

Loyalty Program and Price Sensitivity: Investigating Optimal Pricing Strategies for Starbucks Frappuccino in the Chinese Market

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Abstract. As the growing Chinese coffee market becoming more competitive nowadays, premium brands like Starbucks are facing raising pressures from the struggle to balance their premium image while keeping price sensitive customers. This research investigates how the Starbucks Reward loyalty program and pricing strategy would affect Chinese customers' decision on the purchase of its Frappuccino products. By collecting data from surveys and regression analysis, the research gives result on what are the crucial factors influencing customers' purchasing decision, including their enrollment in loyalty programs, products' price affordability, and the extent of promotions. Surprisingly results also show that even though taste is one of the strengths of the brand, it does not contribute a lot in shaping customers' decisions to buy. Instead, strategic implementation of loyalty rewards and strategic pricing against competitors are critical factors. Analysis shows that an acceptable price range for Frappuccino lies between 31 to 38 CNY, while suggesting it prices at 35 CNY to maintain their premium image while leaving potential room for promotions. Feasible pricing and advertising strategies are also introduced. This study offers premium brands around the world valuable insights on how to monitor customers' expectations in the emerging innovative and price sensitive markets.

Keywords: Loyalty Program, Price sensitivity, Starbucks China, Pricing Strategy, Consumer Behavior.

1. Introduction

1.1. Research background

The coffee market in China has expanded rapidly, and the habit of coffee consumption has gradually turned from a minor behavior of high-income groups to a much more popular trend among the general public. Customers are now seeking much higher standards of brand innovation, convenience, and affordability experience. As one of the earliest coffee brands that entered the

Chinese market around 26 years ago, Starbucks has positioned itself at a premium level, offering a high-quality in-store experience, serving as the “third space” for employees between their office and home. This exceptional brand design, which is hard to replicate, assisted Starbucks in dominating the Chinese coffee market for quite a long time.

However, in recent years, Starbucks’ revenue has experienced declines due to intensive competition from local brands like Luckin Coffee, which offers much more competitive pricing to more price-sensitive public consumers. The substantial number of promotions helped them effectively attract the downstream market, a large fraction of the Chinese population. Under this scenario, Starbucks faces a challenge in preserving its premium image in market positioning while adapting to a much more competitive market filled with low prices and discounts.

One of the most important tools Starbucks implemented to increase customer retention and strengthen its bonds with consumers is its loyalty program, Starbucks Rewards, a system that provides members with point-based benefits and special offers. However, such a system is facing critical debate on its eventual effect [1]. Some agree with the original intentions, while others argue that it will cultivate customers’ habits of discount expectation and increase their price sensitivity. We will discuss this further in the literature review.

1.2. Research objective

Given the challenges Starbucks is facing right now, this research aims to discover an optimal price point for Starbucks’ Frappuccino products in the Chinese market based on regression and competitor analysis with several relevant variables like customer price and taste precision, impression on the loyalty program, etc, to remain its profitability. Specifically, the study will explore how the loyalty program, price competitiveness to competitors, and implementation of promotions impact customers’ decisions on product purchasing.

1.3. Methodology

In order to address this objective, we surveyed Chinese consumers, collecting their demographic information, opinions on various brand attributes, and purchase intention based on several detailed scenarios, including both Starbucks’ and other brands’ beverages. Then, we used linear regression to conclude which elements are significantly associated with customers’ willingness to purchase. In addition, we acquired a quantitative price estimation that meets the market expectation and acceptance by collecting data on what price consumers expect a Starbucks product to be.

1.4. Contribution

This research aims to provide Starbucks with practical suggestions on pricing strategies and further showcase customers’ behaviors toward price anchoring, loyalty programs, and promotions under the context of brands with premium positioning in the market. Along with the flourishing of local innovative and competitive brands, this research offers valuable insights to global luxury brands on staying competitive while preserving their premium brand image.

2. Literature review

2.1. Loyalty program vs price sensitivity

Whereas traditional economic theories assume customers as rational people who make decisions based on utility maximization, behavior economists challenge this idea by stating that review in real world settings, customers do not always respond to prices changes in a way that traditional economics would predict. Instead, their decisions are often times manipulated by cognitive biases created by seller's activities like promotions and loyalty programs.

Although programs like Starbucks Rewards are widely implemented by many retail industries nowadays, the joint effect of activities like loyalty programs remain in debate. Majority of the firms using this strategy believe that loyalty programs help increase customer retention rate by creating a mental connection with the company and feeling of reliance on product, making buyers less sensitive to minor price fluctuations [2]. However, opposing voice argues that constant loyalty programs and promotions would result in adverse effect, the customers will be trained to expect discounts on the products and thus increase their price sensitivity eventually in the long run. For example, Baker[3] came to the conclusion that negative consequences might arise when loyalty customers started to pay more attention on the monetary benefits they got rather than the brand itself, especially when they perceive unfairness between loyalty customers. Similarly, Gardner[4] also noticed that frequent discounts can undermine company's value in customer's minds by shifting their focus from quality to prices instead. In the case of Starbucks, we see far less promotions in terms of price concessions since they want to remain themselves in a premium position among the coffee market.

