The Emergent Vinifera Wine Industry in North Carolina: A Descriptive Overview

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Abstract

The North Carolina (NC) wine industry has grown rapidly over the past decade and is expected to grow even more as the worldwide wine consumption and export of wines rises. In the United States, the wine market has grown by 13.7 percent since 2002 in volume and by more than 15 percent in dollars as wine has progressed from being a beverage of an elite segment of the market to becoming a mainline beverage, taking its place alongside beer and liquor (MKF Research LLC, 2007; Oches, 2009). The Piedmont Triad Region is uniquely positioned to increase its presence in this industry. Of the 80 wineries in NC that are currently open to the public, nearly half are located in the Piedmont Triad Region. However, growing grapes and making wine is a long term commitment to a community, both financially and physically. The MKF Research report states that the capital-intensive nature of the winery and vineyard sectors is often underestimated, with new entrants to the industry at times unprepared for the extended cash requirements. In addition, only a few local institutions are familiar with the unique needs of the winemaking business.

In order to address factors that will impede growth in this nascent industry, it is important to identify the state of the industry and obtain management perspectives on the needs and challenges facing their operations. This study provides information that would help gain a better understanding of the business issues and needs related to the wine and grape industry in North Carolina. Data for this study was drawn from a census of 34 wine producers located in the Yadkin, Swan Creek, and the Haw River valley regions of North Carolina. Descriptive statistics using frequencies and means is used to provide a demographic overview of the industry and to identify the factors that wine producers perceive to be important in affecting their profitability.

Results from the study shows that most of the wineries share some common traits: they are small, relatively new to the wine and grape industry and grow grapes other than the traditional native Muscadine grape. Primarily, a majority of the wineries are family-based entrepreneurial businesses that have to behave like mini-conglomerates. These findings are consistent with a study conducted by Taplin and Breckenridge (2008).

Introduction

The North Carolina (NC) wine industry has grown rapidly over the past decade and is expected to grow as the worldwide wine consumption and export of wine rises. In the United States, wine has gone from being a beverage of an elite segment of the market to becoming a mainline beverage, taking its place alongside beer and liquor (Oches, 2009). The US wine market has grown by 13.7% since 2002 in volume and by more than 15% in dollars (MKF Research LLC, 2007). Thus North Carolina's wine and grape industries will benefit from America's steadily rising demand for wine. In fact, the overall growth potential for the wine and grape industry in North Carolina (NC) appears substantial and the state wine and grape industry is one of the fastest growing industries in the state. Since 2001, the number of wineries in the state has more than tripled. There are presently about 80 wineries and more than 400 vineyards covering about 1450 acres of land across the state and currently, North Carolina has become the 10th largest wine and grape producing state in the US (NC Department of Commerce, 2009).

Over the years, the industry has focused on growing muscadine grapes and vinifera grapes. Muscadine grapes, also known as Scuppernongs, are relatively pest resistant and thrive in the hot sandy conditions of the Coastal region. In contrast, several varieties of vinifera grapes are mainly planted in the Western and Piedmont regions of the state including the Appalachian Mountains that closely resemble the traditional mountain wine regions of Europe (Oches, 2009). The economic impact of this sector is also substantial. In a study performed by MKF Research LLC, 2007 and commissioned by the North Carolina Department of Commerce and other organizational entities, it was determined that there were $48 million in North Carolina wine sales in 2005. However, when one accounts for the 'ripple' effects of these sales throughout various related industries in the NC economy, the net economic effect on North Carolina for 2005 was $813 million and accounts for more than 5,700 jobs in North Carolina,

