up to very close to its perceived share, the brand still may have low observed attraction value if it has a low overall market share or may have a large difference in its actual and estimated prices. Derivatively, relative changes in price or attraction share of the reference brands would alter the observational value of all the brands.

Model Building steps:

1. Calibrate the attraction rate (logit model based on Luce axiom used in this case) and market share of the brand given actual market share
2. Calibrate proportional price for such attraction rate given current market price of all the relevant brands in the set
3. Calibrate model value for attractiveness given difference between actual market share and attraction share with reference to actual market price and estimated price of the selected brands

Consider the following data for a hypothetical set of brands:

Brands	Attractiveness index	Market share	Actual Price
A	2.50	28%	$33
B	2.39	15%	$10
C	2.50	15%	$75
D	1.31	28%	$10
E	1.09	13%	$30

Attractiveness Index, calibrated through any suitable model (logit model used in this case).

The calibrated attractiveness share and perceived price for the respective brands is as follows;

Brand	Attractiveness index	**Value= $exp^{(x)}$	Perceived Share**
A	2.50	12.2	29%
B	2.39	10.9	26%
C	2.50	12.2	29%
D	1.31	3.7	9%
E	1.09	3.0	7%
Total		41.9	100%

Attractiveness index = x

The impact of attractiveness index on price is posited to be linear as perceived market share for the brand is considered in its exponential form (**See model for attractiveness and Pi, above).

Brand	Attractiveness	Actual Price	Perceived price
A	2.50	$33	$40
B	2.39	$10	$39
C	2.50	$75	$40
D	1.31	$10	$21
E	1.09	$30	$18
Average	1.96	31.60	

Using the model form, the value of the observed attraction (O_i) can be determined.
For brand 'A'
$0.28 = O_i$ ($33/$40) + (1-O_i) $(0.28 – 0.29)^2$
Intuitively;
The buyer observed value for brand A = 0.35. Similarly for brand C, which has equal attractiveness as brand A, has a buyer observed value = 0.07.
However for brand D, with attractiveness index being low as 1.31, the observed attraction value = 0.56, which is significantly higher as compared to brand C.

Model Implication

The model can be used by marketers to determine, normatively, how much percentage of their claimed value is being observed by the buyer since it could be discounted due to differences in price or attraction shares.
The model could be effective in understanding the following questions;

1. Is the brand over priced for its value?
2. Which competing brands have better 'value observation' coefficient and could pose a marketing threat in the future?
3. The model can be also be effective in explaining, in some manner, why some brands with high prices also have proportionally high market shares.

Limitations

The model is based on calibration of perceived market share. In this case, we have considered the multinomial logit model for calibration. The other limitation is that the model is normative and directional for marketers in decision making and its application could be tested on panel data for validity. Further, the model is effective in tracking comparable brands and may require a different estimation technique when it assesses brands of differing levels of comparability.

References

1. A Market Share Theorem
2. David E. Bell; Ralph L. Keeney; John D. C. Little - *Journal of Marketing Research*, Vol. 12, No. 2. (May, 1975), pp. 136-141.