2.2. Research gap

Current studies on habitual consumption and pricing strategies have significant theoretical gaps, particularly in the premium ready-to-drink beverage sector:

2.2.1. Dynamic Anchoring's Impact on Long-Term Utility

Existing research Liu [5] and Zhou [6] has shown how fixed price anchors (e.g., the standard 35 RMB Frappuccino price) affect short-term purchase decisions. However, it fails to systematically explain how dynamic adjustments to price anchors reshape consumers' long-term utility perception.

2.2.2. The Paradox of Anchor Drift

Frequent discount strategies (e.g., "buy one, get one half-off") risk training consumers to treat promotional prices as new reference points, which reduces the perceived value of original prices. However, dominant pricing models (for example, Liu's 2023 cost-plus framework) cannot quantify how resetting price anchors erodes brand premium.

2.3. Research focus

Building on these gaps, this study investigates the core mechanisms of "habitual consumer behavior", specifically examining how price anchors reshape utility functions.

3. Analysis & results

3.1. Regression analysis (regression results see appendix A)

To investigate which variables have the greatest impact on customers' willingness to purchase Starbucks' Frappuccino products, we contacted a series of linear regressions with three distinct product design scenarios, in which the dependent variable is a binary indicator of 1 indicating will buy and 0 indicating will not.

The model we established is in the form of:

$$\begin{aligned} PurchaseDecision = & \beta_0 + \beta_1 \cdot (\text{Reward Member}) + \beta_2 \cdot (\text{Monthly Income}) + \beta_3 \cdot (\text{Visit Frequency}) \\ & + \beta_4 \cdot (\text{Price Affordability}) + \beta_5 \cdot (\text{Taste}) + \epsilon \end{aligned} \quad (1)$$

We hypothesized these independent variables based on our prior research and relevance to consumer behaviors. Rewards Member indicates whether the respondent is a member of Starbucks Rewards, it was selected to help us understand the controversial effect of loyalty programs from literature review. Monthly income was chosen since we suspect the higher income group might be more willing to purchase Starbucks as a premium product. Visit frequency explains how often a customer visits Starbucks stores and aims to discover if frequent visits make customers more likely to buy its drinks. Price perception reveals customers' attitude on Starbucks prices compared to competitors, we used this variable to reflect customers' price sensitivity. Taste asked respondents to express their feelings on whether Starbucks or other brands taste better.

The first product to test is designed as a medium size mocha Frappuccino priced at 35 CNY with no extra promotions. We ran the customers' decision on whether or not they'll buy it with variable including if they obtain a membership at Starbucks, their monthly income, their visit frequency to Starbucks stores, their opinions on Starbucks' taste compared to competitors and their opinions on whether Starbucks is priced at an affordable level compared to competitors. Among all the regression results on association with the decision, we found that at a 5% significance level, their opinion on whether Starbucks Frappuccino products are priced at a similar affordability level than competitors have the strongest negative relationship ($\beta = 0.375$, $p = 0.044$), suggesting in this scenario customers are perceiving for a product with better value from Starbucks if they believe the prices are similar to other brands. The second product that was put to test is designed as a large size Matcha Frappuccino priced at 42 CNY with loyalty points available. We conducted the linear regression with the same variables and got to the conclusion that at a 10% significance level, customers' opinions on the price affordability of Starbucks compared to competitors is again the most impactful item from the list. However, in this case, they have a positive association ($\beta = 0.32946$, $p = 0.0903$), indicating if customers

believe Starbucks' prices are similar to other brands, loyalty points could effectively convince them to choose Frappuccino.

Thirdly, we collected customers' decisions on whether they'll buy a small size special seasonal Frappuccino priced at 28 CNY with 10% off promotion. In this case, another variable among the list stands out, whether they are a member of Starbucks Rewards. At a 5% significance level, there appears to be a strong positive association with customers' purchase willingness and if they have membership ($\beta = 0.28985$, $p = 0.02787$), further validate our findings from the previous scenario where loyalty points are added, and this effect turns larger for special offer products.

In addition, we also pay attention to what are the factors with the least association with customer's willingness to purchase. Customers' statements about the taste are not statistically significant ($p > 0.1$), along with income and frequency, suggesting they played a minimum role in affecting customers' purchase intention.

3.2. Competitor analysis

We also conducted a comparative analysis about our customers' feelings on Starbucks' Frappuccino's price affordability, taste, frequency of promotion, and effectiveness of loyalty program, compared to other competitors, including Luckin Coffee, HeyTea, Nayuki Tea.

