

ESTIMATED SALES AND INVESTMENT COSTS TO PRODUCE AND RETAIL GELATO IN THE
PETALUMA AREA

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Abstract

Recent events in the California dairy have left many dairy producers with high feed costs, low profits, and low (sometimes negative) margins. Some producers have transitioned to producing value-added or artisanal dairy products to help increase the revenues earned from farm milk, particularly in Sonoma County. Because limited research exists on the business opportunities in response to a rapidly growing market for value-added products, this project explores the feasibility of starting a gelato production and retail business in the Petaluma area. To assess business feasibility, a consumer survey was created to estimate the percent of residents and non-residents who would have an interest in purchasing locally-produced gelato, as one component of estimating potential retail sales. The initial investment and operating costs associated with starting a gelato scoop shop in Petaluma were also estimated using secondary data from retail space lessors and equipment suppliers and previous studies of value-added dairy operations.

Many survey respondents have interest in purchasing a gelato product; 66% and 64% of residents and non-residents expressed at least a moderate interest, respectively. Based on this interest and their stated frequency of visits to other scoop shops, estimated monthly sales for a retail gelato shop ranged from 6,454 to 21,299 scoops. At an assumed \$3.50/scoop based on stated consumer willingness to pay, this could generate estimated annual revenues between \$271,068 and \$894,558. Based on the estimated sales volumes, the variable cost per unit sold would be \$0.20, which would result in a gross margin of \$3.30 per unit sold. The estimated annual income over key operating expenses of ingredient costs per batch, packaging and materials, monthly rent, utility, repair and maintenance, and labor expenses could generate between \$229,178 and \$484,796, depending on the amount of units sold per visit. Thus, a gelato scoop shop could be a feasible and profitable business in the Petaluma area, and further detailed study and development of a business plan appears justified. The values for demand and operating expenses listed in this project are initial estimates and a refined analysis is appropriate as a part of a more comprehensive business plan.

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Chapter 1

INTRODUCTION

Background of Study

Sonoma County is a rural region forty-five minutes north of San Francisco that borders the Pacific Ocean to the west and Napa County to the east. It includes nine incorporated cities: Cloverdale, Cotati, Healdsburg, Petaluma, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, and Windsor. It is best known for its historic downtowns, rolling hills, friendly atmosphere, mild weather and illustrious wineries, making it a prime location for tourism and residence.

Sonoma County has also been recognized for its rich agricultural history. For example, Petaluma is a river city that used to be known as the “Egg Capital of the World,” because of its sizeable grain milling and chicken processing industries. It was also home to a large number of multi-generational family-owned dairies, which supplied milk to Sonoma-Marin markets as well as San Francisco. However, as populations increased over time, much agricultural land was urbanized and dairies pushed out. Even though Petaluma maintains a strong agricultural base today, its farm numbers have diminished over the past 40 years (Digitale, 2009).

Since 1993, California has been the leading U.S. producer of milk, butter, ice cream, yogurt, nonfat dry milk, and whey protein concentrate. However, the recent events in dairy markets have left many dairy producers with high feed costs, low profits, and low (sometimes negative) margins. The industry has experienced large fluctuations in milk and product prices, leaving both producers and processors nervous about future prices and cash flow. Smaller dairy farms (with less than 500 cows) predominate in Petaluma, and have struggled to earn what they consider a reasonable income. This has led some farms to consider changes to their business model. For example, a number of conventional farmers have transitioned to producing organic milk, because the organic milk price is higher, and the

market is growing. This made it a financially feasible strategy for Sonoma County dairies due to available resources like pastureland, and the limited ability to adopt the production model used by larger dairies in the Central Valley.

Another strategy that has been implemented by some individual producers is making artisanal dairy products, which can increase the revenues earned from farm milk. This business model can benefit from promoting each farm-owning family's unique culture and that of the Sonoma County area. Residents of Petaluma, as well as the surrounding counties of Napa, Marin, and San Francisco have become consumers of locally made and (or) grown foods, as one component of wanting to know more about where their food comes from and have a closer connection with the producer. These consumers often focus on buying artisanal style foods or organic products. In response to this growing demand, Petaluma has become an outlet for a variety of locally produced food products, which are referred to by various names, including "slow-made," "farmstead," or "hand-crafted," with an emphasis on using locally-made products and batch-style production methods, hoping to stand out from larger-scale commercial producers.

There are currently 27 artisanal cheese-makers within Marin and Sonoma County (Fletcher, 2011). Other value-added products consist of European style butter, yogurt, and ice cream, made with milk supplied from sheep, goats, and even buffalo. According to Santa Rosa's Press Democrat (Stevens, 2007), these artisanal cheese makers saw double-digit growth in 2007, as a surge in demand allowed processors to expand production. Although it is the case the producers can generate more revenues in growing markets, it is also the case that they have higher costs and more management challenges when it comes to producing a value-added product. Production equipment can add substantial debt to a dairy business, not to mention associated costs generated from labor, distribution, supplies, materials, and utilities. In general, creating a successful and profitable value-added business involves great risk and can be difficult to achieve, but not impossible (Streeter and Bills, 2003).

Petaluma's artisanal market has grown rapidly, with new value-added businesses entering every year. This expansion raises questions of concern for the farmers or other entrepreneurs who have expanded to a value-added dairy operation and whether greater revenues offset higher costs. Very little research exists about the feasibility of this approach, that is, to more fully evaluate if it is a successful business strategy. One business model for value-added dairy would be a scoop shop selling "artisanal" frozen dairy desserts from milk produced by its own cows. Value-added products in Petaluma consist mainly of aged cheese products, but very few businesses venture outside of that category. Because there are already other "artisanal" or organic ice cream producers in the area, a business that produces and sells gelato may have greater success than competing with the current ice cream shops. As for other artisanal dairy products, the financial feasibility of a gelato scoop shop in the Petaluma area has not been carefully evaluated.

Problem Statement

What are the start-up and likely operating costs for a scoop shop in Petaluma selling gelato made from locally-produced milk? What percent of Petaluma consumers would have an interest in purchasing gelato, and what prices might they be willing to pay?

Hypotheses

A feasible business model for a small-scale gelato scoop shop would have an estimated start-up cost between \$200,000 and \$300,000. Operating costs are anticipated to be between \$75 to \$150 per hundredweight of milk processed into ice cream. More than half of potential target consumers in the Petaluma area would have an interest in purchasing a gelato product if priced between \$2.50/3oz and \$4.50/5oz cup, and this would be sufficient demand to support the business venture.

Objectives

1. To estimate the start-up and operating costs for a gelato scoop shop in Petaluma
2. To evaluate consumer interest in purchasing locally-produced gelato in the Petaluma area

Significance of the Study

More than 100 California dairies closed last year, leaving about 1,650 in operation. In the North Bay, Marin County reported a 13 percent decrease and Sonoma County a drop of almost 6 percent in dairy farm numbers (Digitale, 2010). Although many of these dairies likely closed due to retirement of their owners rather than financial stress, management of farm and processing businesses in the dairy industry has become more challenging in the past two decades. A half a century ago, there were 400 dairies within Petaluma and Marin counties, and today that number has been reduced to roughly 100. As more dairy farms consider value-added processing as an option to avoid exiting the industry, understanding the initial risks are crucial for such a fragile business, where poor choices can lead to a permanent exit.

As very little research exists on the feasibility of starting a small-scale processing operation in Petaluma, this study will provide an important benchmark for future entrepreneurs considering this idea. It will help to understand a rapidly growing market for value-added products and define start-up and operating costs for value-added production. This study can also provide key market information to local industry officials seeking data of ice cream consumption in Petaluma in order to refine marketing strategies, assist in product development, or expand product lines.

Chapter 2

REVIEW OF THE LITURATURE

Because there is limited information available about the financial feasibility of starting a gelato scoop shop in the Petaluma area, this chapter outlines the background useful to developing this information. One such factor discussed is the uniqueness of gelato and why it could make for a successful business venture. This chapter also outlines relevant features of the dairy industry and explains the current economic circumstances that led to the idea of a gelato scoop shop, as well as discussing the financial performance of other types of value-added dairy operations for which there is information to analyze. Similar studies have been conducted on value-added dairy enterprises, looking specifically at the financial performance of small-scale dairy processing businesses that produce either cheese, yogurt, or ice cream products using either cow, goat, or sheep milk. These are referenced in the chapter and the data were used to evaluate the success of the business model.

A Changing Dairy Industry

Over the past eight years, the U.S. dairy industry has undergone dramatic changes in herd size, milk production, and the number of dairies still in business. The industry saw a 33 percent decrease in the number of cow dairy operations, even though the number of large operations, those with 500 cows or more, have increased (NASS, 2010). Over this eight-year period, average annual milk prices in the U.S. fluctuated between \$12.18 and \$19.21 per hundredweight (cwt), with even larger variation in monthly prices. At the same time, national feed prices for corn and alfalfa hay reached record highs as corn prices increased by 110% and alfalfa prices more than doubled from 2005 to 2008 (NASS, 2010). Even with the rather limited help of price support programs and government income support programs (the Milk Income Loss Contract program), this volatility resulted in large loss of farmer equity during 2008 to 2010 and raised concerns about the future. Owners of larger dairies have considered various strategies to address this, including increasing risk management activities, changing herd size, producing their own feed,

relocating to other states, or either temporary or permanent exit from the industry. Smaller dairies, with limited land, resources, and funds generally have to consider other approaches to address highly variable and sometimes low financial returns. As noted in the introduction, one of the basic approaches is “adding value” to milk. This can be accomplished through conversion to organic production or adding a small-scale (often, on-farm) processing enterprise.

Gelato: A Unique Dairy Product

Entrepreneurs contemplating a value-added business venture should focus on supplying a unique product that would be new to consumers of this specific market. The uniqueness of the product is what will attract customers to the new business (Anderson, 2009). As mentioned earlier, Petaluma’s markets have seen a range of artisanal products such as European-style butter, yogurt, and ice cream; using milk from cows, sheep, goats, or a combination of. Because many of Petaluma’s consumers have a unique taste for original and “slow-made” foods, one product not currently offered by local producers is artisan gelato. Powell’s Sweet Shop would be one direct competitor, however the gelato is shipped in from an out-of-state supplier and not made daily.

Production Practices

Gelato is a popular Italian frozen dessert, whose consumption has increased in the U.S. due to its lower fat content and full flavor. Most U.S. consumers think of gelato as the Italian version of ice cream, or that gelato is the equivalent to American ice cream. Similar to ice cream, gelato is a frozen dairy dessert that is consumed either in a cup or cone. However, there are significant differences between gelato and ice cream, (as those that have tasted authentic gelato will instantly point those out). Gelato is a light, flavorful product that is made without the addition of stabilizers, emulsifiers, and overrun (air). It contains less milkfat (cream) than regular ice cream, around 8% or less. Ice cream has an FDA Standard of Identity requiring a minimum of 10% milkfat, to be labeled as such, and premium ice creams can contain up to 16% milkfat (Marshall, Goff and Hartel, 2003). Another obvious difference is that gelato is served at a semi-soft state. It is stored at a warmer temperature of 13°F compared to ice cream, which is blast frozen

at -23°F and then stored at this temperature to be consumed at a later date (Marshall, Goff and Hartel, 2003). Lastly, ice cream is initially frozen using a combination of whipping the mix at a high speed to incorporate a certain percentage of air (overrun) while freezing the mixture to a semi-soft state. In industrial ice cream production, overrun levels can reach between 80-100%, making the ice cream light and fluffy. Gelato, on the other hand, has a very low amount of overrun at about 0-10%, which gives the frozen dessert a denser consistency.

