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An Analysis of Marketing Preferences of Sultana Producers in Turkey in Terms of Sustainable Market Power

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Abstract

Sultana is among the most important products in Turkish economy in terms of being a principal export crop and many producers' occupations. Although sultana's share in export is high, Turkey aims having a sustainable place in the international competition. In this framework; common attitude of all the actors and institutions in the sector towards attaining competitive advantages are required both in national and international markets. A sustainable competition power calls for paying a special attention to producer preferences. It is of importance to reveal and analyze that sultana producers' preferred market and particularly the reasons for those preferences.

This study deals with analyzing tendencies of the conventional and organic sultana producers to supply their products to domestic and international markets with respect to some alternatives such as high price, guaranteed payment and marketing easily by means of Analytical Hierarchy Process. Data of the study was gathered from randomly chosen 300 sultana producers in Manisa where sultana production is very widespread. Scores from Analytical Hierarchy Process are analyzed by Tobit for doing a deeper analysis of the producer preferences.

KEYWORDS: Analytical Hierarchy Process, Conventional Sultana, Market Preference, Organic Sultana, Tobit.

Introduction

Turkey is one of leading countries in the world at viticulture due to the advantages such as ecological conditions and richness of gene sources. Grape has always played an important social and commercial role in Western Anatolia. In the Aegean Region of Turkey, like Izmir and Manisa since the 18th century the major grape production is sultana, which is a variety of seedless type.

Sultana is the most important among the other traditional varieties. Raisin known as Sultana or Sultanina in the world is produced by drying under sunshine after dipping harvested grapes into a

solution Altindisli and Isci (2005).

Turkey is the biggest Sultana producer and exporter in the world as well as the biggest exporter of raisins and ranks among the top 5 largest grape grower countries. Turkey provides %31 of raisins exportation of the world and exported to 87 countries in 2009 FAO (2012).

Both the conventional and organic raisins have big proportion in exportation of agricultural products. A sustainable competition in both conventional and organic sultana requires a special attention to producer preferences. The main purpose of this study is to reveal and analyze the market preferences of sultana producers particularly the reasons for those preferences. In this framework, both conventional and organic raisins farmers are examined. This research is to be considered original for the raisin farmer's preferences for domestic and foreign markets in Turkey.

In a sector or international market, some firms or countries may have a significant market share in production, exportation or importation of some products (Hatirli et al., 2010). It is known a few countries are competing for the world Sultana raisin market. Turkey is the top Sultana raisin exporter in the world and has power in some extent to affect world sultana raisin market. This study examines how to keep Turkey's leading position in the international market with the contribution of raisin farmers, not purely the market power of Turkey in Sultana. In other words, the study attempts to establish a link between the market power and farms in terms of sustainable market power.

Sultana raisin is grown in the vineyard area on the fertile ground of Gediz basin that is in Manisa province in the western Anatolia. Thus this study was carried out in Manisa which has the largest vineyard areas and grape production in Turkey. Main data of the study was collected by survey from 300 conventional and organic grape growers who are settled in Manisa province.

We considered that raisin producers prefer domestic and foreign markets for their products. In this context, we offered producers three alternatives for these markets; high price, guaranteed payment and marketing easily. In the study area, Analytical Hierarchy Process (AHP) model is used to determine domestic and foreign market preferences of farmers. AHP model assessed farmers' market preferences in terms of high price, guaranteed payment and ease of marketing.

Data and Methodology

The study was conducted in Manisa province that is biggest sultana producer province of Turkey. The total vineyard area was 73 191 hectares in 2011. 22 563 families were involved with grape production in the province. In the same year, the total grape production was 1 336 194 tons. Of the total grape production; 985 456 tons were raisins (246 364 tons of raisins) and 350 738 tons were table grapes. 87.49 percent of the raisins and 15.46 percent of the table grapes produced in Turkey were produced in the Manisa province (Manisa Directories of Food, Agriculture and Livestock, 2011).

