

## UX Research

### Mini-Project 1: Product Diversification

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#### Proposal: Viability of market expansion/product diversification (for Coffee Shop X)<sup>1</sup>

**Objective:** Assess the profit potential of two expansions to Coffee Shop X

1. Extend operating hours from 6am-3pm to 6am-12am (+9hrs)
2. Expand the menu to include alcohol products for on-site consumption

#### We identify three key opportunities for increased profitability:

- (A) Sell more of our existing products (to current customer) by extending opening hours
- (B) Sell a new product (alcoholic beverages) to existing customers
- (C) Attract new customers (and a new market) by selling a new product (alcoholic beverages).

In order to predict the profit margins for each of (A)-(C) we need to find out : (a) whether there is a demand for the product or service, (b) the size of this demand (if any), and (c) whether the demand is currently being met locally.

#### We propose the following methods of assessment:

1. Survey of current customers (who will get \$1 off their coffee order as a small financial incentive, see appendix A) to collect the following information:
  - a. Demographic data: : age, occupation, income, and local geographical distribution
  - b. Loyalty: frequency of current purchases
  - c. Alcohol consumption patterns (frequency, preferences)
  - d. Self-reported interest in three service changes: extending opening hours until 7pm, extending opening hours until 12am, adding alcohol sales

We will use the results of this survey to assess opportunities (A) and (B), and combine them with information about current sales to project profits from (A) and (B).

2. Analyze local competition:<sup>2</sup>
  - a. *Local coffee shops:*  
Find the opening hours of coffee shops within 1.5 miles of our location (using the internet and/or on-the-ground survey). Compare these data with Google demand trends to figure out the typical demand for coffee and related products between 3pm and 7pm and 3pm and 12am.

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<sup>1</sup> We have elected to situate this project in a particular location, so that we can ground the actual and/or synthetic results of our research in a specific local context. The location selected was the Ohio State Campus in Columbus, OH, and we chose the location of an actual coffee shop (Stauf's) at 6th Ave and Neil Ave as our hypothetical location. This location was selected because it is off campus grounds (thus circumventing the issue of alcohol sales being prohibited on campus), but it is within a few blocks of campus buildings and does not require significant travel time/the use of ground transit from campus.

<sup>2</sup> We do not regard local restaurants (even those serving alcohol) as competitors in this potential market since the coffee shop is not currently considering expanding its services to include meal or substantial food preparation.

- b. *Local bars:*  
Create a list and count of local bars (within 1.5 miles of our location), and conduct an informal survey (using the internet or on-the-ground inspection) of their menus and price points. Conduct on-site surveys of some competitors to determine sales frequency and atmosphere.
- c. *Mixed-purpose establishments (if any):*  
Create a list of direct "[coffee bar](#)" competitors, if any within 1.5 miles. For any direct competitors, collect menu and pricing data, and conduct an informal on-site survey to determine sales frequencies and atmosphere.

We will use this information to assess the potential demand for (A), compare the existing market (offered by competitors) to our customers' stated preferences (B), and determine whether or not there is additional local demand for (C).

- 3. Use online sources (e.g., US Census data, Ohio State University enrollment and employment reports) to collect information on:
  - a. Population and demographic distribution (age, occupation, income) in the neighborhoods in and around our location
  - b. Drinking norms: percentages of adults who consume alcohol, consumption frequency and preferences, and any trends for on-premise consumption in the post-pandemic recovery.

This information will help us determine the size of a local market for (B) and (C). We will combine this data with the results of customer and competition surveys to assess whether local demand for (B) and (C) is being met, whether there is a potential market gap which Coffee Shop X could occupy, and whether this potential is likely to remain stable, increase, or decrease in the next few years.

## **Executive Summary**

### **Viability of Market Expansion/Product Diversification for Coffee Shop X**

**Problem:** Coffee Shop X seeks to assess the profit potential of two expansions: extending operating hours and introducing alcohol sales. The challenge lies in determining customer demand, market size, competition, and potential profitability of these expansions.

#### **Objectives:**

1. Assess the profit potential of extending operating hours until midnight.
2. Evaluate the feasibility of expanding the menu to include alcohol products for on-site consumption.

#### **Project Description:**

Through customer surveys, analysis of local competition, and demographic research, the project aims to determine demand, market size, and profitability for each expansion. Methods include surveys, competitor analysis, and demographic data collection.

#### **Value Added**

1. Additional daily profit of \$59.96 from extending hours until 7pm without alcohol.
2. Expanding the menu to include alcohol products, taking into account potential startup costs, and opening until midnight, projects a daily **loss** of \$15.43.

#### **Target Market:**

Primarily Ohio State University (OSU) affiliated individuals, including students, faculty, and staff, living in neighborhoods surrounding Coffee Shop X.