Gelato is made using a batch-style production, where each individual flavor is made daily in small (5-liter) batches and sold directly to the consumer. It is more typically sold in small scoop shops, *gelaterias*, and the Italian word for ice cream parlor. Traditionally, gelato flavors are inspired by seasonal fruits, as producers prefer to use fresh ingredients to enhance the overall quality of the frozen dessert.

Sensory Characteristics

A sensory analysis was conducted by Thompson *et al.* (2009) to measure the consumer desirability for super premium ice creams. This study focused on Italian-made gelato and compared it to American-made super premium ice cream, ice creams of 12% milkfat or higher. The study assessed the sensory characteristics of these two products to measure the consumer desirability of each. More specifically, the study sought to define the high-quality characteristics found in gelato to help develop new ice cream flavors in the U.S. or increase product quality of American super premium ice cream. A trained panel evaluated each sample and found that gelato was characterized as “true to type,” meaning flavors were generally more intense and considered typical of the additive being represented. In other words, strawberry-flavored gelato would taste comparable to eating a fresh strawberry. With American ice creams, these flavors tend to be weakened by the high amounts of milkfat, overrun, lower quality ingredients, and imitation flavorings used. Texturally, gelato has a smooth, dense texture that allows for the development of body and “bloom” of flavor, resulting in an enhanced flavor. During sensory analysis, food or beverage samples are tested at a warmer temperature than they are normally consumed, as colder temperatures tend to hide flavor defects of a product. Because gelato is served at a warmer temperature,

its flavors tend to be more intense, resulting in the perceived freshness of the product. Because it is so flavor intensive, gelato will only hold its peak flavor for several days and is best sold fresh.

Health Benefits

As mentioned above, gelato traditionally has a milkfat content of 8% or less, making it a healthier dessert choice than ice cream. American-made gelato tends to be produced at a higher milkfat level to achieve the creaminess and richness consumers associate with Italian gelatos. Traditionally the creaminess of gelato is created from the absence of high amounts of overrun, allowing it to freeze to a denser consistency and allowing a product with 8% milkfat appear creamier, but low in fat. Two factors that alter flavor in ice cream production are overrun and temperature. Extracts and flavorings are added in higher concentrations to the ice cream mix to adjust for partial flavor lost during the freezing stages. The extra air pockets incorporated into the ice cream matrix dulls the flavor when tasted, as this percentage is greater than the concentration of extracts used. Milkfat level also plays a role in depressing flavor as the milkfat generally coats the tongue when consuming ice cream. Therefore the richness of the ice cream is perceived first and the flavor second. This is why gelato has an enhanced flavor and is preferred over premium ice creams. Desired amounts of milkfat and sugar used in a gelato formulation can be quite less than the target amounts found in ice cream or American-made gelato. However, the mix formulation will vary between gelato makers, as each can use a different combination of ingredients and milkfat levels to create their ideal gelato product.

Value-Added Products

Value-added can be defined as the further processing of a raw commodity or product to add value. It can then be sold at a higher price to capture a larger share of consumers' dollar, generating additional revenue for the seller. Streeter and Bills (2003) sought to clarify what they regarded as misconceptions about the nature of value-added products and its appropriateness as a business strategy. They concluded that the term "value-added" has been used too broadly and doesn't accurately reflect the activities necessary to add value to a product. Further, they stressed that new management skills and

additional assets required can cause challenges to a start-up operation. Farm businesses considering such a transition should recognize that for value-added production, management skills would encompass production, distribution, marketing, and sales activities. These extra elements can be an additional stress to a farmer who is already consumed by the daily activities required from managing a dairy. One solution would be to have separate managers for the farm and processing operations to help relieve the pressure of running two businesses. For the proposed business venture of a gelato scoop shop this would be the recommended business strategy of transitioning to a value-added enterprise. Additional resource (asset) requirements can also be a challenge for starting a processing plant. To implement successful value-added strategies, entrepreneurs need to understand how these factors affect a business and how to best to address them.

One development facilitating the growth of value-added is an increasing number of farmers' markets. Farmers' markets are a popular outlet for farmstead producers to help generate initial income as well as introduce new products to a community. They allow producers to sell directly to consumers, which typically result in higher prices than selling to wholesalers or distributors. Producers then, could achieve greater profit margins and develop a loyal consumer base with less competition from larger, commercial producers. Nonetheless, most value-added producers sell about 75% of their production through wholesale outlets instead of direct market channels (Nicholson and Stephenson, 2006).

Northern California milk producers see farmers' markets as a retail outlet for artisan cheeses, fluid milk, ice cream, and butter. These markets are more accepting of value-added products and consist of consumers who are willing to pay a premium price for these goods (Govindasamy, *et al.*, 2004). The study focused on consumers who purchase value-added products at local Farmers' markets to provide an overview of their attitudes, preferences, and characteristics in relation to purchasing habits. It found that a relationship exists between discretionary income and the likelihood of purchasing value-added products, such as the ones sold at farmers' markets. It is suggested that producers would have a greater success rate

by introducing new products in areas with a higher average household income (Govindasamy, *et al.*, 2004).

Gelato, although not unknown in the U.S. market, would be a new product to most of Petaluma's consumers and with proper storage equipment, could be distributed at farmers' markets. Given its characteristics, gelato should match well with the unique tastes of Petaluma consumers, as well as the tourist population by catering to their interest of "slow-made" and "artisanal" foods, particularly if this product were made using traditional methods, such as the ones found in Italian *gelaterias*. A gelato scoop shop would be one way to take a common ingredient such as milk from a local dairy and create a high-value premium product. This market expansion would give consumers a greater product variety, as artisanal ice cream makes up a small portion of the value-added market.

Farmers' market consumers tend to have a greater disposable income; their willingness to pay higher prices for premium products makes them an attractive market for value-added and artisanal products. Moreover, farmers' markets in Petaluma are becoming a new tourist attraction for residents of Marin, Napa, and San Francisco's residents as Petaluma is situated between Napa's wine country and the coastal towns of Point Reyes and Tomales Bay. Its location makes for a quick day trip for residents looking to escape the city. Marin and San Francisco have an average household income of \$73,500, which is greater than the state average of \$60,000 (Census Bureau, 2010). Thus, consumers from the Marin and San Francisco area have a higher disposable income and enjoy purchasing artisan cheeses at local farmers' markets. Because gelato is a relatively simple product to make, it could generate a reasonable profit margin as long as business owners manage monthly ingredient costs and expenses. Nonetheless, when making a value-added product extra costs can be incurred from the use of high-quality ingredients and extra labor.

On-farm Processing and Local Products

As noted above, to generate extra revenue some farmers have expanded their businesses to include small-scale processing units. Some established dairy farms have built on-farm processing plants

to make a milk product to sell at local markets. Such business ventures have grown over the past few years with dairies of 100 cows or less.

A study using 2003 data (Nicholson and Stephenson, 2006) collected financial and marketing data from 27 on-farm enterprises from cow, goat, and sheep enterprises in New York, Vermont, and Wisconsin. They identified two types of dairy processors who start on-farm processing; those that have farming experience and an existing dairy, and those that have a marketing and processing background but no experience in farming. The study found that many processing businesses earned a negative operating income during the year for which data was collected, and the average processing enterprise had a negative net worth. However, processors with more years of experience had better financial outcomes on average. Also, businesses that had separate managers for the processing plant and the dairy had a higher success rate since managing both enterprises can be a challenge. The authors suggested that on-farm processing is not a solution for struggling dairy farms, but agreed that more research over a longer time frame was needed to get an accurate measure of financial performance of small-scale processing units.

A recent case study in California (De Groot, 2011) looked at the financial profitability of a farmstead cheese operation to determine the feasibility of a small dairy expanding into a value-added dairy operation. The study focused on a 400-cow jersey dairy enterprise that has been processing artisan cheeses since 2009. The operation sold 80% of its product to wholesalers and 20% directly to consumers at local farmers' markets. Their 2010 financial data indicated that the operation had a negative net operating income, mostly due to a large inventory of unsold ripening cheese. If the entire inventory were sold, the operation would have been quite profitable and achieved a 61% return on assets. As most cheese productions have a greater delay time between production and sales, producing a value-added dairy product with a shorter production period, such as ice cream or yogurt, could generate higher net income. However, different production processes could create higher or lower operational costs. Because gelato is made daily, it is readily available to consumers within minutes, sales are possible more quickly than for

other dairy products such as cheese or yogurt. This is likely to be a desirable characteristic in the value-added market.

An analysis by Best and Wolf (2009) was conducted to measure buyers' preferences for locally-produced dairy products in order to determine the feasibility of on-farm processing in the southeastern part of the United States. They found that many consumers were interested in purchasing locally-produced dairy products. Consumers believed that locally-produced milk was of higher quality compared to standard commercially available products, and indicated they would be willing to pay more for this attribute. Consumers are also looking for something more unique than fluid milk products, as the average rating for this attribute scored a 3.44 out of 5. If a more unique dairy product were available, consumers would have an increased interest in purchasing it. However, one limitation to asking questions such as "Would you buy this?" is that it is easy for consumers to say yes when they don't actually have to pay, which can overestimate the number of likely purchasers and the price they would pay.

Because today's consumers often want information about where their food originates, value-added dairying can provide a more direct link from the farm to the customer. Consumers have a desire to learn about food manufacturing and family dairies now have an outlet to display their farm's history and production practices. For value-added dairying, marketing the family history seems simplistic when really it allows the consumer to personally connect with that producer. This makes the consumer more willing to purchase a product from a local distributor than a large, commercial retailer (Govindasamy, *et al.*, 2004). Many of these value-added products have characteristics some consumer market segments value: they are made using less-intensive animal management practices and artisanal batch-style production methods compared to commercialized production.

Chapter 3

METHODOLOGY

This chapter describes the procedures for data collection and analysis for the objectives of finding the average start-up costs and consumer demand. To determine the investment and operating costs for a gelato business, the demand for a gelato product was assessed to estimate potential sales. This information is used to estimate cost of equipment and supplies needed to meet demand. Price quotes from equipment vendors were collected to gather the average cost of different batch freezer models, refrigerators, display cases, and rental spaces to compare prices and estimate a total investment cost. Operating costs were estimated using secondary data and assumptions about the ingredient mix to make gelato.

Procedures for Data Collection

Consumer Demand for Gelato

To evaluate consumer interest in purchasing locally-produced gelato in Petaluma, a survey was administered via email using a web-based survey in SurveyMonkey and circulated to Petaluma and Sonoma County residents. Survey data collection was undertaken from April 1st to 22nd, when ice cream consumption is neutral compared to heavily/light consumption in summer and winter. The survey requested information on how often respondents purchase ice cream at local scoop shops, preferred characteristics of ice cream, and perceptions of value-added and artisanal products (Appendix A). Responses evaluated the likelihood of visiting a gelato scoop shop and consumer interest of purchasing a value-added dairy product. The survey also assisted in determining if gelato would be an “original” enough product to be sold for premium prices. Consumer survey data were collected via SurveyMonkey to encourage greater participation and to reach respondents outside the Petaluma area. These non-Petaluma respondents were treated as the potential tourist population that could visit a gelato scoop shop. The survey was first emailed to close family and friends with an encouragement to forward the email

along to others, using the same format one might use to pass along a chain email. A specific end date was included to notify recipients that the survey would need to be completed within three weeks.

