

### MP3 Data Variables

1. **Retailer Type:** Dummy variable for superstore (e.g., Carrefour), 3Cs chain store (e.g., Tsan Kuen), specialty store (service station), and others
2. **National Brand** vs. OEM product:
3. **Product Variants:** model ID, package (color), memory size
4. **Manufacturer price, Retail price, and gross margin**
5. **Dollar gross margin:** net selling price – cost from vendor
6. **Gross margin %:** (net selling price – cost from vendor)/net selling price
7. **Dollar net contribution margin:** net selling price – cost from vendor – direct product cost
8. **Net contribution margin %:** (net selling price – cost from vendor – direct product cost)/net selling price
9. **Herfindahl index:** sum of squared market shares of all products/brands in MP3 category, (Decreases in the Herfindahl index generally indicate a loss of pricing power and an increase in competition, whereas increases imply the opposite.)
10. **Deal frequency:** frequency of price discount to a specific retailer (or store)
11. **Deal depth:** average percentage discount when the product is sold below average price
12. **National brand share:** dollar sales of store brand/total dollar sales of MP3
13. **OEM product share:** dollar sales of OEM product/total dollar sales of MP3
14. **Ratio of OEM to national-brand price:** retail selling price of OEM/average retail selling price of national brands
15. **Product purchase cycle:** 5%, 12.5%, 32.5%, 32.5%, 12.5%, 5% of purchase cycle.

### Data Analysis Plan

1. **Descriptive statistics:** frequency, %, mean, median, skewness and kurtosis
2. **Cross tabulate:** V1 vs. (V5, V6, V7, V9); V10 vs. (V5, V6, V9); V15 vs. (V5, V6, V7)
3. **“Causal” Modeling:** I.V. = Mean value of national brand whose market share is <5%, <35%, >35%; D.V.= V5, V6, V7, V9
4. **Regression Model:** e.g., Margin = V1, V9, V10, V11, V15,
5. **Logistic Regression:** DV= V2 or V15
- 6 **HLM (Random coefficients):** V2 and V15 as the nested variables