#### **Competition:**

Primary competitors include nearby coffee shops and bars, with Bada Bean Bada Booze, The Vic Village Tavern, and The Bottle Shop as relevant competitors due to proximity and offerings.

**Risk / Opportunity:** While extending operating hours presents a clear opportunity to increase revenue, introducing alcohol sales poses risks due to high startup costs, potential market saturation, and uncertainty surrounding liquor licensing.

#### **Conclusion:**

The research suggests that extending operating hours may yield profitable results, especially with a loyal customer base. However, introducing alcohol sales may not be financially viable in the short or medium term due to high startup costs and market dynamics. Further analysis is recommended before proceeding with either expansion.

**Recommendation:** extending opening hours until 7pm –and not selling alcohol– will result in higher profits. On the other hand, we recommend **against** staying open later than 7p and/or selling alcohol.

## **Appendix A- Survey – for \$1 off a coffee order**

*Introduction with informed consent and statement that all data collected will be anonymous*

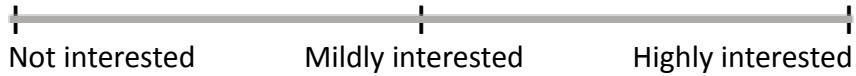
### **Questions about customers**

1. Are you over 21? (Y/N)
2. What is your occupation?
  - UG student at OSU
  - Graduate student at OSU
  - Staff at OSU
  - Professor (teaching staff) at OSU
  - Other (please specify)
3. What is your household income?
  - None
  - 10-30k
  - 30-50k
  - 50-70k
  - 70-90k
  - More than 90k
4. How often do you come to this coffee shop?
  - Every day
  - 3-4 times a week
  - 1-2 times a week
  - 1-2 times a month
  - Rarely
5. How often do you consume alcohol?
  - Every day
  - 3-4 times a week
  - 1-2 times a week
  - 1-2 times a month
  - Less than once a month
6. How far do you live from campus?
  - Less than a mile
  - 1-2 miles
  - 2-3 miles
  - 3-5 miles
  - More than 5 miles

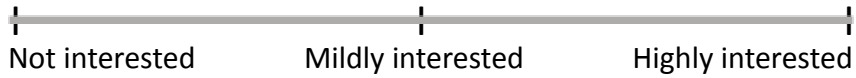
## Customer interest

7. Help us find ways in which we could improve our establishment by indicating whether you would be interested in the following changes:

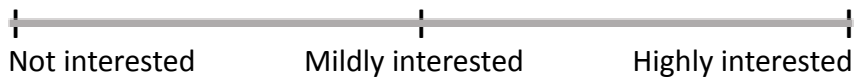
- Staying open until 7pm



- Staying open until midnight



- Start serving alcohol



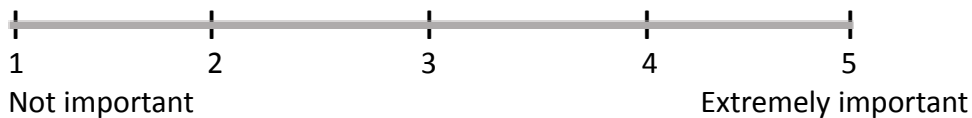
## Customer priorities

8. How important are to you the following factors when consuming alcohol? (1 being not important and 5 being extremely important)

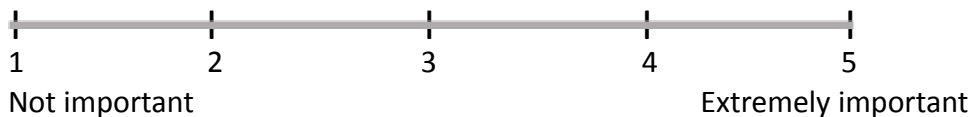
- Price of the alcoholic beverage



- Brand of the alcoholic beverage



- Quality of the alcoholic beverage



9. What alcoholic beverages do you like? Rank them in order of preference (1. Most liked)

- Beer (known brand on tap, can etc.)
- Craft beer
- Wine
- Liquors (shots)
- Well cocktails
- Specialty cocktails

10. When going out to a bar, which factors do you take into consideration and how important are they? Rank them in order of preference (1. Being most important).

