

# Product and Brand Management (MK 8620)

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Center for Excellence in  
**BRAND & CUSTOMER MANAGEMENT**

Professor: V. Kumar  
J. Mack Robinson College of Business  
Georgia State University  
Office Hours: By appointment  
Email: vk@gsu.edu

## Assignment 3- Perceptual Mapping and Preference Analysis

**Note:** Please submit your assignments in the “assignments” tab on iCollege. Please name the document as: *MK8620\_LASTNAME\_FIRSTNAME\_3*

1. In a large sample, people were asked to rate how much they liked each of the five beverages: milk, coffee, tea, fruit juice, and soda pop. Through factor analysis the following table of factor loadings was obtained. What might each of the three factors be?

**Factors**

<b>Beverage</b>	<b>I</b>	<b>II</b>	<b>III</b>
Milk	0.504	-0.251	-0.217
Coffee	-0.209	0.373	-0.328
Tea	-0.137	0.682	0.307
Fruit juice	0.475	-0.107	0.110
Soda Pop	0.368	-0.645	0.534

2. A group of customers is asked to rate five different brands of coffee on two characteristics: strength and body. Each brand is rated on a scale of 1 to 7 for each characteristic. Each consumer is also asked to rate an ideal coffee. The average brand ratings are as follows:

<b>Brand</b>	<b>Strength</b>	<b>Body</b>
A	3	4
B	6	4
C	6	3
D	2	3
E	1	1
Ideal	5	5

- a. Represent these perceptions in Euclidean 2- dimensional space and order the brands according to their probable market share if product characteristics were the only factor that counted.
- b. Suppose that a regression analysis found the following relationship to be true:

$$M_i = \frac{K}{d_{is}^2} + \frac{3K}{d_{ib}^2}$$

Where  $M_i$  = market share of brand i  
 $K$  = Constant  
 $d_{is}$  = distance for brand i from ideal on strength  
 $d_{ib}$  = distance for brand i from ideal on body

Find K. Calculate the shares of brands A through E from the model

Hint: Since market shares must always sum up to 1,  
 $M_{\text{total}} = M_A + M_B + M_C + M_D + M_E = 1$ .  
 Therefore,  

$$\left( \frac{K}{d_{As}^2} + \frac{3K}{d_{Ab}^2} \right) + \left( \frac{K}{d_{Bs}^2} + \frac{3K}{d_{Bb}^2} \right) + \dots + \left( \frac{K}{d_{Es}^2} + \frac{3K}{d_{Eb}^2} \right) = 1 \dots (1)$$
 where,  $d_{As}^2 = (\text{Ideal brand's Strength rating} - \text{Brand A's Strength rating})^2 = (5-3)^2$   
 Using the above equation, you can compute the value of K.  
 Once the value of K is known, market share for any brand can be computed using the equation given in the problem. (i.e.  $M_i = \frac{K}{d_{is}^2} + \frac{3K}{d_{ib}^2}$ )

- c. Suppose a new brand F was found to be rated as: Strength = 3, Body = 3

What would the estimate of its market share be?  
 How would it draw that share from other brands?

Hint: Once Brand F is introduced, there will be 6 brands in the market. However, total market share remains 1. Thus, the left hand side of the equation (1) can be modified to include the market share of Brand F. Then, compute the new value of K (i.e.  $K_{\text{new}}$ ).

Using,  $K_{\text{new}}$ , compute the market shares for all brands. Compare the new market shares of Brands A-E with those computed earlier to see how market shares of each brand changes.