The Piedmont Triad Region is uniquely positioned to increase its presence in this industry. Of the 80 wineries in North Carolina that are currently open to the public, nearly half are located in the Piedmont Triad Region. The region is the home of two federal government designated Viticultural Area in North Carolina: *Yadkin Valley* and *Haw River area*. The other American Viticultural Areas (AVA) in North Carolina is the *Swan Creek*. However, growing grapes and making wine is a long term commitment to a community, both financially and physically. New vineyard plantings require at least three years to produce a full harvest, with another one to three years of aging for wine to be ready for sale. The MKF Research reports states that the capital-intensive nature of the winery and vineyard sectors is often underestimated, with new entrants to the industry at times unprepared for the extended cash requirements. The MKF study also shows that only few local institutions are familiar with the unique needs of the business of winemaking. Thus this nascent industry faces some challenging obstacles that will impede its growth if not addressed. In addition to the long gestation period before earning revenue from their cultivars, there are other challenges such as the uncertainty of the yield due to weather conditions, the complexity and multitude of activities that each winery is responsible for and the lack of ability to achieve economies of scale due to small size.

The objective of this study is to better understand the business issues related to the wine and grape industry in the Piedmont Triad region and to provide management perspectives on the needs and challenges facing their operations. The three basic questions we sought to answer were:

1. What is the profile of the industry;
2. What are the primary barriers to profitability in the industry and what could be done about them
3. What would a "Business Development Center" for the wine industry (e.g. NC Center of Viticulture and Enology at Surry Community College) need to know in designing its services?

The remaining of this paper is organized as follows: First we describe the research methodology and then present and discuss the bulk of the results from the survey findings about the wineries. Thirdly, we present management perception about a Business Development Center devoted to the wine industry. Finally we summarize our findings and recommendations.

Research Methodology

Data for this study was drawn from a survey of 34 wine producers located in the Yadkin, Swan Creek, and the Haw River valley regions of North Carolina. Thirty out of the 34 wineries responded to the structured questionnaire through telephone interviews. This represents a high response rate of 88 percent. The survey questionnaire was designed to seek information on the production, marketing and financial characteristics and needs of wine producers in North Carolina. The survey instrument specifically inquired about the factors that challenge the level of profitability of producers, the perception of producers on the need for a Business Development Center that would provide technical assistance to their business needs, and their willingness to use such a facility when it is established. In designing the survey questionnaire, the researchers incorporated information and comments obtained from key stakeholders in the industry such as representatives from: The North Carolina Winegrower's Association, North Carolina Wine and Grape Council, North Carolina Department of Agriculture, North Carolina Muscadine Growers, Surry Community College and economic development officials.

Descriptive statistics using frequencies and means were used to provide a demographic overview of the industry and the perception of wine producers on the establishment of a Business Development Center. To assess respondent's perception on factors that are important in affecting their profitability, the mean score of their ratings of the factors was use to rank the 18 factors beginning with the one with the highest mean score. Furthermore, statistical analysis procedure using correlation was used to establish relationships between selected variables.

Results and Discussion

Demographic Overview

Thirty-three percent of the wineries have been in business for less than 6 years and exactly half of the respondents have between 6 and 10 years of experience in the winery business. A majority of the respondents totaling 83 percent have less than ten years of business experience. Only 7%, representing two wineries out of the 30 have more than 15 years of relevant business experience (see figure 1). Thus overall, this points to a relatively young industry. Each of these wineries surveyed also own vineyards. Four major varieties are grown by the respondents. Seventy-seven percent of the wineries grow Vitis vinefera, 20 percent are Muscadine growers, 17 percent grow Vitis lambrusa and 7 percent cultivate Vitis aestivialis.
A majority of these wineries own less than 10 acres of grape farms. Fifty-seven percent of respondents have 5 to 10 acres of grapes under cultivation, eleven percent has less than 5 acres and 29 percent representing 8 out of the 28 wineries that responded to this item have more than 30 acres of grapes under production (Figure 2). The results support our conclusion that most of these wineries are small, relatively new with less experience and presently lack the ability to enhance profitability through economies of scale.

The Majority of wineries reported an annual production estimate of between 1,000 and 5,000 cases of wine while twenty-four percent produces more than 5,000 cases per year. Most of the wineries rely substantially on their own vineyards for grapes to produce the wine. Thirty-eight percent of respondents produce wine solely from grapes grown on their farm. Another 38% have between 76% and 99% of the grapes used in their winery from their own vineyard. Only 14% of the respondents use less than 50% of their own grown grapes in their wine operations (see figure 3).