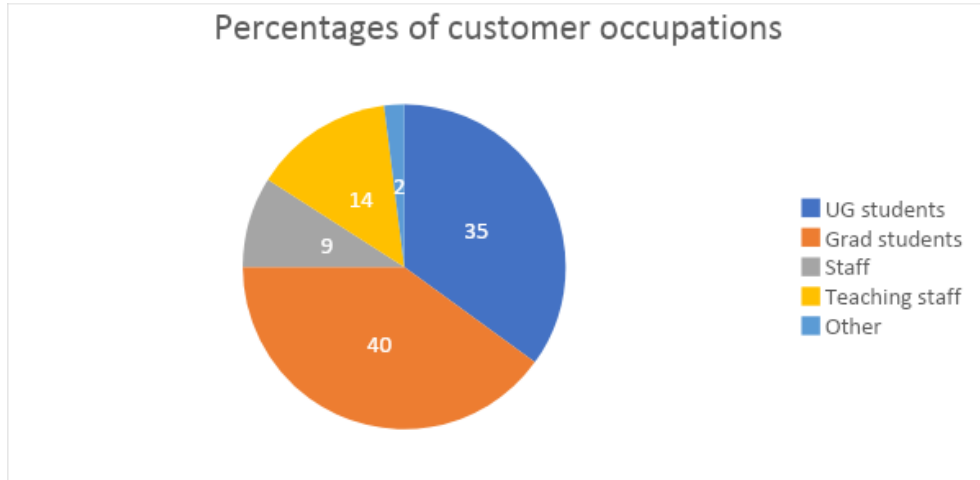
- Proximity to your location
- Price of the menu items
- Quality of the menu items
- Vibrant environment
- Uniqueness of specialty drinks

11. Do you have any feedback for us?

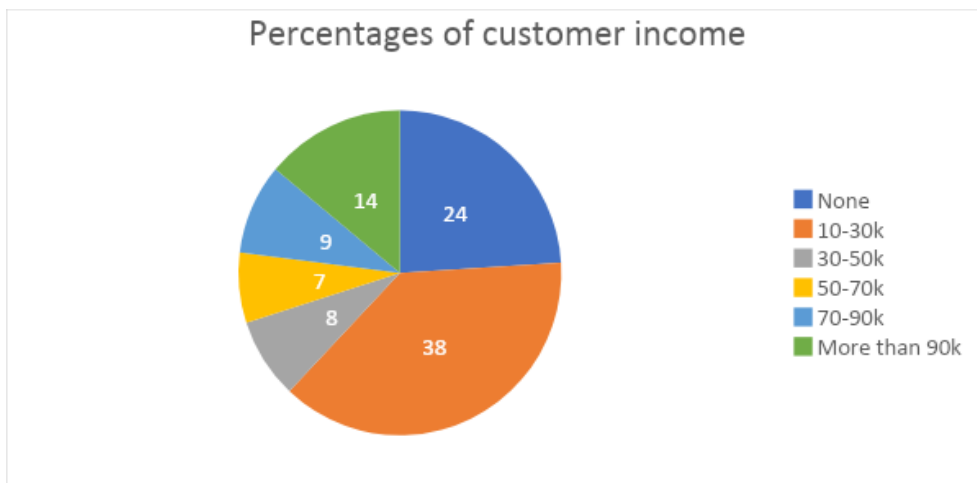
*Let us know your opinion*

**Appendix B: Results of customer survey**  
**Interviewed 200 people (cost \$200) - SYNTHETIC DATA**

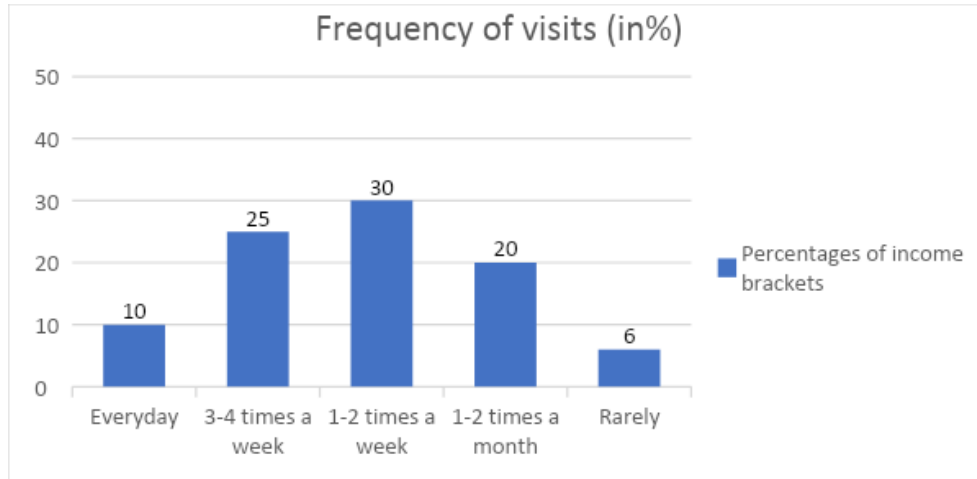
1. 70% of our customers are over 21, in line with the proportions of over 21 OSU population.
2. 98% of our customers are affiliated with OSU, with the majority of customers being students. The café is particularly popular among graduate students (although this might just be indicative of who was interested in responding to the survey).



