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Conducting a Market Assessment: Estimating Market Size and Price for Small-Scale Food Tourism Enterprises

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Introduction

Assessing the potential market for new products or services is fundamental to the financial success and growth of a business. The first step in assessing market potential is to identify a target market. A target market is a group of consumers who have a need for the product/service and are willing to pay a profitable price for it. When defining a target market we start with consumer demographics such as age, gender, and income level. Second, we need to know their interests, hobbies, or concerns, called psychographics. And finally, we need to know why they need the product or service and any preferences they have regarding product characteristics. These three elements provide a picture as to the motivation of the target market to purchase the product or service. It is possible to have multiple target markets, usually due to location differences or alternate needs or uses for the product. Once a target market(s) has been identified, market research must be conducted to estimate the available customer base and the amount of the produce/service to be consumed; estimate a feasible range of prices (cover production costs), and assess consumer sensitivity to price changes.

Common market research methods include surveying existing customers if the business is currently functioning, conducting product/pricing

trials in suspect markets, or asking fellow providers (competitors). There are also secondary data resources available from the USDA, marketing firms, and Cooperative Extension.

Completing these steps prior to starting production will illustrate the potential for product success in the marketplace. A detailed business or marketing plan will also improve the opportunity or chances of securing capital funding and/or access to government grants and loans.

Estimating Market Size

Once a target market(s) has been identified, market research must be conducted to estimate the available customer base and their likely purchase amounts in terms of units purchased or total expenditures. In order to demonstrate the process of assessing market size, two farm tourism examples are given. The first example examines a strawberry U-pick operation which caters to local customers (with families) traveling for a day or short weekend, such as in-state visitors traveling within 100 miles of their home. The second example is an agritourism venture offering hay rides, farm stays, and similar experiences. The target market is destination tourists, or visitors on a long vacation to specific destinations, such as national and state parks, heritage sites, etc.

Local Tourists

If the operation plans to cater to local tourists, it must consider how large a radius it can draw from, in terms of how far customers will travel. The USDA Forest Service's National Survey on Recreation and the Environment found the average distance that U.S. individuals drove to visit a farm in 2000 was 80 miles (USDA Forest Service, 2003). Because this also included family members visiting farms that were in their family from several hundred miles away, most paying consumers will be drawn within a 50-mile radius unless no other farm visit alternatives are available to them. However, some areas in the West find the majority of their consumers travel over 75 miles to participate in U-picks, farm festivals, and related farm activities because no other closer alternatives exist for their metro area (Leones et al., 1994).



Farm market, Cuba, 2017

To determine the potential number of customers available within the applicable area, the population which falls into the identified target market demographics, interests, etc. must be estimated. The U.S. Census Bureau provides data related to population estimates, demographic factors, income, economic indicators, and more online at <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. The most recent U.S. census data can be searched online by state and by zip code. The information from a census search provides an indication of the ages of people in the area, household and family size, income, ethnicity, and more, all of which can provide producers with additional information about the characteristics of potential customers in the local and surrounding area.

To estimate how much product each customer might purchase, or how much they might spend per visit, examining current and historical consumption patterns can be helpful. Average annual U.S. consumption levels of several hundred foods are readily available from the United States Department of Agriculture's Economic Research Service (USDA-ERS) at [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx). For some foods, consumption level information dates back to the early 1900s. Keep in mind that ERS data is for standard, conventional products only and may not be illustrative of specialty or heirloom varieties, special production methods (organic, grass-fed, etc.), or products with other unusual characteristics.