Average Start-up Costs

Capital investment costs for items such as batch freezer, storage freezer, refrigerator, rental space, renovations, and other costs incurred when starting a business were developed based on secondary data provided by industry contacts, manufacturer's websites, and local entrepreneurs. These values were used to determine an estimated total investment cost. The estimated investment costs of batch freezers were gathered from three different equipment supply companies: Technogel USA, H&M Company USA, and E&C Company. Price quotes for different sized gelato display cases were collected from H&M Company, Master-Refrigeration Solutions, and Oscartielle. Rental spaces available in Petaluma's downtown area were gathered from Basin Street District Properties and Keegan & Coppin Reality. Ingredient prices for egg yolks and sugar were collected from a local food distributor, Sysco of San Francisco, and the average prices for dairy ingredients such as milk, cream, and nonfat dry milk were obtained from dairy the Marketing and Milk Pooling branch of the California Department of Food and Agriculture. Packaging and material costs were gathered from Gelato Supply Company. Monthly expenses such as utilities, repairs and maintenance, and labor expenses are taken from the study conducted by Nicholson and Stephenson (2006). This was completed during the months of April-May 2012.

Procedures for Data Analysis

Data were gathered from 226 survey respondents at the end of the three-week collection period. Although this is less than the 579 respondents desired to represent 1% of the Petaluma population, it was still judged to be an adequate number for the purposes of this study. The data were organized into Microsoft Excel and a pivot table was used to develop frequency and cross-tabulations to analyze the demographic characteristics of residents and non-residents. The data were use to estimate a potential sales volume per month based on the number of residents and visitors who expressed interest in purchasing a

gelato product, their reported frequency of visits to other ice cream scoop shops, and an assumed number of scoops purchased per visit.

The equation to estimate the expected monthly sales for a gelato scoop shop is as follows:

$$\text{Estimated Monthly Gelato Scoop Sales} = (\text{Population})(\text{Population Proportion Likely to Purchase Gelato})(\text{Frequency of Visits to Scoop Shops})(\text{Scoops Purchased Per Visit})$$

A more detailed explanation of each element is outlined below. To assess the consumer interest in purchasing a locally-made product, which can complement information about potential gelato purchases, respondents were also asked how likely they would be to purchase a value-added (or artisanal) dairy product out of 100 percent. The proportion of residents and non-residents that expressed interest in purchasing an artisan dairy product were categorized into three ranges of likelihood: high, moderate, and low. A respondent was classified as “likely to purchase” if they expressed a greater than 50% likelihood of purchasing an artisan dairy product.

Additionally, other elements that could influence a consumer’s likelihood of purchasing an ice cream product such as texture and quality of the product, manufacturing practices, price, or whether or not the product is local to the area were researched to understand the desirability of such product attributes to help increase the likelihood of purchase. Respondents were asked to rate the desirability of the characteristics listed above out of five. These were organized from most desirable to least desirable attributes.

Proportion Likely to Purchase Gelato

In order to estimate demand for a gelato product, respondents were shown a picture of a cup of gelato with a price of \$3.50/unit and asked how likely they would be to purchase the product, out of 100 percent. These responses were also assigned to categories of high, moderate, and low to observe those who expressed a high interest in purchasing a gelato product. A respondent was classified as “likely to purchase” if they expressed a greater than 50% likelihood of purchasing gelato. The proportion of non-resident respondents was used to determine the amount of expected sales that could be generated from

visitors to the area. By multiplying the proportion of survey respondents expressing moderate or high interest in purchasing gelato by the population of Petaluma residents and number of visitors to the area per month, the population expressing moderate or high interest in purchasing gelato was determined. This was calculated for both residents and non-residents.

Frequency of Visits to Scoop Shops

The estimated frequency of purchase was calculated using survey responses regarding often respondents visited other local scoop shops in the past year. Eight different scoop shops were listed in the survey and respondents were given answer options of visiting each location more than once a month, once a month, less than 6 months, or never. These responses were converted to monthly visit frequencies, using a conservative value of 2 for “more than once a month,” 0.167 for “less than 6 months,” and 0 for “never.” The potential visits to a scoop shop per month were calculated for the average frequency of visits to the eight different scoop shop locations and also the maximum visit frequency to any of the scoop shops to estimate a range for visit frequency to a gelato scoop shop.

Scoops Purchased per Visit

The number of scoops purchased per visit was not assessed in the survey, so it was assumed to be either one scoop or two scoops per visit to provide a range of sales estimates. The estimated scoops per visit per month was calculated by multiplying the average and maximum frequencies of scoop shop visits by the assumed number of scoops purchased per visit.

Estimates of Gelato Sales

Estimated total sales per month (scoops) were calculated using the equation above, which multiplies the resident and non-resident population expressing moderate or high interest in purchasing gelato by the estimated scoops per visit per month. This was then divided by the number of business days per month to find the sales (scoops) per business day, assuming thirty business days per month.

To measure the average price to charge for a gelato product, respondents were asked to consider a range of prices they would be willing to spend on ice cream sold in a scoop shop environment. The proportion of respondents who expressed a high, moderate, or low interest in purchasing gelato was used to find the range of prices consumers with a 50% interest in purchasing gelato would be willing to pay. The average price observed was used to calculate the estimated monthly and annual revenue of a gelato scoop shop. The estimated total sales per month (scoops) for the number of scoops purchased per visit were used to estimate an appropriate production volume for the average and maximum level of sales per day, as well as the associated variable costs and income over operating expenses.

Average Start-up Costs

Rental expenses were researched for specific locations and then compared based on cost per square foot. Characteristics of different model batch freezers, blast freezers, refrigerators, and display cases were obtained to compare prices, manufacturers, and sizes offered. Retail prices associated with the equipment capacities needed to meet demand were used to estimate the total investment cost. Revenues from estimated consumer demand, and returns over operating expenses were assessed to find if starting a gelato scoop shop in the Petaluma area is a feasible business venture.

Commercial Space Available

The popular retail areas in Petaluma are located in the Theatre District, Basin Street District, and the storefronts along Petaluma Boulevard. Realtors from Basin Street District Properties and Keegan & Coppin Reality were contacted to find the estimated rental expense per month for a commercial space in these three districts. Information was collected for a variety of spaces ranging from 688 ft² to 2,024 ft² to provided an estimate of the average price per square foot for a commercial space in the downtown area, which provides an estimate of the potential monthly rental expense as well as foot traffic received daily. A summary table was created to compare the nine different locations collected based on square footage and price per square foot. An average price per square foot for each district was estimated because the

actual rental price would depend on the duration of the lease and size of space rented. The average price per district was multiplied by the location size to calculate an estimated monthly rent expense per unit available. Utility costs such as water and electricity are not covered in the monthly rental expense and were assessed separately.

Processing Equipment Expense

After collecting the equipment cost estimates from the numerous vendors listed above, the retail prices for batch freezers, display cases, storage refrigerators and freezers were compiled into summary tables and examined based on the cost per unit capacity. By dividing the retail price by the liter capacity per batch freezers and gelato display cases the costs per unit capacity were determined. The average, maximum, and minimum cost per liter was calculated to compare models, sizes, and prices. Based on the range of average sales and the amount of estimated scoops sold daily, the number of batches needed to meet the expected demand was calculated by determining the amount of scoops in one 5-liter container of gelato and multiplied by the number of 5-liter containers needed per day to find a total volume capacity of gelato. The equipment size and models were selected based on the equipment configuration that would be able to meet this total volume capacity. The associated retail prices for the selected batch freezer and gelato display case were applied to the total investment cost.

Estimated Operating Expenses

Key operating costs for a gelato scoop shop include ingredients, packaging, labor, utilities, and repairs and maintenance to the building and equipment. Ice cream makers use a mix formulation to calculate the quantity of ingredients required to make a desired amount of ice cream and to provide a balanced, quality, product that meets legal standards (Marshall, Goff and Hartel, 2003). A mix formulation for gelato was calculated to estimate the amount of ingredients needed per batch. The average prices per ingredient were gathered from the food vendors listed earlier and organized in a production spreadsheet to generate a cost per unit, cost per batch, and cost per hundredweight of milk processed. The

estimated costs per ingredient were calculated by taking the average price per ingredient and multiplying it by the ingredient amount used per batch. The total batch cost is the sum of all ingredient costs plus the total packaging costs. This was also calculated for one hundred pounds of milk processed to determine if total operating expenses fall between \$75 and \$150 per hundredweight of milk processed into gelato. A price per unit was calculated by dividing the amount of 4 oz cups per volume of gelato processed by the total batch cost.

The estimated costs for processing utilities, repairs and maintenance (for both the equipment and building), and labor expenses were taken from the study conducted by Nicholson and Stephenson (2006). The values used are the average values for operating expenses generated by small-scale operations processing cows milk. These values were applied to the case of gelato and modified based on the amount of milk processed per batch and per hundredweight of milk processed.

Estimated Revenues and Income Over Operating Expenses

After determining the estimated monthly sales, the estimated production volume needed to meet demand, and the estimated operating costs per batch, the annual revenues and returns over operating costs were estimated. The equation used to estimate income over operating costs is as followed:

$$\text{Estimated Income over Operating Cost} = \text{Estimated Revenue} - \text{Estimated Operating Costs}$$

Estimated revenue was calculated by multiplying the estimated sales volumes by the assumed price of \$3.50/unit that respondents expressed they would be willing to pay. Total cost is the sum of estimated fixed cost (excluding equipment costs) and variable operating costs per units sold. Estimated fixed cost was determined by taking the average commercial rental price multiplied by the square footage for the selected location. The variable cost per units sold was calculated by multiplying the cost per unit by the estimated sales per month. This was calculated on both a monthly and annual basis.

Assumptions and Limitations

The number of scoops purchased per visit used to find the estimated sales was assumed, as the information was not part of the consumer survey. It is assumed that the proportion of consumers

expressing interest in purchasing a gelato product denotes the proportion of the population that could be potential consumers to a gelato scoop shop. It is also assumed that data collected for estimating the start-up costs of a gelato scoop shop is accurate enough for the purposes of meeting the objectives for determining the initial investment needed. The values per hundredweight of milk processed that were used to estimate expenses for labor, utilities, and repairs and maintenance are from 2003 data and may not accurately represent the cost a gelato scoop shop could generate for the operating expenditures.

The 226 responses from the consumer survey also may not reflect an accurate representation of Petaluma's population because of the limited sample size and potential sample bias due to the non-random nature of the survey distribution through family and friends via email. Additionally, the limitation to asking respondents how likely they are to purchase a product can over- or understate the actual number of units sold during a month since respondents are not actually required to buy the product even though they expressed interest in purchasing it.