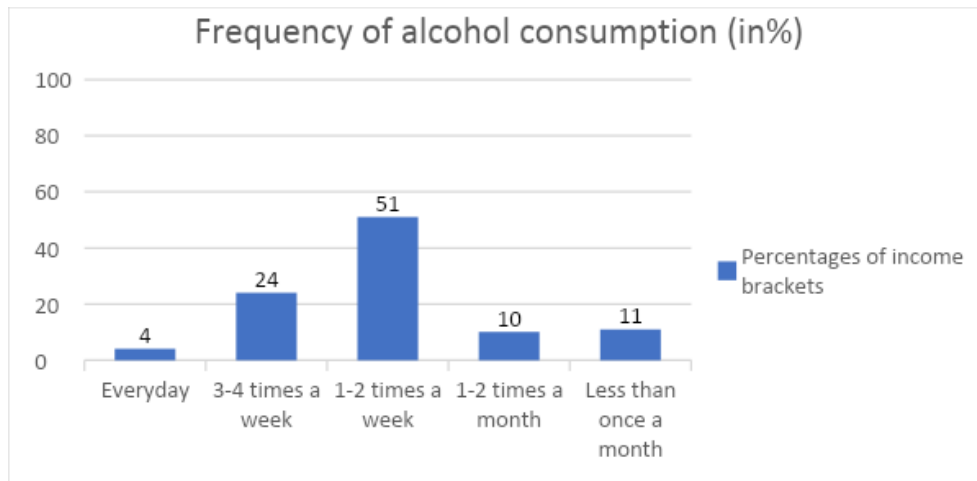
3. Results of income: The majority of our customers have limited annual income, with 24% having no income, and 38% having an annual income between 10k and 30k dollars. The potential spending power of our customer base is therefore somewhat reduced, which is something to take into consideration when deciding which new items to offer.



4. Frequency of coffee shop visits. Our customer base's visit frequency is normally distributed, with 65% of customers being regulars (i.e., at least once a week). It might be reasonable to assume that their loyalty for our coffee products might be transferred over to our nighttime offerings.

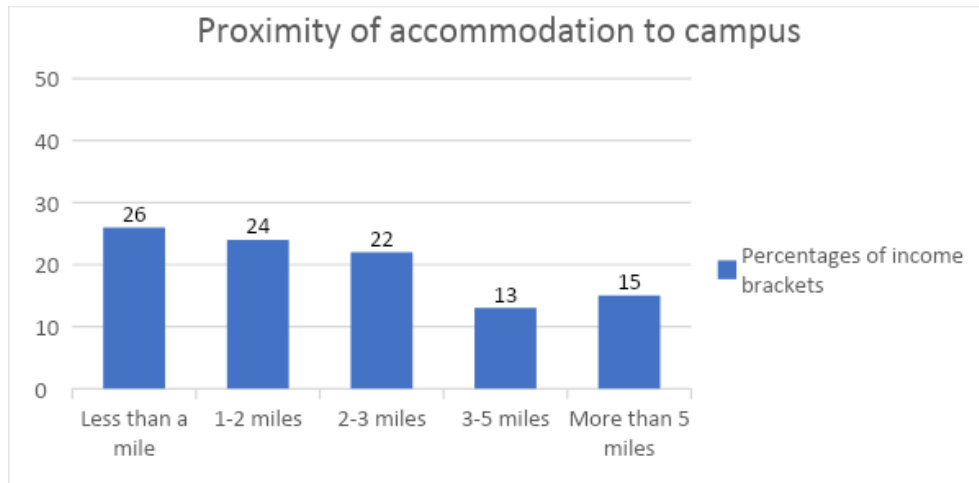


5. Sample is 70% of total survey responses (140), because minors were not asked this question. The data is also normally distributed, with most customers consuming alcohol 1-2 times per week (assuming more than one drink per day) and 3-4 times per week, in line with averages for Ohio alcohol consumption.



6. Most of our customers live close to campus. Most people living less than a mile away from campus are UG students (living on campus), while a good part of customers living between 1-3 miles from campus are graduate students. In comparison, staff and teaching staff tend to live a bit further out.





7. On a scale from 1 to 3, our customers expressed interest in the store staying open until 7 pm (2.2), until midnight (2.3), and in the store serving alcohol (2.6).
8. (Reduced sample, excluded minors) On a scale from 1 to 5, customers expressed that the price of an alcoholic beverage is important to them (4.2), with quality being in second place (3.6), and brand being last (2.7).
9. On average, beer and craft beer were the items ranked first and/o second 33% of the time. Wine was ranked first 31% of the time, while liquor (including shots 8%, specialty cocktails 5% and well cocktails 18%) were ranked first 36% of the time. These preferences are also reflected for second place.
10. On average, proximity to location and price were deemed the most important factors in choosing a bar, being ranked first 63% of the time. Quality of the menu items was ranked first 12% of the time, while environment was ranked first 18% of the time. Finally, uniqueness of the specialty drink was non deemed a very important factor in the selection of a bar, being ranked first only 7% of the time.