Table 1 shows the results of the percentage of responses on whether each component is better at Starbucks, similar or better at a competitor is shown above. We can see that more than half of the respondents agreed on Starbucks tastes better, indicating Starbucks obtain a key competitive advantage in tasting. While more than half of the responses do not believe Starbucks have a better price positioning and about 29.5% of them show sensitivity against Starbucks' premium prices. Upon the attribute of frequency of promotion, the opinions are spread-out evenly, indicating Starbucks has a considerably potential room of improvement here. In terms of Loyalty program, Starbucks out preformed their competitors significantly, obtaining more than half of the responses, this clearly align with and further emphasizes our findings from the regression models that Starbucks' Rewards membership program can effectively promote customers' willingness to buy. The insights we got from competitors analysis suggest that Starbucks had great performances in shaping the taste of their products and retaining their membership owners. However, from previous section, we found that taste itself is not a statistically significant attribute contributing to customers' decision on buying, therefore, Starbucks should improve more on the field of pricing and promotion.

Table 1. Competitor analysis results

Attribute	Starbucks Better (%)	Similar (%)	Better at Competitors (%)
Taste	55.738	31.148	13.115
Price	42.623	27.869	29.508
Promotion	32.787	34.426	32.787
Loyalty Program	52.459	27.869	19.672

3.3. Discussion

After analyzing insights, we obtained from regression models and competitor analysis, we have found the result that Starbucks' Frappuccino customers are sensitive to price of Starbucks in comparison to competitors', especially in the case of lack of promotions. If they perceive Frappuccino's price are similar to competitors' product, they'll deviate to other brands. However, after adding in promotions or rewards on loyalty points, customers' willingness to buy is strongly enhanced, showcasing the effectiveness of promotion and loyalty programs for Starbucks. Moreover, the membership owners are very likely to purchase special products from events like seasonal limited version of Frappuccino. Starbucks Reward members' active responses to the seasonal special offer perfectly align with Zikienė, Kyguolienė, and Kisieliuskas' research on innovative loyalty programs, which says innovative design of loyalty program strengthens behavioral and attitudinal loyalty between brand and customer [7]. While taste stands as one of Starbucks' most prominent competitive advantages against its competitors, the regression analysis reveals that it is not a

statistically significant factor influencing customers' purchasing decisions. This paradox suggests that although consumers acknowledge Starbucks' taste superiority, their actual buying behavior is predominantly driven by price sensitivity and promotional appeal. Consequently, high-end brands like Starbucks must strategically balance their quality positioning with pricing strategies to address the dominance of cost-related factors (e.g., price) over product attributes.

3.4. Recommendation

Base off the result we got from our analysis, we recommend Starbucks exploit its advantages on their loyalty program, publish more innovative Frappuccino products, alongside with the strengthening of strategic pricing and promotional advertising, which are two more critical factors than reinforcing taste.

4. Conclusion

4.1. Optimal pricing

Within our survey, we asked each respondent to provide a price where they found it will be a "good deal" and a price where everything above will be considered "too expensive" to purchase Frappuccino. After averaging all the responses, we got the mean for a good deal price at 30.92 CNY and a threshold before the product becomes too expensive at 38.10 CNY. Therefore, we determine that the acceptable price range for Starbucks' Frappuccino are between 31 to 38 CNY.

Base on the price range we obtained from our survey and the insights we got from the regression analysis, which highlights the importance of price affordability, promotions, and involvement of loyalty program, we recommend Starbucks prices a medium size Frappuccino beverage at 35 CNY. Locating around the 50th percentile within the acceptable price range on one hand hold Starbucks' market premium positioning; on the other hand, it leaves room for promotions and discounts for loyalty members to happen.

4.2. Feasible strategic pricing strategies

Given the findings from our regression and competitor analysis, Starbucks can implement the following pricing and promotional strategies to enhance their market performance

4.2.1. Dynamic pricing optimization

For non-member customers, introduce a "limited time original price + point reward" system to maintain a clear premium price anchor and avoid anchor drift [8]. For loyalty members, provide chances to "tiered discounts", such as 20% off after consuming 3 cups, to incentive repeat purchases and customer retention without affecting original price perception.

4.2.2. Innovative product pairing

Offer seasonal or limited-edition Frappuccino drinks with substantial amount of loyalty point rewards. These events will leverage members' loyalty to increase repurchase rate and avoid customers' brand fatigue due to repeated purchases.

4.2.3. Competitor Benchmarking promotion

Within its advertisements, Starbucks should effectively deliver the information that Frappuccino has a higher taste rating against competitors' drinks with similar prices [9]. Clearly showcase one of its key competitive advantages and justify for its premium prices. According to Kim and Chao, it is likely for customers to accept premium prices if brand images and delivered value are perceived to be trustworthy [10].