Chapter 4

DEVELOPMENT OF THE STUDY

The overall objective of this study is to estimate the start-up costs and returns over operating expenses for a gelato scoop shop in Petaluma. Start-up costs include the retail costs of equipment (a batch freezer, gelato display case, storage refrigerator, and blast freezer). Returns are calculated by multiplying the estimated number of units sold per month by the price per unit and operating costs are calculated per batch of gelato processed and includes expenses for ingredients, supplies, utilities, labor, and repair and maintenance of the building and equipment. Because the sales quantity has a direct influence on the equipment and supplies required, this chapter first discusses estimates of a range of monthly sales values based on the results of the consumer survey. This information is also used to discuss possible pricing strategies to determine revenues. The costs for rental space for the proposed scoop shop, and the costs of the key equipment required are developed based on secondary data from retail space lessors and equipment suppliers, respectively. Estimates of operating costs are developed using secondary data on the costs of inputs and an assumed product formulation. Income over operating costs is estimated for four different assumptions about sales.

Consumer Demand for Gelato

Survey data were used to estimate a potential sales volume per month based on the number of residents and visitors who expressed interest in purchasing a gelato product, their reported frequency of visits to other ice cream scoop shops, and assumptions about the number of scoops purchased per visit¹. This information on potential production volumes was also used to estimate production costs and potential revenues.

¹ This is assumed because this information was not collected as a part of the consumer survey.

Consumer Demographics

Data were collected from 226 respondents and analyzed to estimate the proportion of Petaluma residents that would have an interest in purchasing a gelato product. Of the 226 respondents, 87% were female and 12% were male. This large discrepancy between female and male respondents does not reflect the actual ratio of females to males in the Petaluma area. Nevertheless, female consumers are regarded as an important target consumer as they tend to make the purchasing decisions for the children of the household and therefore may be the principal decision makers regarding purchases of ice cream and related products away from home. Of the respondents surveyed, the majority is between the ages of 35-54, and 50% have children in the household under the age of eighteen. In this case, children under the age of eighteen make up 23% of the total population of Petaluma (Census Bureau, 2010). Sixty percent of survey respondents have a household income of \$80,000 or greater and 55% have a college or graduate level education. According to 2010 census data, the average household income for Petaluma was \$72,800 and only 33% of residents have a Bachelor's degree or higher. Because the survey results show that the majority of respondents have a higher household income and educational background than the average resident, the demographic data should not be considered completely representative of the Petaluma population. However, Petaluma residents have a higher household income than California's average at \$60,000 (Census Bureau, 2010). Petaluma also has a higher per capita disposable income at \$34,600.

As stated earlier, Petaluma has a population around 57,900 residents and about 800 tourists visit Petaluma's Visitors Center per month, which is roughly 9,600 visitors annually. The number of tourists that visit Petaluma is undoubtedly greater, as the 9,600 value does not account for the visitors who do not stop at the Visitors Center. At least half of the survey respondents are Petaluma residents and 25% live at a distance greater than fifteen miles from downtown Petaluma.

Calculating Consumer Demand

The number of sales generated can be estimated based on a consumer's stated willingness to purchase a product, how often they purchase that product in a given time frame, and how many units of

product are bought at time of purchase. In order to determine the number of potential sales, the proportion of respondents who have an interest in purchasing a gelato product was multiplied by Petaluma's population and the number of visitors to the area per month. This indicates the number of residents and non-residents who could be interested in purchasing gelato. This was then multiplied by the frequency of scoop shop visits by respondents to find how often a willing consumer might visit a gelato scoop shop within a month or year. A range of potential scoops purchased per visit was estimated to determine the average and maximum demand for a gelato scoop shop.

Likelihood of Purchase

In order to estimate demand for a gelato product, respondents were shown a picture of a cup of gelato with a price of \$3.50/unit and asked how likely they would be to purchase the product, out of 100 percent. These answers were categorized into three ranges of likelihood: high, moderate, and low. A Respondent who marked a likelihood of 70% or higher was categorized as high, a respondent between 70-50% was categorized as moderate, and low was anyone with less than 50% likelihood of purchasing a gelato product (Table 1). Of the Petaluma residents, 66% have at least a 50% likelihood of purchasing a gelato product, and 42% have a high likelihood. The former percentage value was used to estimate possible monthly sales made by Petaluma residents. A similar assessment was conducted for the non-residents, which indicated that that 64% of people visiting the area would have at least a moderate interest in purchasing a gelato product.

Table 1: Likelihood of Purchasing a Gelato Product for Petaluma Residents and Non-Residents

Likelihood of Purchase	Non-Residents	Petaluma Residents	Total
High	34%	42%	38%
Moderate	30%	24%	27%
Low	36%	34%	35%
Total	100%	100%	100%

Source: Consumer survey of Petaluma residents and non-residents.

Note: N=226.

To assess the consumer interest in purchasing a locally-made product, which can complement information about potential gelato purchases, respondents were also asked how likely they would be to

purchase a value-added (or artisanal) dairy product. As stated earlier, value-added or farmstead products can be one way for local producers to increase the value of their milk by converting it into a higher-value (higher-margin) product. By measuring the consumer response to artisan products, this is an alternative way to assess their willingness to purchase a gelato product that would be made and marketed using artisanal practices, such as “batch-made.” Using the same ranges of high, moderate, and low, 68% of total respondents said they would have a high likelihood of purchasing a value-added dairy product, and 82% indicated at least a moderate likelihood (Table 2). The former values specific to gelato are used to estimate potential sales, because these result in a more conservative estimate of potential sales.

Table 2. Likelihood of Purchasing a Value-Added Dairy Product for Petaluma Residents and Non-Residents

Likelihood of Purchase	Number of Respondents	Percent of Respondents
High	153	68%
Moderate	32	14%
Low	42	18%
Total	226	100%

Source: Consumer survey of Petaluma residents and non-residents.

Some factors that could influence a consumer’s likelihood of purchasing an ice cream product are the texture and quality of the product, manufacturing practices, price, or whether or not the product is local to the area (Table 3). Through understanding the desirability of such product attributes, a producer can incorporate the more desirable attributes in the formulation and marketing of their product to help increase the likelihood of purchase. The highest-ranked attribute was “rich tasting” (4.06 out of 5). A product that is made locally was the second most desirable characteristic, with an average rating of 3.77 out of 5 over other characteristics. Made with all-natural ingredients and original flavor were nearly as important, with average ratings just 0.01 and 0.08 lower, respectively. Other attributes such as price, product is organic, brand, and fat content were viewed as less important. A scoop shop that produces a rich-tasting, locally-made product prepared with all-natural ingredients or offers original flavor options should have strong appeal to these consumers.

Table 3. Desirability for Ice Cream Characteristics

Ice Cream Characteristics	Rating Average
Rich Tasting	4.06
Locally Produced	3.77
Made with All-Natural Ingredients	3.76
Original Flavor	3.69
Price	3.38
Familiar Brand	3.21
Low in Fat	2.82
Organically Produced	2.52

Source: Consumer survey of Petaluma residents and non-residents.

Note: N=226.

Frequency of Purchase

Respondents also were asked how often they visited local ice cream scoop shops in Sonoma County in the last year. Eight different scoop shops were listed and respondents chose options of visiting the location more than once a month, once a month, less than 6 months, or never. These responses were converted to monthly visit frequencies, using a conservative value of 2 for “more than once a month,” 0.167 for “less than 6 months,” and 0 for “never.” The estimated frequency of potential visits to a scoop shop were based on either the average visit frequency to the eight scoop shops or the maximum visit frequency to them. The former assumes that the gelato scoop shop will have the same appeal as the average ice cream scoop shop, whereas the latter assumes that the gelato scoop shop will have the same appeal as the most frequently visited ice cream scoop shop. This provides a range of estimates for potential gelato scoop shop sales. The average frequency of visits to ice cream scoop shops was 0.17 visits per month, or about two times per year, and a maximum frequency of 0.55 visits per month, or almost seven visits per year (Table 4).

Estimates of Gelato Sales

Estimated total sales per month (scoops) were calculated by multiplying the resident and non-resident population expressing moderate or high interest in purchasing gelato by the estimated scoops per visit per month. Estimated sales per month range from a low of 6,454 units if one scoop was purchased

per visit (77,448 units of gelato annually) to 42,599 per month if they purchased two scoops per visit based on the maximum visit frequency (Table 4).

These sales estimates do not account for the number of respondents that might not intend to buy but realize they could make an unplanned purchase in the future (Armstrong, 2000). The estimated sales numbers could also overstate or understate the actual number of units sold during a month. Of greater concern for the use of the estimates is the likelihood that consumers have over-stated their willingness to purchase. As mentioned earlier, survey respondents may overstate their willingness to purchase or to pay the stated prices. The same goes for the respondents who have at least a 50% likelihood of purchasing, they might decide in the future they no longer have an interest in purchasing after experiencing the product. These sales numbers could also be in error because the sample does not accurately represent the demographic characteristics of Petaluma and the number of visitors to the Petaluma area could be greater than 800 per month, and due to sampling error. The location of the store would also influence the number of consumers that could visit a gelato scoop shop. The higher estimated sales volumes imply implausibly high sales for a gelato scoop shop, even though they are based on the consumer survey data. Thus, as a conservative estimate, the remaining discussion uses the smaller estimated sales volumes to calculate equipment needs, revenues, and income over operating costs.

Table. 4 Estimated Total Sales per Month Under 4 Assumptions about Visit Frequency and Scoops Purchased Per Visit

Assumed Frequency and Scoop Purchase Level, Group	Total Population ^a	Proportion of Population Expressing Moderate or High Interest in Purchasing Gelato ^b	Population Expressing Moderate or High Interest in Purchasing Gelato ^c	Visits to Scoop Shop per Month ^d	Assumed Scoops per Visit	Estimated Scoops per Visit per Month ^e	Estimated Total Sales per Month, Scoops ^f	Sales per Business Day, Scoops ^g
<i>One Scoop Purchased Per Visit</i>								
Average of Other Scoop Shops								
Residents	57,900	0.66	38,214	0.17	1	0.17	6,369	212
Non-Residents	800	0.64	512	0.17	1	0.17	85	3
Total	58,700		38,726				6,454	215
Maximum of Other Scoop Shops								
Residents	57,900	0.66	38,214	0.55	1	0.55	21,018	701
Non-Residents	800	0.64	512	0.55	1	0.55	282	9
Total	58,700		38,726				21,299	710
<i>Two Scoops Purchased per Visit</i>								
Average of Other Scoop Shops								
Residents	57,900	0.66	38,214	0.17	2	0.33	12,738	425
Non-Residents	800	0.64	512	0.17	2	0.33	171	6
Total	58,700		38,726				12,909	430
Maximum of Other Scoop Shops								
Residents	57,900	0.66	38,214	0.55	2	1.10	42,035	1,401
Non-Residents	800	0.64	512	0.55	2	1.10	536	19
Total	58,700		38,726				42,599	1,420

Notes: ^aResident population is from 2010 Census data; Non-Resident population is from Petaluma Visitor's Center data.

^bProportion of Population Expressing Moderate or High Interest in Purchasing Gelato is the sum of Residents who had a Moderate or High Interest in Purchasing Gelato and the sum of Non-Residents who had a Moderate or High Interest in Purchasing Gelato (Table 1).