## Appendix C: Results of cost analysis

**Current daily profit:** (based on operating hours from 6am-3pm/9 hours) **\$167.65**

A. Daily revenue: <sup>3</sup>		\$724.50
a. 16oz drip coffee/espresso: \$3.50/unit	x 7/hr x 9hrs = \$220.50	
b. Cold brew: \$4.50/unit	x 3/hr x 9hrs = \$121.50	
c. Espresso drinks (e.g., latte): \$4.50/unit	x 5/hr x 9hrs = \$202.50	
d. Baked goods: \$4.00/unit	x 5/hr x 9hrs = \$180.00	
B. Operating costs:		\$556.85
a. Cost of goods sold (including disposable items, milk/alternatives, waste, theft): <sup>4</sup>		\$217.35
b. Utilities:		\$36.50
i. Electricity: \$450.00/mo	/ 30d = \$15.00	
ii. Natural gas: \$350.00/mo	/ 30d = \$11.67	
iii. Water: \$120.00/mo	/ 30d = \$4.00	
iv. Waste management: \$75.00/mo	/ 30d = \$2.50	
v. Internet (business): \$100.00/mo	/ 30d = \$3.33	
c. Employee costs:		\$297.00
i. Salary: \$11.00/hr	x 3/emp x 9hrs = \$297.00	
d. Other costs:		\$6.00
i. Maintenance and cleaning supplies: \$180.00/mo	/ 30d = \$6.00	

**Projected additional daily profit from extending hours until 7pm (+4) w/out alcohol: \$59.96**

A. Additional daily revenue: <sup>5</sup>		\$322
B. Operating costs:		\$262.04
a. Cost of goods sold:		\$96.60
b. Utilities (4 extra hours):		\$30.66
i. Electricity: \$200.00/mo <sup>6</sup>	/ 30d = \$6.66	
ii. Natural gas: \$155.55/mo	/ 30d = \$5.19	
iii. Water: \$53.33/mo	/ 30d = \$1.78	
iv. Waste management: \$0 additional		
v. Internet: \$0 additional		
c. Employee costs:		\$132.00
i. Salary: \$11.00/hr	x 3/hr x 4hrs = \$132.00	
d. Other: <sup>7</sup>		\$2.67
e. Customer survey: \$200 / 5 yrs	/ (365*5) =	\$0.11

<sup>3</sup> Assumptions: a simplified menu, which could be modified based on information from an actual client. 15 orders of coffee-based drinks/hour, 1/3 of purchases include a baked good.

<sup>4</sup> We assume a conservative flat rate of 30% of selling price, based on data from: <https://texascoffeeschool.com/managing-coffee-shop-costs-of-goods-sold-and-labor/>

<sup>5</sup> The results of analysis using Google to compare similar coffee shops which are open later (e.g., One Line Coffee in the nearby Short North neighborhood of Columbus) suggests that there is a sharp uptick in sales between 3 and 5pm, and a slight drop off after that until 7pm; we used this data to extrapolate an equivalent revenue during the additional opening hours.

<sup>6</sup> This is probably a slight overestimate since certain high-power electrical items are already running for 24hrs

<sup>7</sup> Assuming additional wear and tear on equipment from increased use for 4 hours.

**Projected additional daily profit from extending hours until 12pm (+9) w/out alcohol:** We did not find coffee-only locations open until midnight, and are extrapolating from this that sales from 7pm-midnight would be negligible. No need for calculations to support the recommendation of NOT opening the coffee shop w/o alcohol after 7pm, since it would only increase costs, but not revenue.

**Projected additional daily profit from incl. alcohol sales (all types), open until midnight:<sup>8</sup> \$-15.43**

<b>A. Additional daily revenue:</b>		<b>\$270.00</b>
a. Beer (can, local): \$4.00/unit	x 2 x 5hrs = \$40.00	
b. Beer (can, craft): \$6.00/unit	x 2 x 5hrs = \$60.00	
c. Wine (glass): \$9.00/unit	x 3 x 5hrs = \$135.00	
d. Cocktails (well): \$7.00/unit	x 1 x 5hrs = \$35.00	
<b>B. Additional costs:</b>		<b>\$285.43</b>
a. Cost of goods sold (incl. disposables, waste, theft) <sup>9</sup>		\$67.50
b. Utilities:		\$12.89
i. Electricity: <sup>10</sup> \$320.00/mo	/ 30d = \$10.67	
ii. Natural gas: \$0.00 additional		
iii. Water: \$66.67/mo	/ 30d = \$2.22	
iv. Waste management: \$0.00 additional		
v. Internet: \$0.00 additional		
c. Employee costs:		\$200.00
i. Bartending: <sup>11</sup> \$13.00 (additional)/hr/employee	x 2 x 5hrs = \$130.00	
ii. Security/id verification: \$14.00/hr	x 1 x 5hrs = \$70.00	
d. Other costs:		\$5.04
i. Liquor license: <sup>12</sup> \$940.00/yr	/ 365 = \$2.58	
D1 (Beer): \$376.00/yr		
D2 (Wine/mixed beverages): \$564.00/yr		
ii. New fridge: \$2800 / 5yrs	/ (365*5) = \$1.53	
iii. New glassware: \$339	/ (365*5) = \$0.93	
60 wine glasses: \$ 132		
60 beer glasses: \$ 132		
30 cocktail glasses: \$ 75		

