Conjoint Survey Design and Analysis

(CPG Company)

- **Designed and analyzed a conjoint survey** to better understand price elasticity for a product launched in an adjacent segment
- Leveraged price elasticity and product cost information to **identify the optimum launch price for the product**
- Generated **sales and market share forecast** after launch to estimate build quantity for the procurement team

CONJOINT SURVEY DESIGN AND ANALYSIS TO ESTIMATE THE OPTIMUM PRICE

ABOUT THE CLIENT

A fast-growing Natural Wellness brand, wanted to identify the optimum price **for their new product** to penetrate a new segment

SITUATION

- The company had limited information about the **segment and brand level price elasticity**, which limited its ability to price the product in an optimal way
- In addition, the company wanted to understand consumer acceptance levels for the brand in the new segment to **forecast sales and market share** after launch

VALUE ADDITION

- **Researched the target segment of the client's new product**, to identify pricing and market share trends, to identify competitor brands and base prices for the conjoint survey design
- **Designed a choice-based conjoint survey**, which provides product choices (proposed product and top competitors) with randomized price options to respondents. The design also **included a screener section** to select appropriate respondents for the survey.
- Worked with a third-party research company and provided them with a complete set of coding rules for **implementing the survey**
- Analyzed the survey results **using logistic regression to estimate self and cross price elasticity** of client and competitor products

IMPACT

- The client leveraged the insights from the conjoint survey to make **pricing decisions for the new product**
- The analysis **provided visibility for the client into customer preferences** for various brands and helped fine tune the forecast for the new product

CONJOINT SURVEY DESIGN METHODOLOGY (1/2)

Product descriptions

Products for the survey chosen based on their market share in the Target Category

- **A – Competitor A**
- **B – Competitor B**
- **C – Competitor C**
- **D – Company product**

Price Levels

Five price points were considered for each product for the survey as 10% below current base price, base price, 10% above base price, 20% above base price and 40% above base price

Other price points | Base Price

- **A – Competitor A**

$ 4.45	$ 4.94	$ 5.38	$ 5.83	$ 6.72

- **B – Competitor B**

$ 4.45	$ 4.94	$ 5.38	$ 5.83	$ 6.72

- **C – Competitor C**

$ 3.31	$ 3.68	$ 4.01	$ 4.34	$ 5.00

- **D – Company product**

$ 4.94	$ 5.49	$ 5.99	$ 6.49	$ 7.49

Question Bank

A list of 625 questions based on various combinations of price levels for the various products is created

Question: Which product would you purchase given the prices below?

Products	A	B	C	D
1)	$ 4.94	$ 4.94	$ 4.01	$ 4.94
2)	$ 5.83	$ 4.45	$ 4.34	$ 6.49
3)	$ 4.94	$ 6.72	$ 3.31	$ 6.49
4)	$ 5.38	$ 6.72	$ 4.01	$ 5.99
5)	$ 4.45	$ 4.45	$ 4.34	$ 5.49

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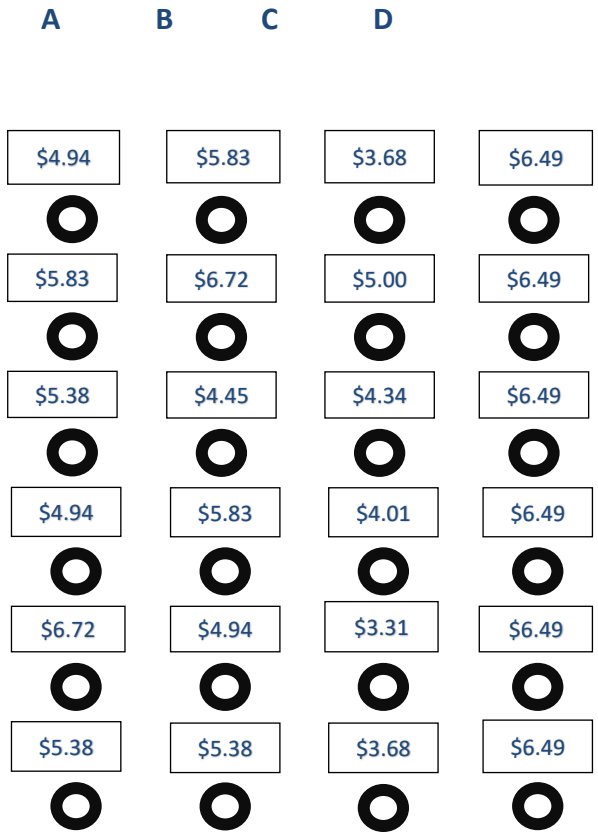
CONJOINT SURVEY DESIGN METHODOLOGY (2/2)

Question Bank

- ……
- ……

Survey Design

Each user is asked 6 randomly selected questions from the question bank.
Question: Which product would you purchase at the below prices?
Products



Self-elasticity

Self-elasticity estimated at the base price of a product is an estimation of the expected % change in volume for every 1% change in price for the product. For instance, a self-elasticity of -2 indicates that volume is expected to increase by 2% for every 1% decrease in prices of the product.