In terms of capacity utilization, 62% of the wineries surveyed produce at more than 80% of their wine production capacity with none of the respondents producing below 50% capacity. This result indicates that most of the wineries produce their own grapes and are presently utilizing most of their production capacity. Sources of financing for these operations are mainly from owner's equity. Sixteen representing 53 percent of respondents self finance their winery and 13 wineries finance their business through the banks. Carolina Farm Credit provides financing for 4 of the wineries contacted.

Constraints on Profitability

This was the most salient question in the survey as is evident from its relative length as compared to the other questions in the survey. To analyze their responses, a 5-point Likert-type scale ranging from 1 (*much below average importance*) to 5 (*much above average importance*) was used to measure the opinion of respondents on the factors they perceive to be important in affecting their profitability. The mean score on the rating of factors that are barriers to the level of profitability of wineries is shown in Table 1. As is evident, *scarcity of time, bottling costs, cash flow and canopy management* are the four most important constraints identified.

This leads to a salient conclusion that time and financial management (including cost management) are the two most important issues to address if we hope to sustain a growth in profitability in the wine industry.

Scarcity of Time

Based on the initial analysis of the input from the survey respondents presented above, it is evident that scarcity of time represents a major obstacle to attaining and sustaining profitability. Further examination of the survey results indicates that the specific activities contributing to scarcity of time issues are concentrated in the *marketing* and *distribution* of the wine product. Thus, it was decided to study both these issues at length in addressing this important barrier to increased profitability. Analysis also revealed that the activities of wine production and marketing/sales, while contributing to the success of the whole, are in effect two different elements with different time and resource requirements.

The actual production of wine as a saleable product is dependent on the cultivation and harvesting of the grapes, transport, if necessary, to the winery, wine production, and the bottling and transport of the finished product. These processes in themselves require substantial time and financial resources.

The marketing element entails an entirely different set of capabilities and demands on time and financial resources. The specific activities addressed included the operation of gift shops, use of advertising, self-distribution of the wine, and the sale of wine to restaurants. Respondents who engaged in these marketing activities indicated that they considered the time spent on marketing activities to be a constraint to increasing their profitability. Closely related are the conclusions from the data analysis that cash-flow issues constituted an impediment to profitability by those wineries that participated in festivals and fairs, and self-distributed their wine products.

The very essence of the issue appears to be the assumption by winery owners that all tasks must be performed by the wineries themselves. It is common practice in business to identify those activities which are considered to be core competencies upon which the success and identity of the firm are based. Contributing activities which are necessary for the financial success of the firm but are not a core competency can and should be considered for outsourcing. Engaging another entity to perform selected contributing activities constitutes a trade-off between the time and financial resources spent performing non-core activities in-house and the financial resources spent to have those activities performed by an entity for which these activities are a core competency. The objective is to reclaim time which can then be focused on the core or essential activities of the winery operation.

Restaurants and gift shops consume a number of the winery's resources. One might try to make the case that financial and property resources do not consume time. However, the operation and maintenance of restaurants and gift shops does consume time resources. Tours and wine tasting opportunities which are often offered in conjunction with gift shops require a significant time investment by one or more individuals.

Advertising efforts require management's time to ensure that the message is conveyed correctly. Even though the actual media being used may not be owned or operated by the winery, management must devote time to the administration of the total promotional effort including paid and non-paid advertising, brochures, presence at festivals and fairs, and spotlight features in various trade, tourism, and other outlets.

Efforts by wineries to engage in distribution activities were also identified as contributing to the scarcity of time. One of the difficulties when engaging in self distribution is the relatively small quantity that is sold for the hours that are invested in the distribution process.

The same imbalance of quantity sold to time invested in the distribution process is encountered when selling product to individual restaurants.