<sup>8</sup> Based on the (synthetic) results of our customer survey, we assume that 55% of current customers would purchase alcoholic beverages in our shop: 70% of current customers are +21 and express an interest level of 2.6/3 in alcohol purchases. Based on an assessment of sales rates at local competitors (bars), we assume peak hours for alcohol sales are between 7pm and 11pm; assuming some sales take place between 5pm and 7pm, and some after midnight, we assume 5 hours of steady sales for opening hours; at a rate of 55% of regular sales we estimate 8 sales of alcoholic beverages per hour. We used information from customer preferences to estimate that this consists of 4 sales of beer, 3 sales of wine/glass, and 1 cocktail sale/hr.

<sup>9</sup> Assumed to be 25% of selling price.

<sup>10</sup> Assuming one additional refrigerator to store all beer cans and wine.

<sup>11</sup> We are assuming only 2 employees after 7p, who would work 7-12pm and have a bartending salary, with an increase of \$2/hr over the regular salary as baristas.

<sup>12</sup> A D1 license permits the sale of beer for on-premise consumption until 1am; a D2 license permits the sale of wine and mixed beverages (up to 21% ABV) for on-premise consumption until 1am. <https://com.ohio.gov/divisions-and-programs/liquor-control/new-permit-info/guides-and-resources/permit-class-types>

**Total (projected) monthly profits for:**

A. Current hours/services:	\$5029.50
<b>B. Current + extended hrs until 7p (w/out alcohol): \$5029.50 + \$1798.80 (new)</b>	<b>\$6828.30</b>
C. Extended hours (serving alcohol): \$6828.30 - \$462.90	\$6365.40

**Interim conclusions:**

Given the start-up costs associated with introducing alcohol sales (see above, and assuming that the cost of new equipment would be amortized over 5 years), the daily profit required to break even on alcohol sales is \$285.43, or an average of \$57.09/hr, assuming 5 hours of alcohol sales. Based on the results of our customer survey (compared to drinking norms/preferences in the wider community), we assume that 18% of these sales could be constituted by cocktails, 40% by wine, and 42% by beer (split evenly between the craft and local categories): this translates roughly to 1 cocktail/hr, 2.5 glasses of wine/hr, and 5 beers/hr, for a total of 8.5 drinks sold/hr. This is close to but slightly higher than our assumed rate of sales in the calculation above (56.67% of per unit sales of coffee during current opening hours), and meeting this goal would either require that the full fraction of customers who report an interest in alcohol sales choose us for alcohol purchases, or that we successfully attract new customers in addition to retaining some current customer loyalty. Given the saturation of the alcohol market in the area and the weakness of our brand in the context of alcohol sales, we do not anticipate that introducing this product will be profitable in the short or medium term.

Obtaining a liquor license may also incur hidden costs that are not figured into our calculations, making the proposal to introduce alcohol sales riskier than anticipated. Licenses are assigned by area/township in Ohio, with a finite number available in a given area. If the maximum number of licenses are currently assigned for our location, we will need to wait for a license to become available (i.e., for someone to close a local bar); obtaining that license requires paying the fees in advance and waiting for it to become available, which may not happen immediately. The other alternative is to purchase a license from a current holder directly, which can cost upwards of \$50K (in this scenario, the purchaser runs the risk of being held liable for any violations by the previous license holder). In the event that we are (a) paying fees for a license which does not become available for several years (so that the potential profitability of the opportunity is delayed relative to initial costs), or (b) obtaining a license in view of recent bar closures in the area (suggesting a decrease in demand for alcohol sales), the assumption that we will be able to fully offset our costs and/or attract new customers seems unfounded. Introducing alcohol sales appears to be a high-risk investment at this juncture.

## Appendix D: Results of Local Competition Analysis

### Local Coffee Shops

Our investigation shows that one establishment in particular poses as our greatest competitor, Bada Bean Bada Booze. All other coffee shops are more than 0.6mi away and do not offer alcoholic drinks of any kind on their menu.