^cPopulation Expressing Moderate or High Interest in Purchasing Gelato is calculated by multiplying the total population by the Proportion of Population Expressing Moderate or High Interest in Purchasing Gelato.

^dVisits to Scoop Shop per Month is the average and maximum visits by all survey respondents.

^eEstimated Scoops per Visit per Month is calculated by multiplying the Visits to Scoop Shop per Month by Assumed Scoops per Month.

^fEstimated Total Sales per Month (Scoops) is calculated by multiplying the Population Expressing Moderate or High Interest in Purchasing Gelato by the Estimated Scoops per Visit per Month.

^gSales per Business Day (Scoops) is calculated by dividing the Estimated Total Sales per Month (Scoops) by 30 business days per month.

Estimated Prices Consumers are Willing to Pay and Scoop Shop Revenues

The amount consumers might be willing to pay for a gelato product is also an important element of estimating potential sales and revenues. To measure the average price to charge for a gelato product, respondents were asked to consider a range of prices they would be willing to spend on ice cream sold in a scoop shop environment. Forty-five percent of respondents replied that they are willing to spend between \$2.25 and \$3.00/unit of ice cream, and 32% were willing to spend up to \$4.00/unit. The amount consumers are willing to spend per scoop appears correlated with other factors such as income and the frequency with which they dine out. Of the consumers willing to spend \$3.25 to \$4.00 for a scoop of ice cream, 44% dine out once a week and 36% dine out once a month. Of the respondents who dine out once a week, 47% said they would be willing to spend between \$4.25 and \$5.00/unit of ice cream. Respondents who dine out more frequently are willing to pay higher prices than those who dine out once a month, perhaps because they have higher disposable income. Of the respondents who have a high interest in purchasing gelato, 44% said they would be willing to spend between \$3.25 and \$4.00/unit of ice cream. However, 58% of respondents who expressed an interest in purchasing a gelato product replied that they would pay between \$2.25 and \$3.00/unit (Table 5). As most artisan dairy products are labor intensive, producers try to capture premium prices to offset the additional expenses.

Table 5. Likelihood of Purchasing a Gelato Product at Various Prices

Price	Respondents with a High Interest in Purchasing	Respondents with a Moderate Interest in Purchasing	Respondents with a Low Interest in Purchasing	Total
\$1.25-\$2.00	3%	5%	11%	6%
\$2.25-\$3.00	35%	58%	51%	46%
\$3.25-\$4.00	44%	27%	25%	33%
\$4.25-\$5.00	13%	5%	7%	9%
\$5.00 or Greater	5%	5%	7%	5%
Total	100%	100%	100%	100%

Source: Consumer survey of Petaluma residents and non-residents.

Note: N=220.

Using a sales price of \$3.50/4oz cup and an estimated demand at an average of 6,454 units sold per month, potential revenues could be \$271,068 annually, if consumers purchase one scoops per visit (Table 6).

Table 6. Estimated Monthly Scoop Shop Revenues for Assumed Scoops Purchased per Visit

Scoop Purchase Level	Estimated Total Sales per Month ^a	Price	Estimated Monthly Revenue ^b
<i>One Scoop Purchased per Visit</i>			
Average Total Sales	6,454	\$3.50	\$22,589
Maximum Total Sales	21,299	\$3.50	\$74,547
<i>Two Scoops Purchased per Visit</i>			
Average Total Sales	12,909	\$3.50	\$45,182
Maximum Total Sales	42,599	\$3.50	149,097

Notes: ^aEstimated Total Sales per Month, Scoops, values are from Table 4.

^bEstimated Revenue is calculated by multiplying the Estimated Total Sales per Month (Scoops) by Price.

Average Start-up Costs

After determining estimates of demand and calculating average monthly sales, an analysis of the estimated operating costs is needed to determine the potential profitability of a gelato scoop shop. Estimated investment costs were also required to determine the total initial expense. The investment costs included retail space rental expense, gelato production equipment, and key operating costs such as ingredient costs, packaging and materials, utilities, labor, and repair and maintenance.

Commercial Space Available for Rent in Petaluma

In Petaluma's downtown district, the ideal spot to open a gelato scoop shop would be in the heart of the downtown area. The popular retail areas in Petaluma are located in the Theatre District, Basin Street District, and the storefronts along Petaluma Boulevard, which is the main street in the downtown area. These three locations are located in a dense retail area of downtown and receive heavy foot traffic on a daily basis. Since the success and sales of a gelato scoop shop would rely greatly on the number of visitors it receives per day, location is crucial when contemplating such a business. Petaluma's population within one mile of the downtown area encompasses about 15,224 residents (Terranomics Property Profile, 2008). One benefit to a gelato scoop shop is that it could operate in a variety of retail spaces and is not limited to a specific operating size. By optimizing the smallest space available without limiting the room for expansion in the future, rental expenses can be minimized and lower the overall fixed costs for the business. For the scope of this project a retail space of 1,500 square feet (ft²) is

estimated to be the optimal size space for a gelato scoop shop with room for production, retail counter/display case, and a customer seating area. That said, leasing terms for retail spaces ranging from 688 ft² to 2,024 ft² provided an estimate of the average price per square foot to help estimate a potential monthly rent expense as well as compare locations of the different spaces in terms of foot traffic received daily.

The newly revitalized Theatre District integrates retail, office, residential, restaurant, and entertainment in a seven-block span. Located right across from Petaluma Cinema West, Theatre Square houses a mix of restaurants and retail outlets at ground level and residential apartments on the second and third floors. This site draws residents of all ages to the area, especially on weekends and during the evening hours. There are currently four spaces available for rent in the Theatre Square, ranging from 1,145 ft² to as large as 2,024 ft² (Appendix B). The actual rental price would range between \$1.65-\$1.90/ft² depending on the duration and type of lease. For this project an average rental cost of \$1.73/ft² was calculated, because the exact rental price for this area is uncertain (Table 7). Between the commercial spaces available in the Theatre District the largest could rent for about \$3,500, unit B, and the smallest at \$1,980, unit D (Appendix B). Utility costs such as water and electricity are not covered in the monthly rental expense and will be assessed separately.

Table 7. Commercial Building Spaces and Estimated Rental Expense for a Gelato Scoop in Petaluma

Unit	Square Footage	Price per Square Footage	Average Price	Estimated Rental Expense, \$/month
A	1,618	\$1.65-1.90	\$1.73	\$2,798
B	2,024	\$1.65-1.90	\$1.73	\$3,500
C	1,200	\$1.65-1.90	\$1.73	\$3,075
D	1,145	\$1.65-1.90	\$1.73	\$1,980
E	1,392	\$1.65-1.90	\$1.73	\$2,407
F	1,313	\$1.65-1.90	\$1.73	\$2,271
G	1,015	\$1.65-1.90	\$1.73	\$1,755
H	688	\$1.95		\$1,342
I	1,100	\$1.95		\$2,145

Source: Basin Street District Properties and Keegan & Coppin Reality, Petaluma CA.

Note: Estimated Rental Expense is Square Footage multiplied by Average Price

The Basin Street District is the commercial space located directly behind the Petaluma Cinema West along “B” Street and the Petaluma Boulevard and also encompasses the storefronts located on the block between “C” Street and 2nd Street. Within the Basin Street Districts there are three available spaces for rent, with the largest at 1,392 ft² and the smallest at 1,015 ft². Space E and F have store entrances located on “B” Street, right between a fast food restaurant and First Community Bank (Appendix D). The other, unit G, is located directly across from Theatre Square on 2nd Street (Appendix C). The price per square footage is the same as the Theatre District. Using the average price per square foot of \$1.73, the largest unit in the Basin Street District would cost about \$2,407 per month and the smallest unit, (G) is estimated at monthly expense of \$1,755 (Table 7). Each unit has the capabilities to be converted into a commercial or retail space, however utility costs are separate from the rental expense.

Lastly, the Petaluma River Mill was an old two-story feed mill that was later renovated and subdivided into individual units. It is located between the edge of the Petaluma River and the Petaluma Boulevard. Its tenants range from a variety of eateries, retail shops, and beauty salon on the first floor and office spaces on the second. There are currently two units available for rent at ground level, unit H is 688 ft² and the other, unit I, is 1,100 ft². These units would rent for \$1.95/ft² and rent for \$0.05 more per square foot than the spaces available in the Theatre and Basin Street Districts, even at their highest potential price of \$1.90/ft² (Table 7). The two units located in the Petaluma River Mill are removed from the direct foot traffic of the downtown area when compared with the spaces located in the Theatre Square and Basin Street District. However, unit I would be more desirable, as its store windows can be seen from “B” Street even though the entrance is located inside the Mill. Unit H, even though larger, is located at the back of the Mill and would not be as ideal, as it is hidden from street view and not readily accessible. Unit I does not have water or a drainage system in place, so construction and remodeling costs will have to be added to the total start-up costs in order to update the building to food-grade standards.

Using the average price per square footage of \$1.73 in the downtown area, it was determined that an estimated monthly rent expense could be about \$2,200 for a space of 1,500 ft². During the summer and

fall months, Petaluma hosts their farmers' market every Wednesday night. All potential rental spaces are within very close proximity, with one directly on the host street of this event. The farmers' market draws more residents and visitors to the area to shop for produce, sample local products, and socialize. Retailers in this area catch consumers on their way to or from this weekly event. In general, the large number of retail outlets, cinema, office spaces, residential apartments, and restaurants in this area generate a large prospective market and any of these several retail spaces would be ideal for a gelato scoop shop.

Processing Equipment Expense

Start-up costs of a gelato scoop shop include processing equipment in addition to the renovation of an appropriate retail space. The investment costs of the equipment were obtained from manufacturers and only the essential processing equipment and retail furniture needed to sell gelato were estimated. The essential equipment needed consist of a batch freezer, storage blast freezer, storage refrigerator, and product display case. For the production of gelato, a batch freezer with both pasteurizing and freezing capabilities would be desirable in order to heat and pasteurize the gelato mix and then freeze the mixture to its semi-soft, frozen state. Most gelato or ice cream scoop shops purchase a pre-made base or mix, which they then add their flavors to. This method requires a batch freezer with freezing capabilities only, and cuts down on the initial investment cost. For this analysis, a combination pasteurizer and freezer would be required for the pasteurization of the raw milk ingredients used in making a "house" mix in the development of a value-added-dairy product. The estimated investment costs of a combination batch freezer were gathered from the following equipment supply companies: Technogel USA, H&M Company USA, and E&C Company. Technogel makes and sells artisanal style gelato equipment as well as large continuous ice cream freezers used in commercial production. The two models being considered for use in a gelato scoop shop are the Mixgel 30, which has a barrel size of 14 liters and the Mixgel 50, at 19 liters. The retail prices are around \$32,800 and \$36,000, respectively (Table 8). These prices do not reflect the shipping and set up costs, which can add an additional \$300-400 to the final equipment price, according to one of the sales representatives. H&M and E&C Companies are similar in terms of the

equipment they supply and also offer different models of combination batch freezers. H&M offers models with a barrel size of 15 liters for \$18,500 and 20 liters at a cost of \$20,500 (Table 8). E&C Company sells the BravoTrittico Mechanic model, available barrel size of 30 liters and 60 liters. These are priced at \$33,900 and \$41,900, respectively. The Bravo Mechanic 60 is the largest batch freezer in terms of capacity; it can produce 60 liters per batch. All three brands have an average batch cycle, between heating and freezing, of fifteen minutes, and can produce between three to ten 5-liter gelato pans per batch.

