Market Research Survey for Pricing of Craft Beer

Sample Survey Design - Marketing Group

MSDS402 Sec56

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Introduction

With a global shift in consumer values, young adults are growing to value quality over quantity, identity over mass production, and sustainability over convenience. Microbreweries cater to this global shift by differentiating on quality, variety, and uniqueness to deliver products that invoke joy and individuality (Lero et al. 2020). Studies have revealed that the craft beer consumer has an interest in quality and locally made products (Baiano 2021). Consumers are attracted to breweries that capture the essence of the community it was produced in. (Lero et al. 2020). Even label art matters. 59% of the typical craft beer consumer, middle-income young professionals in their 20s and 30s, will purchase more of a brand's beer after visiting their brewery (Baiano 2021). Microbreweries catering to these trends are able to price their products at a steep premium.

Research Question

Pricing strategy is a fundamental component of a company's marketing campaign. There are five common pricing strategies: cost-plus pricing, competitive pricing, value-based pricing, price skimming, and penetration pricing. As an early-stage startup craft brewery specializing in selling new and unique flavors of IPAs, our goal is to determine the best pricing strategy for our brand-new goods. We believe that value-based pricing would be the best pricing strategy for our new venture. We hypothesize that our new, never-seen-before flavors would give us a unique selling point, and our IPAs are better in quality compared to the competition. Therefore, our customers would perceive a higher value in our products compared to our competitors and would be willing to pay more to enjoy our goods and services. Thus, we can potentially price our IPAs higher than that of our competitors. This study seeks to answer the following research question:

What is the average dollar amount our target population is willing to spend on craft IPAs produced at our brewery in Boulder, Colorado?

Target Population

With limited local distribution channels and a go-to-market strategy targeting in-store sales of our locally produced IPAs, our target demographic consists of young professionals between the ages of 21 and 40 who live within a 50-mile radius of our brewery in Boulder, Colorado. Our target population either currently consumes craft beer or is open to consuming craft beer.

Sampling Design

To determine our product's perceived value, we will implement an incentivized survey to a randomly selected probabilistic sample from this demographic. We will use simple random sampling as our sampling method to promote that our sample is representative of our target market. Potential respondents will be selected from our sampling frame using a random number generator. The U.S. census will serve as our sampling frame, filtered for those between 21 and 40 years old with zip codes that fall within a 50-mile radius of Boulder, Colorado. We will gain access to census data by submitting a proposal to our local federal statistical research data center.

The primary goal of this research is to determine the average dollar amount our target population will be willing to pay for one craft IPA in our brewery in Boulder, CO. In other words, how many individuals must we sample to be 95% confident that our sample mean will be within $1 of the population mean? Using the below formula, we have determined a sample size of 45 participants. Mixed-mode research features an average response rate of 18.3% (Mauz et al. 2018), so we will sample and attempt to contact roughly 246 participants to meet our sample size goal. Sample size calculations for various margins of error can be found in Appendix Exhibit 2.

Sample statistic	Population size	Sample size
Mean	Known	$n = \{ z^2 * \sigma^2 * [N / (N - 1)] \} / \{ ME^2 + [z^2 * \sigma^2 / (N - 1)] \}$

For a 95% confidence interval with a two-tailed test, our z score will be 1.96. Our margin of error is $1 and we have estimated the population size to be roughly 31,000 people (determined in Exhibit 3). Research according to Bovie et al. 2017 showed a standard deviation in average craft beer prices of $3.41, or 44% relative to the mean craft beer price of $7.67. Another more formal study featuring a survey of 1,095 respondents found a standard deviation of $1.32 per beer, or 78% relative to the mean beer price of $1.69. Metrics from this study focusing on normal beer were not factored into our study concerned with pricing premium craft IPAs, but highlights the markup consumers are willing to pay for premium craft beers.

Survey Design and Methods

To promote a healthy response rate, the survey will be conducted either in the form of a web or phone survey. A text message will be sent to sampled respondents which provides our two options: a selection to be called for a live interview and a link to complete the web survey. If we do not generate close to 46 responses from our first round of texts, the second round of texts will be sent out to those that did not initially participate. The survey's objective is to determine the perceived value of our products relative to the competition and identify the price range consumers are willing to pay. An incentive structure in the form of a redeemable beer coupon will potentially encourage survey participation from our target market and increase tap-room foot traffic as an additional benefit. The survey will ask 3-5 questions about the individual's beer consumption habits to identify in-store consumers of craft IPAs, 5-7 questions identifying past consumers and comparing our value proposition to competitors, and finally 2-3 questions about

the pricing of similar products. The survey will be under 15 questions to increase the likelihood of engagement, and all response options will be finite.

Possible areas of error/bias

One possible area of bias is with our sampling method. Our sampling frame includes all residents ages 21-40 within a 50-mile radius of Boulder, Colorado, which assumes that all residents within that age range who are within close geographic proximity to Boulder are consumers of alcohol. This is not necessarily the case, as some residents might be sober due to religious reasons, recovering from alcoholism, being allergic or unable to digest alcohol, or simply just not enjoying alcohol. Research indicates roughly 40% of our target population are craft beer drinkers (Biano 2021). Baiano 2021 also revealed that 49% of males and 31% of females identify as craft beer drinkers. We assume that only respondents who either currently consume craft beer or are willing to try craft beer will opt into our survey given it will be incentivized with a craft beer coupon. Further, we are initially targeting in-brewery sales of our craft IPAs, which is often a couple's affair.