4.3. Limitations of the study

During the process of current data collecting and analysis, several limitations applied. Firstly, most of the data collected were from self-voluntary responded surveys, introducing potential response bias. Secondly, due to sample size constraints, the sample might not be a great representation of Chinese demographics.

4.4. Suggestion for future researches

There are a numerous amount of different ways of physical or digital promotion in current world including promotions by social media figures, physical posters, etc. Future research could deep into the analysis of how different kind of promotions influences consumers' price sensitivity and purchase incentives.

Moreover, future research could also put the price determination within different region of China and deep into what is the best regional pricing.

4.5. Suggested extensions to the model

To further improve the validity of the model, additional customer metrics can be incorporated like Customer Lifetime Value to better prove the model's long-term impacts. Also, conjoint analysis can be done with advanced behavior economics knowledge, seeking for the impacts done by psychological factors.

5. Acknowledgement

Weiham Luo, Huiyu Yang, Zixuan Zhang contributed equally to this work and should be considered co-first authors.

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Appendix

A Regression Results

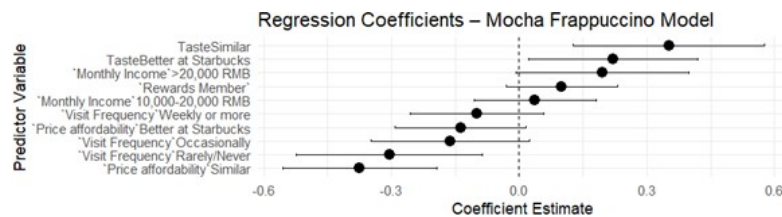


Figure 1: Plot for combination “Starbucks_Mocha_Medium_35CNY_NoPromo”

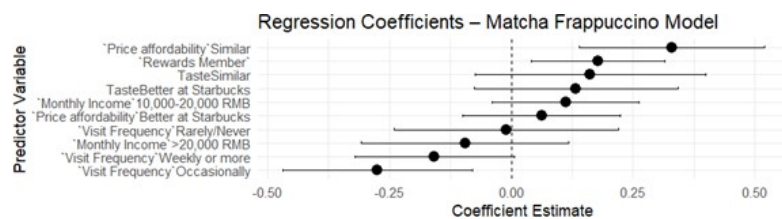


Figure 2: Plot for combination “Starbucks_Matcha_Large_42CNY_LoyaltyPoints”

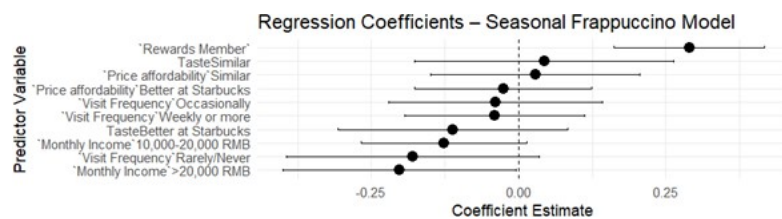


Figure 3: Plot for combination “Starbucks_Seasonal_Small_28CNY_10pctOff”

Table 2: Regression outputs for three starbucks frappuccino scenarios

	Mocha	Matcha	Seasonal
(Intercept)	0.634**	0.348	0.743**
	(0.223)	(0.234)	(0.218)
Rewards Member	0.100	0.178	0.290*
	(0.131)	(0.138)	(0.128)
Monthly Income>20,000 CNY	0.196	-0.095	-0.203
	(0.203)	(0.213)	(0.198)
Monthly Income10,000-20,000 CNY	0.038	0.111	-0.126
	(0.144)	(0.151)	(0.140)
Visit Frequency: Occasionally	-0.162	-0.275	-0.040
	(0.186)	(0.195)	(0.181)
Visit Frequency: Rarely/Never	-0.305	-0.010	-0.180
	(0.219)	(0.230)	(0.214)
Visit Frequency: Weekly or more	-0.099	-0.158	-0.041
	(0.156)	(0.164)	(0.152)
Price affordability: Better at Starbucks	-0.138	0.062	-0.026
	(0.154)	(0.162)	(0.150)
Price affordability: Similar	-0.375*	0.329+	0.028
	(0.182)	(0.191)	(0.177)
Taste: Better at Starbucks	0.221	0.133	-0.112
	(0.199)	(0.209)	(0.195)
Taste: Similar	0.352	0.162	0.043
	(0.225)	(0.237)	(0.220)
Num.Obs.	61	61	61
R2	0.168	0.186	0.153
R2 Adj.	0.002	0.023	-0.016
AIC	91.9	98.0	89.1
BIC	117.3	123.3	114.4
Log.Lik.	-33.974	-36.988	-32.544
F	1.012	1.142	0.906
RMSE	0.42	0.44	0.41

•p < 0.1, *p < 0.05, **p < 0.01, ***p < 0.001