Table 8. Combination Pasteurizer and Batch Freezer Prices for Various Models

Model	Capacity, Liters	Retail Price ^b	Price per Liter ^a
Mixgel 30	14	\$32,800	\$2,343
Mixgel 50	19	\$36,000	\$1,895
HM15C	15	\$18,500	\$1,233
HM20C	20	\$20,500	\$1,025
Mechanic 30	30	\$33,900	\$1,130
Mechanic 60	60	\$41,900	\$698
Maximum Price/Liter			\$2,343
Minimum Price/Liter			\$698
Average Price/Liter			\$1,387

Note: ^aThe Price per Liter is the Retail Price divided by the Liter Capacity.

^bThe Retail Price does not reflect shipping & set-up fees.

Based on the range of average sales per month of 6,454 for one scoop per visit to 12,909 for two scoops per visit per month, the number of batches needed to meet the expected demand would be about two to four batches per day if a machine with a 20-liter capacity were used. A batch freezer with a 20-liter capacity could meet the highest level of sales without being too small, even if sales reached as high as 21,299 for one scoop per visit to 42,599 for two scoops per visit per month. In this scenario an eight-batch production volume would be needed to supply enough gelato for the maximum daily demand of 1,420 scoops (Table 4). An investment cost of \$20,500 is assumed based on the pricing of the HM20C unit with a 20-liter capacity (Table 8).

The following suppliers sell three styles for a potential gelato display case: Master-Refrigeration Solutions, H&M Company, and Oscartielle. Of these, three different sizes were compared to estimate a range of prices for the possible sizes (Table 9). The estimated average prices per number of pans displayed are \$13,600 for a case that can hold around twelve 5-liter pans, \$16,200 for eighteen pans, and

an average cost of \$16,500 for cases that can hold 24-36 pans. For this type of display case, half of the total pans are on display while the rest is stored underneath for an easy refill. The shipping and set-up costs could increase the total purchase cost by \$350-\$400. By assuming that the estimated total sales per month on average could range between 6,454 to 12,909 scoops per month (if consumers purchased one or two scoops per visit) this would generate a production volume of eighty liters of gelato (four 20-liter batches), or sixteen 5-liter pans. For this, the Sacher SG80 display case with a total capacity of eighty liters was chosen to support the potential monthly production volumes and the retail price of \$15,175 was applied to the total investment cost (Table 10). Prices for a True Brand Manufacturing blast freezer and storage refrigerator were obtained from Mission Restaurant Supply and estimated to be \$2,900 and \$3,800, respectively.

Table 9. Gelato Display Case Prices for Various Models

Model	Total Capacity, Liters	Retail Price ^a	Price per Liter ^b
Gel-6 Merchandiser	120	\$14,000	\$117
Gel-9 Merchandiser	180	\$16,500	\$92
Ventura XP II	60	\$16,389	\$273
Ventura XP II	90	\$19,951	\$223
Ventura XP II	120	\$20,600	\$172
Ventura L II	60	\$10,915	\$182
Ventura L II	90	\$13,305	\$148
Ventura L II	120	\$14,927	\$124
Sacher SG60	55	\$13,534	\$246
Sacher SG80	80	\$15,175	\$190
Maximum Price/Liter			\$273
Minimum Price/Liter			\$92
Average Price/Liter			\$177

Note: ^bRetail Price does not reflect shipping & set-up fees.

^aThe Price per Liter is the Retail Price divided by the Liter Capacity.

It is assumed that two freezers and refrigerators would be needed to store ingredients and extra gelato pans. These costs were included in the total investment cost. For the freezer, display case, refrigerator, blast freezer, and shipping/set-up costs, the total investment for the essential processing equipment needed would equal around \$55,395. However, this value does not include costs for building renovation, permits and licenses, and other costs associated with starting a business.

Table 10. Total Investment Costs for a Gelato Scoop Shop

Equipment Needed	Estimated Investment Cost
Batch Freezer ^a	\$20,500
Gelato Display Case ^a	\$15,175
Refrigerator (x2)	\$5,720
Blast Freezer (x2)	\$7,600
Shipping & Set-Up ^b	\$1,400
Total Equipment Investment	\$55,395

Notes: ^aBatch Freezer and Gelato Display Case Estimated Investment Costs are the actual retail prices.

^bShipping & Set-Up Costs are estimated at \$350 per equipment needed, Batch Freezer, Gelato Display Case, Refrigerator, and Blast Freezer.

Estimated Operating Expenses

Key operating costs for a gelato scoop shop include ingredients, packaging, labor, utilities, and repairs and maintenance to the building and equipment. To estimate the ingredient expenses associated with a gelato scoop shop, a mix formulation for gelato was calculated to estimate the amount of ingredients needed per batch. The formulation used desired targets (Marshall, Goff and Hartel, 2003) of 18% milkfat, 7.5% nonfat dry milk, 16% sugar, and 4% egg yolks to calculate the amount of milk, cream, nonfat dry milk, sugar, and egg yolks needed to make a 20 -liter mix of gelato. The amount of vanilla flavoring added per batch would be about 3 ounces to adjust for the flavor lost during the freezing process. One serving of gelato is defined as a 4 oz cup, where there are 35 oz per liter of gelato, or 180 oz per 20-liter batch. Thus, one serving (scoop) of gelato is about 0.11 liters, and there are 45 servings per 20-liter batch. This conversion is used to calculate the cost per batch and per unit.

The average prices per ingredient were used to estimate costs to help account for the change to ingredient prices over the year. This is especially true for milk input costs, as milk prices tend to be highly volatile and fluctuate on a monthly basis. Because of the variability, the California Milk Marketing Order regulates a price floor for all milk prices paid to producers if the market price drops too low. The price of milk for ice cream manufacturing in California is based on the state milk marketing order, and designated as “Class 3.” The Class 3 price for milk saw a high of \$20.80/cwt processed during the 2011 year. The current Class 3 price is \$15.79/cwt for the month of May, however, the average price from January to May 2012 of \$16.69/cwt, or \$0.17/lb, was used to estimate the cost of production (Table 12).

Table 11. Historical and Current Price per Hundredweight of Milk, Cream, and Nonfat Dry Milk

Dairy Ingredient	Average Market Price 2012, cwt ^a	Average Market Price from 2011, cwt	Average Market Price from 2007-2012, cwt	Average Price, cwt
Fluid Milk	\$16.69	\$18.91	\$15.64	\$17.01
Cream	\$16.74	\$18.96	\$15.69	\$17.13
Nonfat Dry Milk	\$15.44	\$18.82	\$24.93	\$19.73

Source: California Department of Food and Agriculture, Dairy Prices, Excel File of California Milk Prices of historical class prices and pool prices by month for 2012. Northern California prices for milk, cream, and Nonfat Dry Milk were used.

Notes: The price for Class 3 milk in 2011 ranged between \$15.96 and \$20.80/cwt, Class 2 price ranged between \$16.01 and \$20.85/cwt in 2011.

^aThe price for Average Market Price, 2012 (cwt) is the average Class 3 milk price between the months of January-May 2012.

The ingredient cost per 20 -liter batch of gelato is estimated to be \$16.20 (Table 12). This amount does not account for costs incurred from other flavorings or inclusions that will increase the total cost per flavored batch². The costs for packaging and materials were collected from Gelato Supply Company, which supplies 4 oz serving cups and spoons. These would cost about \$0.11 per scoop of gelato and equate to \$19.80/batch of gelato adding to a total variable cost of \$39.30 (Table 12). Using this, the estimated price per unit is about \$0.20, calculated by dividing the total batch cost by 180 oz in one 20 - liter batch.

To determine if operating costs would fall between \$75 to \$150 per hundredweight of milk processed into ice cream, the amount of both cream and milk used in gelato production were scaled up to equaled a combined total of about 100 pounds of milk processed. This production volume would require three 20-liter batches to process the assumed 100 lbs of milk. Three batches of gelato would yield 540 units based on 180 units per batch. The ingredient cost of processing 100 pounds of milk would be \$50.54 with a total variable cost of \$116.83 (Table 12). This value is consistent with the approximate break-even value for small-scale dairy processing operations of \$100/cwt milk processed found by Nicholson and Stephenson (2006).

The estimated costs for processing utilities, repairs and maintenance (for both the equipment and building), and labor expenses were taken from the study conducted by Nicholson and Stephenson (2006)

² Flavor options at a gelato scoop shop can change seasonally, and are not included in the production cost per batch. The price per flavor could range between \$3-5 per 20 -liter batch of gelato.

because the actual values could not be calculated as building size and equipment bought are unknown. The estimated operating costs were calculated per hundredweight of milk processed. In their study, value-added dairy processing businesses had average utility expenses of \$2.96/cwt, repairs and maintenance expense of \$3.30/cwt, and a cost of \$10.07/cwt for hired labor (Nicholson and Stephenson, 2006). These costs are not a fully accurate reflection of the expected operating expenses for a gelato scoop shop as they are generated from processing equipment used for a broad range of dairy products (fluid milk, cheese, and yogurt production). It does, however, provide a useful estimate, because of similarities in dairy-processing equipment in terms of the heating, cooling, and storing elements needed for processing milk. The cost per hundredweight of milk processed also provides a unit comparison if production levels reach greater than one hundred pounds of milk or to compare costs to other dairy processing businesses manufacturing at different production volumes. Using these values, the total expected operating expense per 20 –liter batch of gelato processed is \$3.30 and \$6.88 for 100 pounds of milk processed.

Table 12. Estimated Production Costs per Batch and Hundredweight of Milk Processed

	Average Cost per Unit	Amount Needed per 20-Liter Batch, Pounds	Cost per 20-Liter Batch ^f	Amount Needed per 100 Pounds of Milk Processed, Pounds	Cost per 100 Pounds of Milk Processed ^f
<i>Ingredients</i>					
Cream (lb) ^c	\$0.17	20.2	\$3.43	60.6	\$10.60
Milk (lb) ^c	\$0.17	14.1	\$2.41	42.2	\$6.96
Nonfat Dry Milk (lb) ^c	\$1.34	1.0	\$1.28	2.9	\$5.76
Sugar (lb)	\$0.65	7.0	\$4.58	21.1	\$13.73
Egg Yolks (lb)	\$1.50	1.8	\$2.64	5.3	\$7.92
Vanilla Extract (oz) ^d	\$0.62	3.0	\$1.86	9.0	\$5.58
Total Ingredient Cost			\$16.20		\$50.54
<i>Packaging & Materials^e</i>					
4oz Paper Cup	\$0.10	180	\$18.00	540	\$54.00
Spoon	\$0.01	180	\$1.80	540	\$5.40
Total Packaging Cost			\$19.80		\$59.40
<i>Unit Cost^b</i>		180	\$0.20	540	\$0.20
<i>Operating Costs</i>					
Labor			\$2.03		\$4.25
Utilities			\$0.60		\$1.25
Repairs & Maintenance			\$0.67		\$1.39
Total Operating Cost			\$3.30		\$6.88
Total Variable Cost			\$39.30		\$116.83^a

Source: Milk Ingredient prices are from the California Department of Food and Agriculture, Dairy Prices, Excel File of California Milk Prices of historical Class prices and pool prices by month, 2012.