Self-Distribution vs. Using Distributors

The next step in the analysis was to look for factors that best served to distinguish the wineries in terms of their marketing, distribution and also identified barriers to constraints on profitability. In that regard, we found that an important differentiator for grouping wineries was whether they *self-distributed* or used a *distributor*. Note that while some wineries used both channels to distribute their product, there was a tendency for wineries to use either one channel or the other.

To begin with, statistical analysis of the results indicate that owners of wineries that use *distributors* to distribute wine tend to be more likely to have 16 or more acres of grapes under cultivation (i.e., are relatively large) than do wineries not using this distribution method. Also, owners of wineries that use distributors are more likely to self-finance the operations of their wineries than do the other winery owners.

Next we found statistically significant differences in the marketing practices of these two groups of wineries. When compared to wineries that self-distribute, those that use distributors are more likely to sell product in grocery stores, use advertising as a promotional medium, promote product using festivals and fairs, and to promote product using wine clubs.

However, from the standpoint identified barriers to profitability, we found an important distinguishing factor between these two groups of wineries. Owners of wineries that self-distribute are distinguished from owners of wineries that use distributors with regards to the constraints to profitability that they feel are important. Wineries that use distributors indicate cash flow and financing to be a less important constraint to increased profitability that those that self-distribute. In fact, wineries using distributors indicate price competition for their product in retail stores as a more important constraint on increasing their profitability. This difference leads us to conclude from our study that the only factor which makes a difference in the salience of cash-flow and financing as an impediment to increased profitability is whether or not a winery uses a distributor; those that use distributors perceive these two factors to be less of a burden than those that self-distribute. Logically then, this would lead us to recommend that all wineries should favor the usage of distributors over self-distribution.

Financial Management

Given the result above, we next chose to answer the following question. Is it possible for the wineries to “grow” their way out of cash flow problems? In other words, can the wineries expect that the salience of cash-flow as a constraint on increasing profitability will decrease as they grow larger?

Correlation analysis shows that there is a significant positive correlation between acreage of grapes under production and number of crates of wine produced by the wineries. This implies that as NC wineries plant more grapes, their wine production has grown proportionately. Contrarily, size, years of experience and percent of own-grape used in wine production has no effect on the cash flow problem faced by the wineries. Therefore being larger did not necessarily imply a reduction in perception of cash flow as a problem. This leads us to conclude that the smaller wineries cannot hope to reduce cash flow problems by simply “growing” their way out of the problem.

A Business Development Center for the Wine Industry

As mentioned in the introduction a strategic research question in this study was to ask the following: If a “Business Development Center” for the wine industry were to be established, how would it be perceived and used by the winery industry and what would the center need to know in designing its services. The question is far from hypothetical; in fact such a center is already being established as the NC Center of Viticulture and Enology at Surry Community College in Dobson, NC.

Usage of the Business Development Center

Among the wineries surveyed, 64% of the respondents recognize the need for a Business Development Center and are willing to regularly use resources from the Center to improve their marketing efforts. Thirty-two percent will use it occasionally and 4 percent will not use the facility at all. However, respondents also commented that a definite decision on the use of the Center will depend on the associated costs to them. There are major concerns with the location of the facility, since this will determine the costs of transportation and also the hours of travel time, which will in turn take producers away from their daily operations. Several of these operations are family run businesses, mainly managed by husband and wife with occasional help. As indicated from the survey results, scarcity of time is already a major concern and therefore it will be difficult for most of the wine producers to stay away from their operations for any considerable length of time. Finally, the wineries expressed concern about the amount of user fees to be charged and larger and more experienced wineries expressed concern about the level of expertise of the Center staff.

Characteristics of Wineries that are most likely to use a Resource Center

Another focus of this study was to identify those features that help identify wineries that have needs for specific resources of a resource center dedicated to helping the wine industry in this region. The study results indicate that management at wineries who *self-distribute* wine are relatively more interested in the resources of a center that concern domestic and export market development. This contrasts with managements of wineries who use *distributors*, who are relatively less interested in using the resources of the Center and who tend to experience fewer pressures related to financing.