Data Preparation and Analysis

To promote complete and quality data, we will impute missing data for a given respondent with the mean response of the missing variable across all surveys. We are using this relatively simple method for imputation as we are doing a simple random sample, and assuming subgroups within our target population will be equally represented. Also, editing can be performed by computer software for our web-based software, reducing human coding error. We can implement a set of rules to audit and improve the quality of our data. For example, a response would be flagged if someone answered that they do not consume alcohol, but also consume 3-6 IPAs per week. More basic range edits/rules will be implemented to ensure

responses make general sense. For example, a respondent's age should fall somewhere between 21 and 120 years old. Finally, we would flag extremes in our data, such as a respondent stating they consume 200 IPAs per week at a brewery. Once data is cleaned, we will compute the mean, standard deviation, mode, range, and interquartile range of all questions that resulted in numeric values. Using the r programming language, we will infer a confidence interval for the mean dollar amount our target population is willing to pay for craft IPA from our sample mean at the 95% confidence level. We will also perform regression analysis across numeric answers to determine any potential predictors of the price a customer is willing to pay for craft IPA.

Contributions to Management

Using the findings from our research, we can determine an effective pricing strategy that correlates with the quality of our goods and services. Our data analysis findings will guide product decisions to ensure we invest in product attributes that consumers are willing to pay a premium for. For example, our survey analysis should reveal how product attributes like quality, taste, and sustainability influence a consumer's willingness to pay. Further, survey results will guide our production philosophy and batch size. If results reveal that consumers prefer limited production, unique IPAs, we will cater our production process accordingly. While the studies referenced earlier show consumers favor such factors, there are currently no published studies on consumers' willingness to pay for craft beer in our target market geography, Boulder CO. With data specific to Boulder, we strive to provide our potential local customers a fair but profitable price for our new craft beers and IPAs.

Appendix

Exhibit 1) Rough Draft Survey Questionnaire

Individual Beer Consumption Habit

1. What is the main deciding factor when you try a new beer flavor?
    a. Taste
    b. Price
    c. Other:_____
2. How often do you drink beer?
    a. Never/occasionally
    b. Once a week
    c. Several times a week
    d. Once a day
    e. Other: _____
3. What is your expected price range when purchasing a 16oz glass of craft beer from the tap?
    a. $5-$10
    b. $10-$15
    c. $15-20
4. What is your expected price range when purchasing a 6-pack of craft beer?
    a. $5-$10
    b. $10-$15
    c. $15-20
    d. $20+

5. What is the main deciding factor for you to purchase again?
    a. Taste
    b. Price
    c. Other: _____

Value Proposition

6. Have you purchased any of our products or been to our brewery before?
    a. Yes
    b. No*

*If the answer is b. Jump to Question #9.

7. Which product did you purchase? (Multi-select)
    a. Signature Craft 1
    b. Signature Craft 2
    c. Signature Craft 3
    d. Signature Craft 4
    e. Beer Flights
8. Are you happy with the price?
    a. Yes, the price is reasonable
    b. Slightly higher than I have expected
    c. I am willing to pay more
9. What other brands have you tried? (Multi-select)
    a. Brand A
    b. Brand B

c. Brand C

d. Brand D

e. Brand E

10. What is the reason if you choose our product over another brand?

a. Price

b. Taste

c. Packaging

d. It is the only thing on the shelf

e. Other: _____

11. What is your monthly budget for Craft Beer?

a. $5-$10

b. $10-$15

c. $15-20

d. $20+

Pricing Similar Product

12. Would you be willing to pay more for uniquely-flavored craft beer?

a. No, I only choose the lowest priced available option

b. Yes, I would pay $0.50 more for 6-pack

c. Yes, I would pay $1.00 more for 6-pack

d. Yes, I would pay $1.50 more for 6-pack

Thank you for your participation in this survey! Please use the following discount code for your next purchase on our website or show it to your server when you visit us in-store :).

Exhibit 2) Sample Size Calculation with various margins of error:

```
#needed sample size with margin of error (me) from $.25 to $1.25:

z = 1.96
sd = 3.41504
N = 31000


for me in np.arange(.25, 1.5, .25):
    n = round((z**2*sd**2*(N/(N-1)))/(me**2+(z**2*sd**2/(N-1))),0)
    print(f'margin of error: ${me}, sample size: {n:.0f}')
```

```
margin of error: $0.25, sample size: 701
margin of error: $0.5, sample size: 178
margin of error: $0.75, sample size: 79
margin of error: $1.0, sample size: 45
margin of error: $1.25, sample size: 29
```

Exhibit 3) Target Population Size Estimate

- The population of our target age demographic (21 - 40) residing in Boulder County, CO is estimated to be 78,118. This consists of 39,677 Males and 38,441 Females. (Suburbanstats.org)
- 49% of males and 31% of females surveyed identified as craft beer drinkers (Baiano 2021)
- 31,358 people in this demographic consume craft beers.

	Count	Craft Percent	Total
Male	39677	49%	19,442
Female	38441	31%	11,917
Total	78118	40%	**31,358**

References

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