Consider the example of a producer contemplating turning a portion of an existing strawberry operation into a U-pick strawberry operation on a one acre field, with expected production around 10,000 pounds. To calculate market size for this example, the producer must figure out what volume of strawberries would be necessary to supply all potential customers with a week's worth of strawberries. To calculate this, multiply the acres of strawberries to be grown by the predicted growth per acre and divide this by weekly fresh consumption per capita, which is the annual fresh consumption divided by 52, the number of weeks in a year. Equation 1 illustrates this calculation.

$$(1) \frac{(\text{Acres in operation}) * (\text{Output per acre})}{(\text{Average consumption per person/year}) / (52 \text{ weeks/year})} = \text{Market size required}$$

Using the numbers for this example, the proposed U-pick operation would require a market size of 64,935 consumers (1 acre X 10,000 pounds per acre / (8 pounds per year / 52 weeks per year)).

The producer must consider whether or not enough consumers can be found to meet the market-size requirement. It is also important to note that these numbers are for standard, conventional strawberries and the market for a differentiated product will likely be different.

In the U-pick strawberry example, the producer may be interested in targeting families as consumers. In this case, it would be helpful to know if nearby



Farm shop, UK, 2014

communities have enough families to make up a portion of the 65,000 customers needed to make the U-pick operation feasible. Let's say the U-pick operation is located near Bend, OR which has 26,073 families with an average of 3.5 persons each and hence a market potential of 91,255 customers (US Census, 2010). To determine what percentage of these families might visit the strawberry farm, we estimate 40% or 36,502 customers based upon the USDA Forest Service's National Survey on Recreation and the Environment, which found that 62 million Americans visited farms one or more times in 2000 (almost 30% of the population) (Barry and Hellerstein, 2004). Additionally, the agritourism industry has been growing at a rate of around 6% annually in Europe and North America" (Tchetchik, Fleischer, and Finkelshtain, 2008). Tourism also tends to be relatively more important for rural and urban counties in the West relative to other regions of the United States. If the customers purchased 16 pounds of strawberries a year, for freezing or canning for example, the operation would only need 32,467 customers, which is fewer than the estimated potential number of visitors.

Destination Tourists

For many rural areas, the local consumer base may not be large enough to support the minimum sales needed for success. However, many rural areas in the West are located between major urban centers and national or state parks that serve as a vacation destination for many foreign and out-of-state visitors. Estimating the potential size of these markets requires information on where visitors are coming from and returning to after their destination visit. As an example, consider the Grand Canyon

National Park (GRCA), which attracts around 6 million visitors annually (National Park Service, 2017). Seasonal visitation is another important item to consider, and seasonal visitation to GRCA varies greatly by season. The National Park Service reports that annual visits to GRCA by season are 15%, 30%, 36%, and 19% for winter, spring, summer, and fall (National Park Service, 2017).



Grand Canyon National Park, 2016

Table 1 shows where these visitors stayed prior to their trip to GRCA and where they went after leaving the park. Consider a business located between Page, AZ and GRCA. The number of GRCA visitors that would pass the business location each month would average 36,814. This figure was calculated as shown in Equation (2), by taking the total number of annual visitors and multiplying it by the average percentage of visitors who visit Page before and after visiting GRCA, divided by 12 to obtain the monthly average. This calculation shows that GRCA visitation ranges from a low of 14,000 visitors monthly during winter to a high of 62,000 visitors monthly during summer.

Imagine an agritourism business plan that requires a minimum of \$10,000 in sales each month to be viable, with expected average consumer expenditures of \$25 per person. The business would need to attract 1.1% of GRCA visitors on average to make the business plan work (this is calculated below in Equation (3), using the numbers from the example ($(\$10,000/\$25)/36,814$). However, taking seasonality into consideration, the business would need to attract 2.9% of winter and .65% of summer visitors to GRCA. If the percentage of GRCA

Table 1: Visitor Destinations Pre and Post Grand Canyon National Park

Destination	Before	After	Destination	Before	After
Flagstaff, AZ	17.5%	10.6%	St. George, UT	1.5%	1.4%
Williams, AZ	12.6%	7.3%	Scottsdale, AZ	1.4%	1.5%
Las Vegas, NV	9.4%	12.7%	Zion National Park, UT	1.4%	1.7%
Sedona, AZ	6.0%	6.7%	Jacob Lake, AZ	1.4%	<1%
Phoenix, AZ	5.3%	8.0%	Kingman, AZ	1.3%	2.1%
Tusayan, AZ	4.3%	2.4%	Tucson, AZ	1.2%	<1%
Page, AZ	3.4%	4.0%	Holbrook, AZ	1.1%	1.1%
Kanab, UT	1.9%	1.4%	Albuquerque, NM	1.0%	1.2%
Bryce Canyon National Park, UT	1.7%	2.1%	Cameron, AZ	1.0%	<1%