Prices for Sugar and Egg Yolks are from Sysco, San Francisco, 2012.

Notes: ^aThe Total Variable Cost is based on three 20-Liter batches needed to process one hundred pounds of milk (combination of milk and cream amounts).

^bThe Unit Cost is the Total Ingredient Cost plus the Total Packaging Cost divided by the number of units per batch.

^cThe Average Prices for Cream, Milk, and Nonfat Dry Milk are from Table 9.

^dPrice for Vanilla Extract is from Nielsen-Massey Vanillas and is calculated by multiplying 128 ounces by the price of \$79.00/gallon.

^eThe amount of Packaging and Materials needed per 20-liter batch is calculated by finding the amount of ounces in one liter (35ounces per liter) and multiplying by the amount of liters per batch equaling 180 units (4 oz scoop) per batch.

^fThe price per 20-Liter Batch and Price per 100 Pounds of Milk Processed are calculated by multiplying the amounts needed by the Average Price per Unit

Estimated Returns Over Operating Costs Based on Total Sales

After determining the estimated monthly sales, the estimated production volume needed to meet demand, and the estimated operating costs per batch, the annual revenues and returns over operating costs were estimated. By using the estimated total sales for one scoop and two scoops purchased per month the potential revenue could fall between \$22,589 and \$45,182 per month. This was calculated by multiplying the price of \$3.50/unit by the estimated sales volumes of one or two scoops purchased per visit. This would generate annual revenue between \$271,068 and \$542,178 (Table 13). The associated variable costs per unit sold for estimated total sales between 6,454 and 12,909 scoops purchased per visit were calculated by multiplying the variable cost per unit of \$0.20 by the estimated sales per month and per year. Estimated variable cost could range between \$15,490 and \$30,982 annually, depending if customers purchased one or two scoops per visit. The estimated fixed cost is the predicted rental expense of \$2,200/month for a 1,500 ft² space at an average price of \$1.73/ft², or \$26,400 annually. By subtracting the total costs from the estimated revenues the estimated annual income over operating costs could range between \$229,178 and \$484,796, depending on the number of scoops purchased per visit.

As mentioned earlier, the values for sales could be an over- or understatement of the actual number of units sold during a month and the estimated revenues will fluctuate based on the assumptions made for scoops purchased per visit and price point. Estimated costs do not account for all the operating costs associated with producing a gelato product, such as supplies and materials and costs of flavors and inclusions, and can be greater than \$39.30 per 20 -liter batch. Annual returns over operating costs could be greater or less than the estimated values (Table 13) depending on actual sales and cost per unit sold.

Table 13. Annual Revenues, Total Costs, and Returns from Estimated Total Sales per Month

	Average Total Sales for One Scoop Purchased per Visit, Monthly	Average Total Sales for One Scoop Purchased per Visit, Annually	Average Total Sales for Two Scoops Purchased per Visit, Monthly	Average Total Sales for Two Scoops Purchased per Visit, Annually
Estimated Total Sales	6,454	77,448	12,909	154,908
Price	\$3.50	\$3.50	\$3.50	\$3.50
Estimated Revenue ^a	\$22,589	\$271,068	\$45,182	\$542,178
Estimated Fixed Cost ^b	\$2,200	\$26,400	\$2,200	\$26,400
Variable Operating Costs per Unit	\$0.20	\$0.20	\$0.20	\$0.20
Variable Operating Costs per Units Sold ^c	\$1,291	\$15,490	\$2,582	\$30,982
Total Cost	\$3,491	\$41,890	\$4,782	\$57,382
Estimated Income Over Key Operating Costs ^d	\$19,098	\$229,178	\$40,400	\$484,796

Notes: ^aThe Estimated Revenue is calculated by the multiplying the price of \$3.50/unit by Average Total Sales (Monthly) and Average Total Sales (Annually) for one scoop and two scoops purchased per visit.

^bEstimated Fixed Cost is the average rental price of \$1.73/ft² multiplied by 1,500 ft² space.

^cThe Variable Cost per Unit Sold is calculated by multiplying the cost per unit of \$0.20 by the Average Total Sales (Monthly) and Average Total Sales (Annually) for one scoop and two scoops purchased per visit.

^dEstimated Income Over Key Operating Costs is calculated by subtracting Total Cost from Estimated Revenue.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The overall objective of this study is to estimate the start-up costs and determine the expected demand for a gelato product by Petaluma residents and non-residents to estimate monthly sales, operating costs, and returns over operating costs for a gelato scoop shop. Demand is estimated using the consumer survey administered to residents in the Sonoma County area. The estimated monthly sales, revenues, and operating costs are based on the proportion of consumers who expressed a likelihood of purchasing a gelato product. The costs for rental space for the proposed scoop shop, and the costs of the key equipment required are developed based on secondary data from retail space lessors and equipment suppliers, respectively. Estimates of operating costs are developed using secondary data on the costs of inputs and an assumed product formulation.

Summary

The initial investment costs of a gelato scoop include the retail costs of a batch freezer, gelato display case, storage refrigerator, and blast freezer. The estimated total investment would equal around \$55,395 for just the essential equipment needed to manufacture gelato. However, this value does not include costs for building renovation, permits and licenses, and other costs associated with starting a business. The hypothesized investment was over estimated at \$200,000 and \$300,000 to create a small-scale gelato scoop shop. Total investments are estimated to be about \$150,000 less than hypothesized.

The consumer survey of Petaluma residents and non-residents found that 66% of Petaluma residents and 64% of non-residents expressed an interest in purchasing a gelato product priced at \$3.50/unit. Based on this estimated demand, a gelato scoop shop located in the downtown area could have a monthly sales volume ranging from 6,454 to 21,299 for one unit purchased per visit or 12,909 to 42,599 for two units purchased per visit. This is consistent with the hypothesis that more than half of potential target consumers in the Petaluma area would have an interest in purchasing a gelato product if priced between \$2.50/3oz and \$4.50/5oz cup. The sales volumes calculated from the 66% and 64% of residents and non-residents who expresses and

interest in purchasing a gelato product could generate estimated annual revenues between \$271,068 and \$542,178. Using the estimated monthly sales, the variable cost per unit sold would be \$0.20, equaling a gross margin of \$3.30 per unit sold. The estimated annual income over key operating expenses of ingredient costs per batch, packaging and materials, monthly rent, utility, repair and maintenance, and labor expenses could generate between \$229,178 and \$484,796, depending on the amount of units sold per visit. As stated earlier, operating costs were anticipated to be between \$75 to \$150 per 100 pounds of milk processed into ice cream and the estimates calculated were within this range. The estimated total production cost per hundredweight of milk processed is based on three 20-Liter batches needed to process one hundred pounds of milk and would yield about 540 units (4 oz scoops). The estimated operating costs of 100 pounds of milk processed would cost about \$116.83 for ingredients, packaging and materials, monthly rent, utility, repair and maintenance, and labor expenses. This estimate is consistent with previous studies of small-scale dairy processing enterprises.

Conclusions

Petaluma's artisanal market has grown rapidly, with new value-added businesses entering every year. Very little research exists in determining the feasibility of this approach, that is, to more fully evaluate if local dairies considering expanding into the value-added market is a successful business strategy. More specifically, the business model in question is how successful would a gelato scoop shop be by selling an "artisanal" product made from milk produced by its own cows? A gelato product is not currently offered by other value-added dairies in the area³ and would hopefully be unique enough to generate an adequate consumer interest to cover operating costs and generate profits. As mentioned earlier, Petaluma's consumers have a unique taste for original and "slow-made" foods and gelato should match well with their current demand for value-added products, particularly if this product were made using traditional methods, such as the ones found in Italian *gelaterias*. From the returns over operating expenses and investment costs found

³ However, a few other scoop shops and retailers sell gelato in the Petaluma area, and presumably, more of the current scoop shops could also do so.

using the estimated demand for a gelato product by the consumer survey, a gelato scoop shop appears to be a feasible business venture for this area. Based on the assumptions described above, the business could support generous profit margins based on the findings from this project. Even with less favorable assumptions, including lower sales or higher input costs, a *gelateria* in Petaluma appears to have sufficient profit potential to be further explored as a business investment.

The ultimate goal of this project was to collect key information, such as measuring demand and associated business expenses, to use in the creation of a business plan for the stated business venture. The values for demand and operating expenses listed in this project are rough estimates and a more detailed analysis would be appropriate for the further development of a detailed business plan. The business plan will help to further define the likely sales, business competition, and target market. Components of the next phase will include the development of the income statements over time, the balance sheet, and the cash flow to capture the costs for building construction and renovation, permit and licensing expenses, ingredient costs for flavors, and other expenses that are key to starting a business but were not included in this study. These will be used to generate pro-forma financial statements to forecast revenues, expenses, and profits to measure the financial viability of the proposed business venture. A more detailed analysis of current or potential competitors should also be developed as a component of the business plan for a gelato scoop shop in Petaluma.

Recommendations

For others interested in transitioning to or starting a value-added dairy operation, a similar ex ante analysis of key elements of a business plan could be undertaken. It also is recommended to examine value-added dairy operations that share similar characteristics, such as location, size, and product to allow for provide benchmarks for costs and profitability . This benchmarking could be undertaken through contacts with local business owners or equipment suppliers to solicit advice and ask questions. Processing seminars or specialized short courses can also be helpful in understanding manufacturing practices and product formulation as well as to estimate the financial feasibility of starting a value-added business. The Nicholson and Stephenson study (2006) referenced throughout this project was a valuable asset to help compare

financial data that is otherwise not available to the public. When contemplating a new business venture, it is recommended that extensive research into the industry and market be conducted before generating a business plan.

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APPENDIX A: CONSUMER SURVEY OF PETALUMA RESIDENTS AND NON-RESIDENTS

1. How frequently have you purchased ice cream or similar products, at the following locations in the past year:

(Check all that apply)

- a. Baskin-Robins
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- b. Cold Stone
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- c. Lala's Creamery
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- d. Powell's Sweet Shoppe
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- e. MoYo's Frozen Yogurt Lounge
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- f. Brain Freeze
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- g. Screamin MiMi's
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- h. Three Twins Ice Cream
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never
- i. Other _____
 - i. More than once a month
 - ii. Once a month
 - iii. Less than 6 months
 - iv. Never

This question would help to measure the amount of consumers who eat ice cream from a local scoop shop and how often. By measuring their likelihood of eating out it can be determined if these consumers would visit a Gelato scoop shop. This question would give me a more distinct target market rather than asking “how often do

you consume ice cream?” which would only measure ice cream consumption instead of likelihood to consume ice cream at a scoop shop.

2. The last time you visited [one need to identify which one or it will be confusing] of the locations above, about how long did you spend within the store? Would you say you,
 - a. Left immediately after purchasing, 5-10 minutes
 - b. Sat and consumed your purchase, 15-20 minutes
 - c. Up to 1 hour
 - d. Greater than 1 hour

By finding the average amount of time consumers spend in a scoop-shop, I can create an environment encouraging a longer visit time to help sell other products and increase daily sales.