Of all the eighteen factors that were tested for being possible constraints to profitability, managements' *scarcity of time* was the one that was associated with managements' need for the *greatest number of resources* offered by the prospective Center. Additionally, (a) the greater the *percentage of grapes that are grown in-house*, and (b) the greater the extent that winery owners *train their own employees*, the greater is the winery's need for a wide variety of services to be offered by the prospective Center.

Finally, the greater winery management's perceived *importance of financing* as a constraint to increased profitability, the greater is the likelihood that management would be a *regular user* of the resources of the Center.

Educational Subjects/Topics of Interest to Wineries

The interested wineries were also asked that if they used the Center, what subjects areas/issues/topics they would like the Center staff to develop and offer; see figure 4 for a summary of the results. As is evident, *domestic distribution and marketing* and *records keeping* received the highest ranking from winery representatives on the type of assistance they will like the proposed Business Development Center to offer. The second highest ranked need is *management skills* and *identification of cost. Price setting and profitability analysis* is the next on the scale. The last two identified needs are assistance on *brand management* and *export distribution and market*.

Conclusion and Recommendations

The NC wine industry is relatively nascent as evident from the results of the study. Most of the wineries share some common traits: they are small, relatively new to the wine and grape industry and grow grapes other than the traditional native Muscadine grape. Primarily, a majority of the wineries are family based entrepreneurial businesses; indeed, they are unique entrepreneurial businesses that have to behave like mini-conglomerates. These findings are consistent with a study by Taplin and Breckenridge (2008). Most of the wineries grow some or all of their grapes, produce their wine, develop a marketing niche for their wine, operate a retail winery, engage in distribution activities, operate an internet business, are involved in cross-marketing sales and are also involved in tourism. This is especially challenging for small family operated businesses. As a result, there is a need to help the industry learn efficient ways to not only conduct business and streamline business operations but also find new resources than can help them become more productive.

Effective Time Management and Financial Management surfaced as the two primary issues that overwhelmingly represent the salient business needs of the industry. The identification of scarcity of time as an obstacle to achieving the level of financial success sought by winery management indicates that wineries have a need to focus more on core activities such as wine-making and less on non-core activities. Non-core activities such as marketing and distribution are perceived to be hindering the ability of the winery to engage in the more "important" activities which contribute to profit. The results of this survey indicate that winery management recognizes that time has value. In order to make the most of the time available, management must make decisions as to whether to perform functions in house or to engage another person or entity to perform selected functions. The challenge facing wineries is to determine what functions, and who should perform them. The obvious answer is to hire an outside entity or to engage additional personnel to perform those functions. There are possibly more creative solutions that individual wineries may chose to implement. No matter what the choice, the time is a valuable resource that must to be optimized in order to increase profitability. It is therefore not surprising that about 64 percent of wineries are willing to use the services and resources of a Business Development Center if it is located within a reasonable distance from their operation. The important factor that seems to make a difference on management perception about cash flow and financing problems is whether or not they use a distributor. Thach and Olsen (2006) states that wine quality, dependability of the producer, price, and personal relationship between the winery and distributor are the most important factors in determining whether a distributor will carry a specific wine in their sales portfolio.

To meet the needs of the Industry as identified in this study, a Business Development Center for the wine industry such as the NC Center for Viticulture and Enology should develop an accessible (possibly online) curriculum directed primarily towards addressing the development needs of the *small wineries* who are engaged in *self-distribution*. The curriculum and outreach services of the Center must address the following subjects/areas, with special attention paid to the entrepreneurial nature of these enterprises:

1. Time management techniques and strategies, including possibilities/opportunities for outsourcing
2. Cash flow management, including accounting (book-keeping), cost identification and management)
3. Marketing and distribution including market development, price setting and profitability analysis, brand management.