Self-elasticity is estimated using a multivariate logistic regression model (GLM) based on the price of a product and whether the user had chosen the product.

Cross-price elasticity

Cross-price elasticity of product A to Product B is an estimation of the expected % change in volume of Product A for every 1% change in price of Product B.

Cross-price elasticity is also estimated using a multivariate logistic regression model (GLM). The price points of all products and a customer's choice of a specific product are entered as data for estimating the cross-price elasticity of a product to its competitor products.

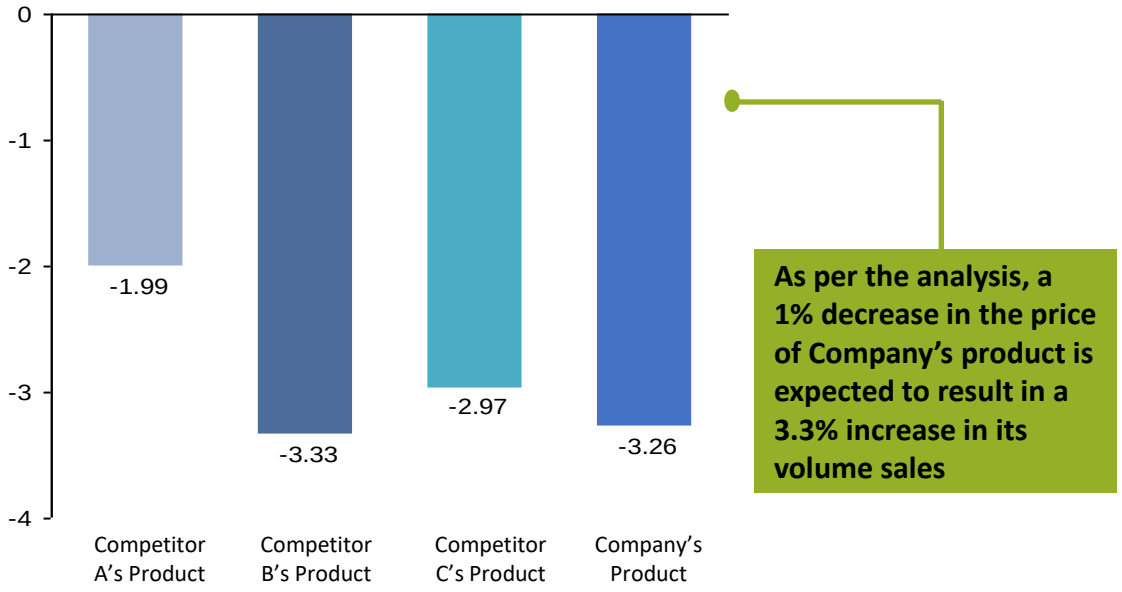
CUSTOMER SELF ELASTICITY RESULTS

Self-elasticity[1] is the expected percent change in the volume of a product due to 1% percent change of its price

ILLUSTRATIVE

Price Elasticity by product

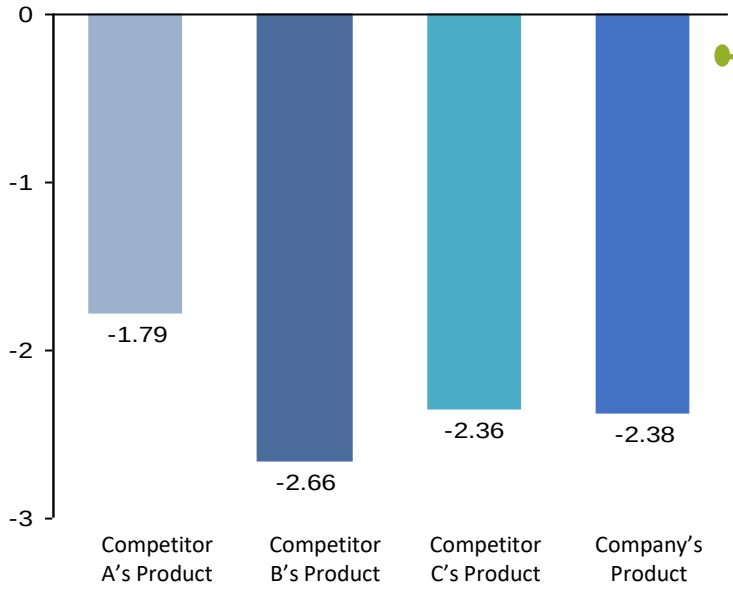
Total # of consumers: **938**



As per the analysis, a 1% decrease in the price of Company's product is expected to result in a 3.3% increase in its volume sales

Total Responses

Total # of Category A consumers: **533 out of 938**



As per the analysis, a 1% decrease in the price of Company's product is expected to result in a 2.4% increase in its volume sales

Category A[2] consumers

1 Self-elasticity estimated is at the base price of a product. The self-elasticity might shift as we go further from that price.
2 Category A consumers is a segment of consumers which is more responsive to the company's brand positioning