

Newfood case

Mr. Conrad Ulcer, newly appointed New Products Marketing Director for Concorn Kitchens, was considering the possibility of marketing a new highly nutritional food product with widely varied uses. This product could be used as a snack, a camping food, or as a diet food. The product was to be generically labeled Newfood.

Because of this wide range of possible uses, the company had great difficulty in defining the market. The product was viewed as having no direct competitors. Early product and concept tests were very encouraging. These tests led Mr. Ulcer to believe that the product could easily sell 2 million cases (24 packages in a case) under the proposed marketing proposal involving a 24-cent package price and an advertising program involving \$3 million in expenditures per year. There were no capital expenditures required to go national, since manufacturing was to be done on a contract-pack basis.

Because there was considerable uncertainty among Concorn Management as to either probable first-year and subsequent-year sales, or the best introductory campaign, Ulcer decided that a six-month market test would be conducted. The objectives of the test were to:

- Better estimate first-year sales.
- Study certain marketing variables to determine an optimal or at least better introductory plan.
- Estimate the long-run potential of the product

These objectives were accomplished through the controlled introduction of the product into four markets. Conditions were experimentally varied within the grocery stores in each of the four markets. Sales were measured with a store audit of a panel of stores. Preliminary results had been obtained. Now it was up to Mr. Ulcer to understand their implications on the introduction of Newfood.

Design of Experimental Study

The three variables included in the experimental design were price, advertising expenditures, and location of the product within the store. Three prices were tested (24cents, 29 cents, and 34 cents), two levels of advertising (a simulation of a \$3 million introduction and a \$6 million plan), and two locations (placing the product in the bread section versus the instant breakfast section). Prices and location were varied across stores within cities while advertising was varied across cities. The advertising was all in the form of TV spots. The levels were selected so that they would stimulate on a local basis the impact that could be achieved from national introduction programs at the \$3 million and \$6 million expenditure

levels. Due to differential costs between markets and differential costs between spot and network (to be used in national introduction), an attempt was made to equate (and measure) advertising inputs of gross advertising impressions generated, normalized for market size. Unfortunately, it was not possible to achieve exactly the desired levels. This was due to the problem of non-availabilities of spots in some markets and discrepancies between estimates of TV audiences made at the time the test was being planned and the actual audiences reached at the time the commercials were actually run.

In the selection of cities and stores for the tests, attempts were made to match stores on such variables as store size, number of checkout counters, and characteristics of the trading area. Because it was not certain that adequate matches had been achieved, Ulcer decided to obtain measurements on some of these variables for possible use in adjusting for differences in cell characteristics. He also felt that it might be possible to learn something about the relationships between these variables and sales, and that this information would be of assistance in planning the product introduction into other markets.

```
newfood =
data.frame( sales=c(225,323,424,268,224,331,254,492,167,226,210,289,204,288,245,161
,161,246,128,154,163,151,180,150),
price=c(24,24,24,24,24,24,24,24,24,29,29,29,29,29,29,29,29,34,34,34,34,34,34,34,34),
ad=c(0,0,1,1,0,0,1,1,0,0,1,1,0,0,1,1,0,0,1,1,0,0,1,1),
loc=c(0,0,0,0,1,1,1,1,0,0,0,0,1,1,1,1,0,0,0,0,1,1,1,1),
income=c(7.3,8.3,6.9,6.5,7.3,8.3,6.9,6.5,6.5,8.4,6.5,6.2,6.5,8.4,6.5,6.2,
7.2,8.1,6.6,6.1,7.2,8.1,6.6,6.1),
volume=c(34,41,32,28,34,41,23,37,33,39,30,27,37,43,30,19,32,42,29,24,32,36,29,24),
city=c(3,4,1,2,3,4,1,2,3,4,1,2,3,4,1,2,3,4,1,2,3,4,1,2))
```

Questions:

1. Compute the correlation matrix. How do you explain the 0 correlations (e.g., between location and advertising)?
2. Run a regression of **sales** (the first two months sale) on **price** alone. Next, on **price** and **ad**. Finally on **price**, **ad**, and **loc**. Thus, you will have three regressions. What happens to the coefficients of **price** in the three regressions? What happens to the coefficients of **ad** in the two regressions? Explain.
3. Run a regression of sales against **price**, **ad**, **loc**, and **volume**. What happens to the coefficients of **price**, **ad**, and **loc** which you found in the third regression in question 2 above? Which coefficient changes the most with the introduction of store size? Why does this happen?
4. Finally, run a regression with all variables. What changes do you observe? Explain.
5. What additional regression runs, if any, should be made to complete the analysis of these data?