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Figure 1. No. of Years Wineries have been in Business

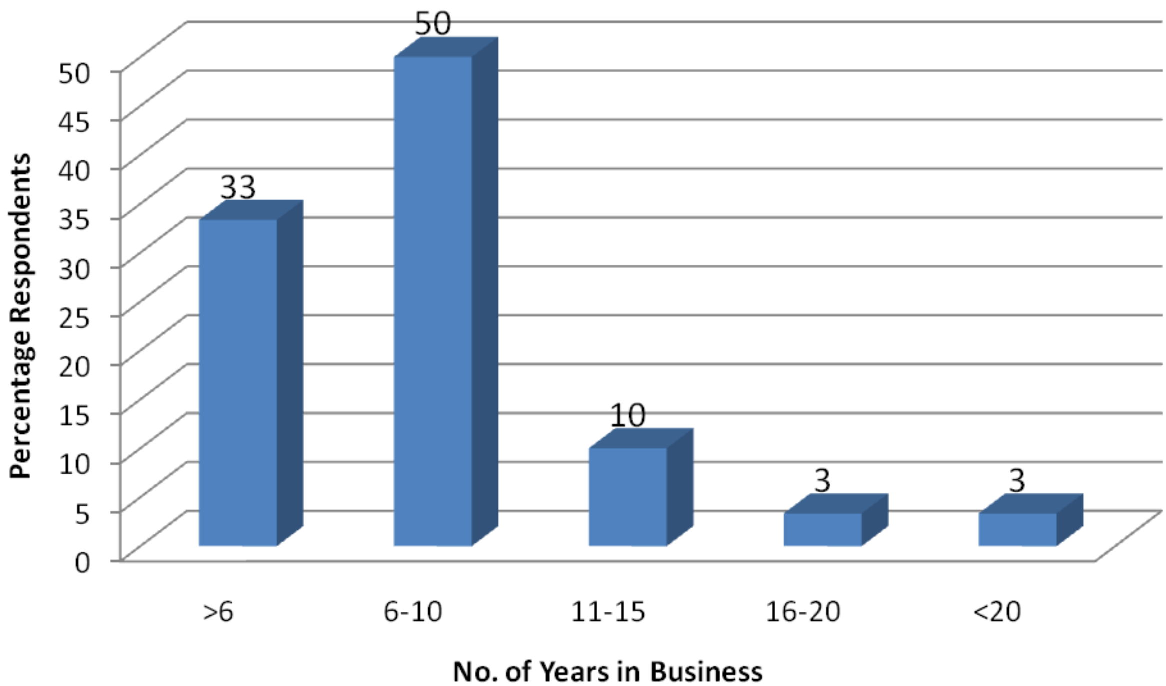

Figure 2. Size of Vineyards

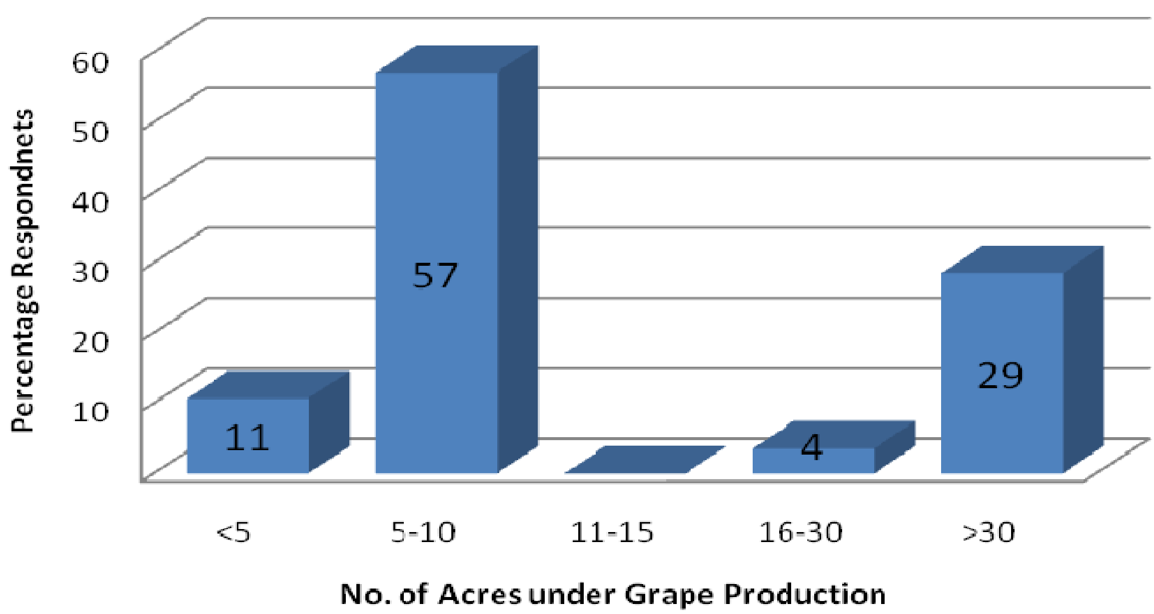

Figure 3. Percentage of Own Grown Grapes Used in Wine Production

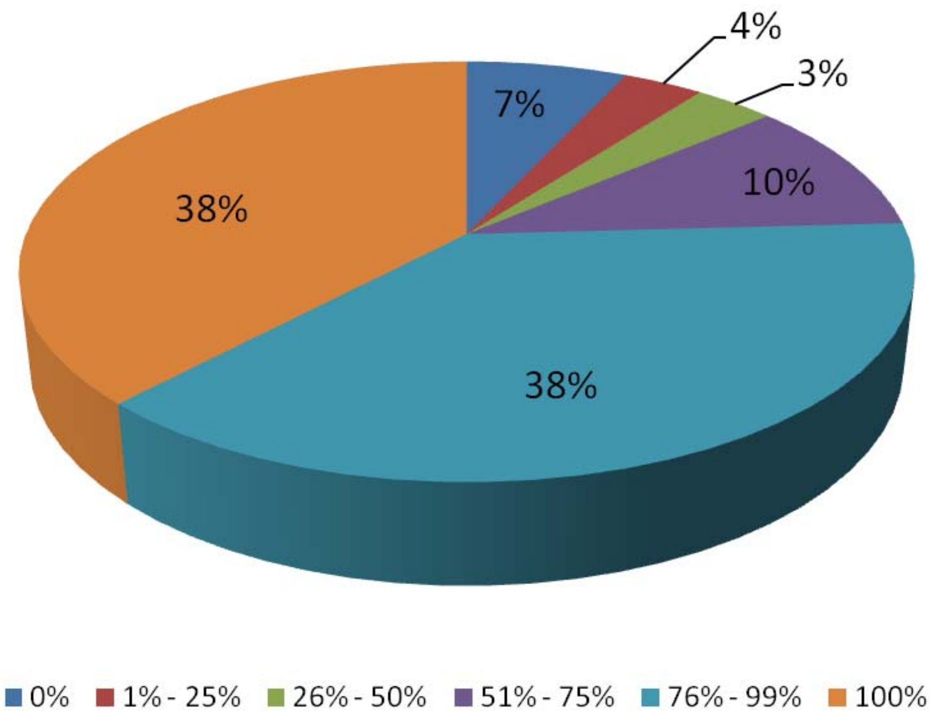

Table 1. Ratings of Barriers Enhancing Current Level of Profitability

Factors	Opinion Rating (Mean Score)
1. The scarcity of your time	3.62
2. Bottling costs	3.03
3. Cash flow	3.00
4. Canopy management, Pesticide (materials + application) costs	2.86
5. Grape cultivation equipment costs	2.55
6. Wine production equipment costs	2.48
7. Financing	2.36
8. Limited opportunities to distribute your wine	2.35
9. Price competition for your product in retail stores	2.21
10. Skilled labor costs	1.90
11. Vine costs	1.90
12. Relationships with grape producers	1.86
13. Availability of quality grapes	1.79
14. Availability of information resources	1.59
15. Wine Production Capacity	1.46
16. Availability of managerial personnel	1.45
17. Availability of labor	1.41
18. (Un)availability of mobile bottling lines	1.41

Figure 4. Ranking of Desired Subjects/Issues/Topics