- Bada Bean Bada Booze - This location is located 0.5mi west and appears to operate as a coffee shop during the day and a bar hosting weekly events in the evening. The coffee shop is open every day from 8am to 4pm. The bar is open from 4pm to 10pm Monday to Thursday and 4pm to 12am Friday and Saturday. Additional information on visits using Google suggests that the location conducts much of its business at around 9am and then experiences another rise in visits at around 9pm. Out of all the businesses that we found in our research, this one presents itself as our biggest competitor due to distance, type of business, and the fact that it is already an established location.

Below we give a tabular summary of other nearby coffee shops.

Name	Distance	Sample Operating Hours	Short Description
The Caffeine Element	0.6mi	7:30am-5pm	Sells coffee, sandwiches, and salads. Located on campus.
Shake No Eight	0.7mi	12pm-10pm	Offers coffee and milkshakes.
Tim Hortons	0.9mi	5am-10pm	Large chain offering coffee and various food items.
Starbucks	0.9mi	8am-8pm	Large chain offering coffee and various food items.
The Crimson Cup	0.9mi	6am-8pm	Small chain coffee shop offering its own brand of coffee grounds.
Starbucks	1.0mi	4:30am-12am	Large chain offering coffee and various food items.
The Roaming Goat	1.0mi	7am-6pm	Coffee shop offering its own brand of coffee grounds.
One Line	1.2mi	7am-7pm	Coffee shop offering its own brand of coffee grounds.
Winans Coffe and Chocolate	1.2mi	7am-9pm	Offers coffee and a selection of chocolates.

Table 2 - Other nearby coffee shops.

### Local Bars

Our investigation shows that there are two establishments that pose as our main competition with respect to the sale of alcohol: The Vic Village Tavern and The Bottle Shop. Beyond these two locations, we find that all other bars are at least 0.4mi away.

- The Vic Village Tavern - This bar is located 0.1mi south and offers a selection of drinks (beer, wine, and mixed drinks). The location hosts weekly events and features a typical bar/tavern look. Operating hours are from 4pm until 2am Monday through Friday, 12pm to 2am on Saturday, and 12pm to 1am on Sunday. Additional information on visits using Google suggests that the tavern conducts a significant portion of its business at around 9pm and later Thursday to Saturday.

- The Bottle Shop - This bar is located 0.1mi north and offers a selection of drinks (beer, wine, and mixed drinks), with a particular focus on wine. This location offers paid wine-related events almost every week and presents itself as a high-end location. Operating hours are from 4pm to 10pm Monday, 1pm to 10pm Tuesday to Thursday, 1pm to 12am Friday and Saturday, and is closed on Sunday. Additional information on visits using Google suggest the bar conducts a significant portion of its business from 6pm to 10pm Friday and Saturday.

Below we give a tabular summary of other nearby bars.

Name	Distance	Sample Operating Hours	Short Description
Junior's Bar and Grill	0.2mi	11am-12am	Mexican food and drinks (drink menu could not be found).
Zeno's	0.4mi	2pm-2:30am	Offers food and local and standard beers (no wine or hard liquor).
Beir Stube	0.6mi	3pm-2:30am	Irish bar with limited food items (drink menu could not be found).
Village Idiot	0.6mi	5pm-2:30am	Standard dive bar (limited beer and mixed drinks found online).
Eupouria Bar and Patio	0.7mi	4pm-12am	Offers domestic and imported beers along with mixed drinks.
Oddfellows Liquor Bar	0.8mi	4pm-2:30am	Standard bar that hosts events (drink menu could not be found).
Local Bar Short North	0.9mi	4pm-2:30am	Offers beer and liquor (drink menu could not be found).
Black Brick	1.0mi	5pm-1am	Offers local craft beers and mixed drinks.
Arch City Tavern	1.0mi	11am-1am	Limited food items. Offers beer, wine, and mixed drinks.

Table 1 - Other nearby bars.

## Appendix E: Demographic data and drinking norms

Population of the Columbus metro area (excluding unincorporated areas): <sup>13</sup>	907,971
• 18-65: 67.2% of total	610,156
• 21-65: estimated at 93% of 18-65 <sup>14</sup> (62.5% of total)	567,445
Population in neighborhoods in and around the Ohio State University: <sup>15</sup>	77,710
• Assuming age breakdown comparable to Columbus overall:	48,568
Ohio State affiliated persons: <sup>16</sup>	
• Students	60,046
○ Undergraduate: 76.1%	45,728
○ Percentage of UG students 21 or older: <sup>17</sup> 33%	15,090
○ Graduate: 18.5%	11,093
○ Other (professional): 5.4%	3,225
• Employees: headcount of 53,280, of which 15,596 are students	37,684
• <b>Total relevant population:</b>	<b>67,092</b>