(Adapted from Tronstad, 2008)

$$(2) \frac{(\text{Total annual visitors}) * (\text{Average percentage of visitors to area})}{12} = \text{Average monthly visits}$$

$$(3) \frac{\text{Monthly sales needed} / \text{Expected sales per visitor}}{\text{Estimated monthly visitors}} = \text{Percentage of total visitors needed}$$

visitors needed to make this business plan work are not attainable, starting on a smaller scale and/or gearing up before the more heavily traveled summer months may help a venture like this succeed.

Estimating a Feasible Range of Prices

There are three major pricing approaches; cost-based, demand-oriented, and competition-oriented. However, they are not normally used independently. For example, if the price demanded in the market is less than the cost of production, then a cost-based pricing approach will not be profitable. Also, while the price of competitive products can be useful, it's optimal to design the product, service, etc., so that it is at least somewhat different from the competition, which will lead to higher market pricing.

Cost-Based Pricing

Cost-based pricing encompasses both cost-plus pricing (price equals total costs divided by the number of units) and mark-up pricing (a percentage is added to the cost of the product). Major drawbacks to cost-plus pricing are that the price isn't tied to consumer demand, there is no incentive to reduce costs, and the adjustments for rising costs are poor. Mark-up pricing is easy and can be used when there are too many products to estimate demand effectively, but it is not tied to demand and profits are biased by pricing.

Demand-Oriented Pricing

In demand-oriented pricing, the price is set at

customer value (or willingness to pay). Price skimming is a practice where consumers are initially charged a high price in order to pick up consumers who are willing to pay a high amount. Gradually, the price is reduced in order to pick up consumers who are more price sensitive.

Conversely, penetration pricing initially sets the price at a low level in order to capture market share, which discourages competition, and the price can be increased later when the product has become popular among consumers. Penetration pricing is very common for new food products.

Competition-Oriented Pricing

Competition-oriented pricing is ideal when similar products exist. Penetration pricing can be used to stimulate interests in or demand for the product by setting a price that is lower than the competing product. Parity pricing simply means that the price is set equal to competing products, and premium pricing sets prices higher than the competing product. Premium pricing is often used to signal quality to consumers and maybe an optimal strategy for high quality specialty products.

When conducting a competitive analysis consider:

- How many competitors operate in the market?
- Are competitors large or small? Near or far?
- What types and numbers of products do they sell?
- What pricing methods do they use?

Pricing Examples

Pomegranate Juice Production

A pomegranate grower plans to produce and sell pomegranate juice retail at specialty and health stores. The grower has estimated the cost of production for each 8 oz. bottle of juice at \$0.80 and wishes to add in a 20% profit to the cost of the juice, increasing the product price to \$0.96 per bottle. The grower will sell the juice to a wholesaler who will charge a 25% margin which then increases the cost to \$1.20 per bottle. The retailer will purchase the juice from the wholesaler and then sell it to the end customer for \$1.68 a bottle, after they have added another 40% margin to the wholesale cost. Hence, the cost of the pomegranate juice has doubled from the original cost of production. Each stage of the supply chain adds their own margin to the cost and the percentages used here are the current standard for each stage.

If the grower wishes to test market his or her juice at direct markets such as farmer's markets, stands, etc., it's important that he/she initially price the product close to that required by the end retail level, or \$1.68 a bottle. The pertinent question is if \$1.68 will be profitable in the market. The average price for an 8 oz. bottle of pomegranate juice in the US in 2013 was \$1.47 (ERS, 2013). This price is lower than the price required, but given that the intended market for this product is specialty stores where consumers may value the health or other benefits of this product, they may be willing to pay much more than the US average. Product packaging and labeling which appeals to the target market and clearly identifies the products characteristics may also improve pricing.