3. How often do you dine-out in a typical month?
 - a. More than once a week
 - b. Once a week
 - c. Once a month
 - d. Less frequently than once a month

This question will help to estimate the amount of respondents that dine out and who will become the target market of a scoop-shop product.

The following is a list of features of ice cream people may look for when making a purchasing decision. Please indicate the desirability of each feature when you purchase ice cream. (5= extremely desirable, 1=least desirable)

- a. Organic
- b. Low in fat
- c. A good value for the price
- d. Rich tasting
- e. Original flavor [as in the sense of “novel” or just better than others for the same flavor?]
- f. A brand I recognize
- g. Locally-produced (produced in the Sonoma County area)
- h. Made with simple ingredients

By determining which traits are most desirable to respondents I can then produce a product that includes the top ranking characteristics to appeal to respondents wants and needs.

4. Have you ever heard of Gelato?
 - a. Yes
 - b. No
 - i. If YES, have you purchased Gelato in the past 6 months?
 1. Yes
 2. No

This question is to see how many responds have heard of and purchased Gelato. I want to see if Gelato would be a unique product to the Petaluma area based on its recognition by respondents.

5. Looking at the pictures below and your knowledge of the products, please rate the following based on how well you think the statement best describes each product, (5=Completely, 1= Not at all)



Ice cream \$3.00/ 4oz cup



Gelato \$3.50/ 4oz cup

- a. Low in fat
- b. Rich tasting
- c. Intense flavor
- d. Healthy
- e. Made with simple ingredients
- f. Inexpensive product
- g. Affordable

This question would help determine desired product characteristics to use in marketing strategies.

6. How likely are you to purchase the products above in a scoop-shop environment at the [designated price/unit? Need to be clear that this is the prices above] (Percent out of 100)
 - a. Ice Cream _____
 - b. Gelato _____

This will determine the percent of respondents who would most likely purchase Gelato for the price listed above to help estimate sales.

7. Generally, what comes to mind when you hear the term “artisan”?
 - a. _____
8. Have you ever purchased artisanal products made by a local dairy producer from the Sonoma county area? (Examples: cheese, yogurt, ice cream etc.)
 - a. Yes
 - b. No

The two questions above focus on buying locally produced products in the Sonoma county area. I want to see how many purchase and what their definition of “artisan” foods is in order to match a product to their liking.

Demographics

1. Are you
 - a. Male
 - b. Female
2. Where do you currently live? (Please list town County?) _____
3. In which of the following ranges does your age fall?
 - a. 18-24
 - b. 25-34
 - c. 35-44
 - d. 45-54

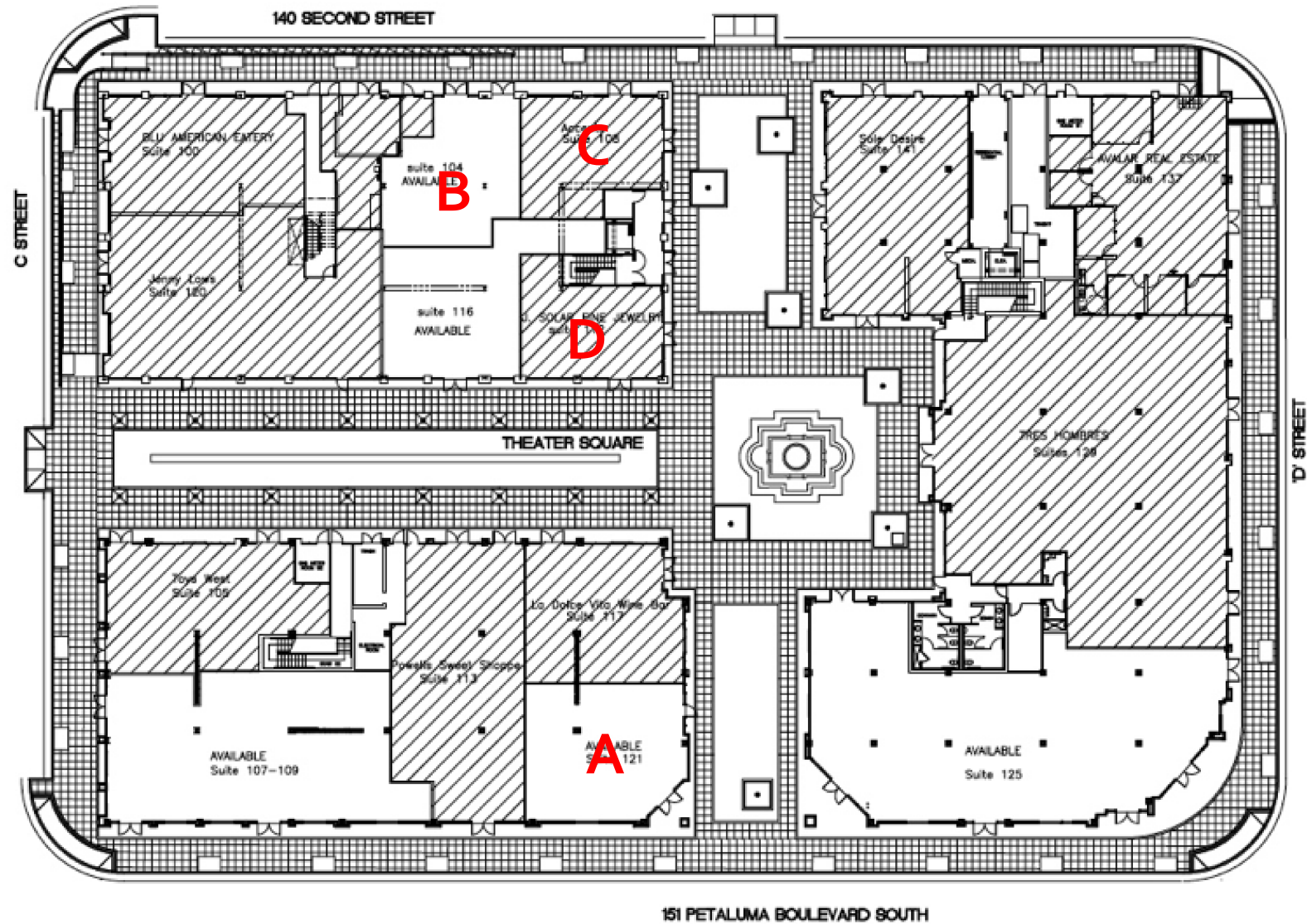
- e. 55-64
- f. 65+

4. How many people live in your household? _____
 - a. Are any of them less than 18 years old?
 - i. Yes
 - ii. No
5. What is the highest level of school you completed?
 - a. 11th grade
 - b. High school graduate
 - c. College graduate
 - d. Some college or technical school
 - e. Graduate or professional school
6. Are you currently?
 - a. Employed
 - b. Unemployed

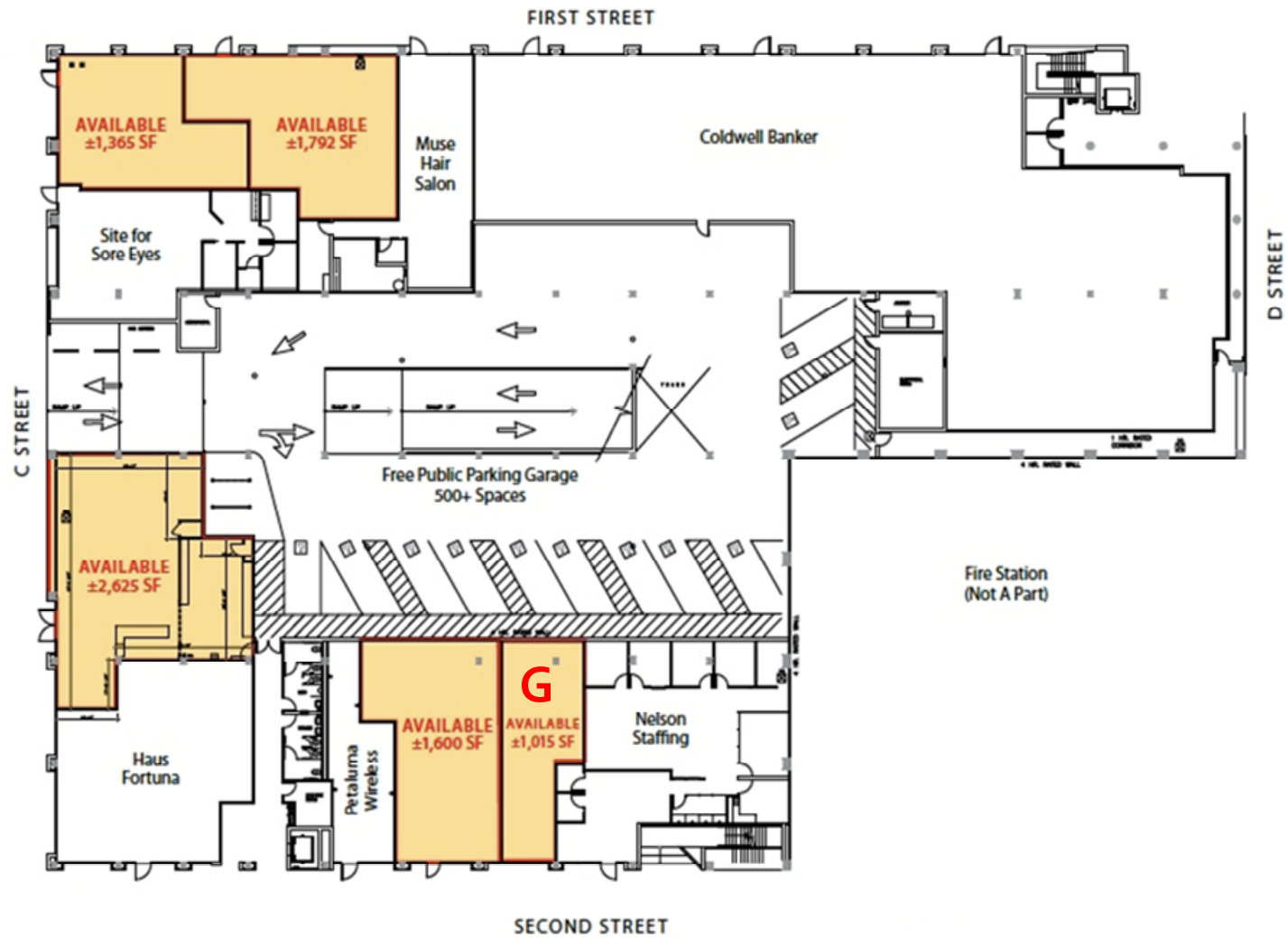
Could have students who are employed or unemployed, so have them circle all that apply?

7. In which of the following ranges does your yearly household income fall?
 - a. Under \$20,000
 - b. \$20,000 to \$49,999
 - c. \$50,000 to \$79,999
 - d. \$80,000 and above

APPENDIX B: COMMERCIAL SPACES AVAILABLE FOR RENT, THEATER DISTRICT UNIT A-D



APPENDIX C: COMMERICAL SPACES AVAILABLE FOR RENT, BASIN DISTRICT UNIT G



APPENDIX D: COMMERICAL SPACES AVAILABLE FOR RENT, BASIN DISTRICT UNIT E AND F