### Population calculations:

• Percentage of undergraduates 21 or older living off campus OSU : 65% <sup>18</sup>	9808
• Percentage of graduates living off campus: 93.1%	10328
• Percentage of employees living in nearby neighborhoods: 65%	24495
• <b>Total of OSU persons counted in local population:</b>	<b>44631</b>
• <b>Total relevant persons:</b> 48568 + 67092 - 44631	71839

### American drinking norms:<sup>19</sup>

• Percentage of drinkers:	
○ 65% of 21+ adults	
○ 76% of college graduates	
○ 70% of 21-29	
○ 70% of 30-49	
○ 64% of 50-64	
○ <b>Estimate for local population: 70%</b>	

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<sup>13</sup> (<https://www.census.gov/quickfacts/fact/table/columbuscityohio/PST045223>)

<sup>14</sup> Assuming a roughly even distribution.

<sup>15</sup> U.S. census data reported by statisticalatlas.com; neighborhoods of interest identified as OSU, North campus, Old North, Clintonville, Indianola Forest, Necko, Weinland Park, Milo-Grogan, Italian Village, Victorian Village, Dennison Place, Harrison West, Tri-Village, Grandview (unincorporated), German Village (geographically farther, but a residence area for OSU employees)

<sup>16</sup> data from [irp.osu.edu/home/statistical-summary](http://irp.osu.edu/home/statistical-summary) and from the Autumn 2023 enrollment report at sem.osu.edu)

<sup>17</sup> Autumn enrollment reports 7983 incoming freshman in 2023, and 11,206 BA degrees awarded in 2022. Assuming an even distribution between four years of college averages 11432/year; the distribution evidently skews higher on the senior end; we adopt 33% as 21 or older as a very conservative estimate.

<sup>18</sup> We base this on the requirement for students to live on campus during their first two years (50%), and revise it upwards based on data showing that the class sizes are larger for upperclassmen.

<sup>19</sup> [news.gallup.com/poll/509690](https://news.gallup.com/poll/509690)

- Number of drinks/week among drinkers: 4<sup>20</sup>
- Preferences: 35% of drinkers prefer beer, 31% prefer wine, 30% prefer liquor
- Overall trends: on-premise consumption of alcohol was approximately 35% of consumption pre-pandemic, but dropped to 23% in 2020. It has since risen to 28% in 2021 and 29% in 2022; we assume that it will remain steady or increase slightly over the next five years.

**Calculations:**

- Assuming that 70% of the target population of 72,483 consumes alcohol, we have a target population of 50,738
- Average rate of 4 drinks/week: 202952 drinks
- 29% of total drinks consumed on-premise: 58856 drinks/week
- Drinks/day = 8408, of which 2943 (35%) beer, 2606.48 (31%) wine, 2859 (34%) other.

**Estimate of market saturation:**

- Daily operation costs of a hypothetical bar: \$621.84
  - Average cost of a liquor license in Columbus: \$1220/yr<sup>21</sup> \$3.34/day
  - Average employee costs/week: \$4032<sup>22</sup> \$576/day
  - Other costs (utilities, maintenance):<sup>23</sup> \$42.50/day
- Required sales to offset operational costs: 75.3 units/day  
 $621.84 = (.35*6x + .31*10x + .34*9x)^{24}$
- Saturation point of local market: 111 bars  
 (Estimated total drinks per day divided by the break-even cost of average bar)

**Interim conclusion:**

While we were not able to obtain a precise count of the number of bars in the population areas included in our calculation, the total number of bars/breweries in Columbus is 658 (via rentechdigital.com). To meet the projected demand in the target geographical area (assuming only enough sales to break even), we project the need for 111 bars, or 16.9% of the total. The region considered includes the central and entertainment neighborhoods of German Village, the Short North, Old North and Grandview, which have a higher concentration of bars than many Columbus neighborhoods; the total geographical area considered is greater than 16.8% of the land area of Columbus. We therefore project that 111 bars is a conservative estimate of coverage in the area, and thus that it is more than likely that the current demand for on-premise alcohol consumption is being met.

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<sup>20</sup> We suspect this is a low estimate for the local population, but use the figure since it aligns with the results of our customer survey (and thus our likely clientele).

<sup>21</sup> Assuming an equal distribution of D1, D1+D2, and D5 licenses

<sup>22</sup> Assuming an equal distribution of bars selling between 4pm-12am and 4pm-2am for a weekly average of 63 hrs; assuming 4 employees (3 bartenders + 1 security) at the average bartending salary in Columbus of \$16.00/hr

<sup>23</sup> Using our own operational costs as a conservative estimate

<sup>24</sup> Assuming 35% sales of beer at \$6/unit, 31% sales of wine at \$10/unit, 34% other at \$9/unit