U-Pick Operation

Consider a strawberry U-pick operation where 10,000 pounds of strawberries are produced per acre with \$23,600 in revenue per acre, assuming a retail price of \$2.36 per pound (US average, ERS, 2013). If the average visitor purchases eight pounds, then the producer can expect \$18.88 in revenue for each person visiting the U-pick (8 X \$2.36). In order to determine feasibility, the producer should now consider the costs of production for the strawberries, as well as other costs such as visitor services, permits, etc. While calculating revenues and costs is relatively simple, many factors should be considered before making a pricing decision. For

example, visitors may purchase more strawberries if they are attending the U-pick as a family outing or if they are interested in canning or freezing a large number of berries. Additionally, visitors may be willing to pay more if the strawberries are a specialty item. For example, the organic price for strawberries was \$3.48 per pound (San Francisco Terminal, ERS, 2013).

Assessing Consumer Sensitivity to Pricing

Some determinants of consumer price sensitivity include the perceived substitution effect, the unique value effect, and the switching cost effect. The perceived substitution effect occurs when many substitutes exist and may cause consumers to be more price sensitive. The unique value effect is achieved through differentiation. Consumers will be less price sensitive if the product or service is unique. The switching cost effect occurs when consumers are reluctant to change from one product to another due to a perception of large switching costs. Consumers can be reluctant to change and seek out new information about a product.

Other determinants of price sensitivity include the difficult comparison effect, the price-quality effect, and the expenditure effect. The difficult comparison effect essentially means that consumers are less price sensitive when it is hard to compare products and services. The price-quality effect is an association between a higher price and higher quality. Consumers may be less price sensitive if they are quality sensitive. The expenditure effect occurs when consumers are more sensitive to price changes on large, expensive products rather than small, inexpensive ones. For example, consumers are more sensitive to changes in the price of meat compared to changes in the price of salt.

Finally the remaining determinates of price sensitivity include the fairness effect, inventory effect, and end-benefit effect. Consumers may be willing to pay more for a product if they feel the value or value-added provided is higher than competing products. They are also willing to pay more for items when they area in season. For example, the demand and price of beef is higher in the summer due to outside grilling. Consumer will pay more for products that protect the environment, preserve agricultural open space, and support family farms or provide some other end-benefit.

Food Product Pricing Resources

- Fresh and processed fruits and vegetables at <http://www.ers.usda.gov/data-products/fruit-and-vegetable-prices.aspx>
- Meats and poultry at <http://www.ers.usda.gov/data-products/meat-price-spreads.aspx>
- Organic foods at <http://www.ers.usda.gov/data-products/organic-prices.aspx>
- Drinks and meals away from home at <http://www.ers.usda.gov/data-products/quarterly-food-away-from-home-prices.aspx>

Additional Resources

- U.S. Census demographic data at <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- USDA's Economic Research Service (USDA-ERS) consumption data at [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/.aspx)
- Target marketing tools and guides from the Western Extension Marketing Committee at <http://valueaddedag.org/>
- Agritourism and food tourism product development and marketing at <http://diverseag.org/html/farm-and-food-tourism>
- Cooperative Extension Service, available in each state - Utah State University (<https://extension.usu.edu/>), University of Nevada, Reno (<https://www.unce.unr.edu/>), University of Arizona (<https://extension.arizona.edu/>), and Oregon State University (<http://extension.oregonstate.edu/>)
- Small Business Development Center (SBDC), available in each state at <https://www.sba.gov/tools/local-assistance/sbdc>
- National Sustainable Agriculture Assistance Program (ATTRA) at <https://attra.ncat.org/index.php>
- AgPlan at <https://agplan.umn.edu/>

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