Profit Maximization Strategy for a Luxury Brand

Introduction

Luxury brands operate in a unique market where pricing and exclusivity shape consumer demand. The challenge for such brands is balancing **prestige, accessibility, and profitability**. Setting a high price enhances exclusivity and brand status but can reduce the number of potential buyers. Lowering prices, on the other hand, may attract a broader customer base but risks diminishing the brand's perceived exclusivity.

In this challenge, you will develop a system dynamics model to explore the **optimal pricing and quality strategy** for a luxury brand, ensuring long-term profitability while maintaining brand prestige. Your model should distinguish between two types of customers: those who prioritize exclusivity and are less sensitive to price, and those who aspire to own luxury goods but are more responsive to pricing. A key dynamic to capture is how perceived exclusivity changes based on pricing decisions, competitive positioning, and how widely the product is adopted.

Brand prestige is not only a function of price but also depends on **product quality** and **competition**. Increasing quality enhances brand value but also raises production costs, affecting profitability. Additionally, prestige is **relative**, meaning that a brand's positioning is influenced by the pricing and quality strategies of competitors.

Your objective is to **simulate different pricing and quality strategies** and determine which approach maximizes profitability over time while maintaining exclusivity and desirability.

Modeling Steps

(a) Start by developing a **core demand model** that differentiates between two consumer segments. The first segment consists of customers who value exclusivity and quality and are less sensitive to price. Their purchasing decisions depend on how prestigious the brand remains. The second segment includes customers who aspire to own the product and are more influenced by price but may lose interest if too many others own the same item.

(b) Next, incorporate **brand prestige** as a dynamic factor. Prestige should increase when the product is priced higher than competitors and when quality investments are made. However, if the product becomes too widely available, its exclusivity may decline, causing some customers to shift preferences.

(c) Introduce **cost structures** into the model. Higher quality increases prestige but also raises production costs, affecting profit margins. Your model should calculate total profit as a function of price, cost, and sales volume. A key trade-off to explore is how much a brand should invest in quality to sustain long-term

Commented [GL1]: Really glad to comment on this really well done work. I hope to give you helpful suggestions.

Commented [GL1R2]: A good Introduction!

Commented [GL2]: In this part, you could be a bit more specific about the mechanism you want to model:
-How are you going to model the buyer dynamics?
-Is it a one-off purchase or a repeat purchase?
-How do you model the quality structure?

Commented [GL3]: One way to improve the differentiation between customers could be to focus the attention of the former on exclusivity and quality, and the attention of the latter on the quality-price ratio.

Commented [GL4]: It seems to me that prestige and exclusivity are a redundant concept, the use of a single work could improve clarity.

profitability without pricing itself out of the market.

(d) Once the base model is established, extend it by **introducing competition**. Br and prestige should be relative, meaning that if a competitor raises its prices or improves its quality, the perceived prestige of the modeled brand may shift. This allows for testing strategies where the brand dynamically adjusts its pric ing and quality investments in response to the market landscape.

Commented [GL5]: Are the competitor mechanisms e ndogenous? Or are the follow-up reactions endogeno us? More detail on this part might help in modelling the problem.

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