In the study, three district of Manisa which were most important in conventional and also organic sultana production were selected. The survey population of this study was composed of conventional and organic sultana producers separately in these three districts. At the second stage, thirteen villages were selected on the basis of conventional and organic sultana production potential after interviewing some people and institutions who were expert of this subject.

Farmers preferences are based on the data collected in the study area. The data used in this study come from a survey of 300 farmers in Manisa province of Aegean Region. 155 of these are growing conventional sultana, 140 of these are growing organic sultana and 5 producers have both of them. Survey was based on a standardized and pre-tested questionnaire. A pre-tested questionnaire consists of both open ended and closed ended questions and was used to collect data in face to face interviews. The survey questionnaire had subsections: The demographic and socioeconomic information, farm and marketing information and also the perceptions of the farmers. Data collection is conducted out from October through December 2012.

Then, the AHP was applied to determine domestic and foreign market preferences of farmers related to high price, guaranteed payment and marketing easily. The Kruskal Wallis test was used for comparing the means of the priorities of criteria and preferences.

The AHP was developed by Thomas L. Saaty (1980). This model is one of the most commonly applied multi-criteria decision making techniques Thomas (2011). The AHP is a decision-support tool to cope with complex multi-criteria problems. The method helps to structure and analyze decision problems by breaking down the complex problem in a hierarchic order and by employing pair-wise comparisons of its elements to determine the preferences among the set of alternatives. The first stage of AHP is problem structuring. The AHP decision problem is structured hierarchically at different levels, each level consists of a finite number of decision elements. A basic hierarchical model consists of a goal, criteria and alternatives. The top level of the hierarchy represents the overall goal, while the lowest level is composed of criteria and all possible alternatives. The second stage is assessment of local priorities. The relative importance of the decision elements is assessed indirectly from comparison judgments during the second step of the decision process. The third stage is calculation of global priorities. The last step of the AHP aggregates all local priorities from the decision table by a simple weighted sum.

The AHP model was built by taking into account the current domestic marketing structure in sultanas and policies to keep Turkey’s leading position in international market. The AHP model for the farmers’ preferences is explained in Fig.1. In this study, two markets criteria were analyzed. The first criterion was domestic market. The second criterion was foreign market. The alternatives of the hierarchy were the factors affecting the preferences, which are high price, guaranteed payment and marketing easily.

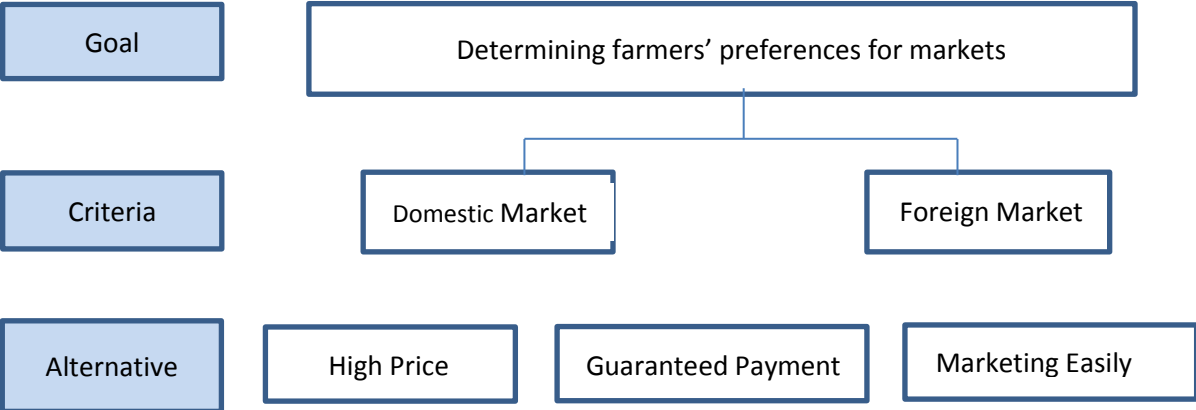


Figure 1: Problem Definition of AHP Model.

According to the law of demand, if the price of a product is high, normally more of a product will be supplied. Hilmi (2006) stated that the higher price would also encourage the farmer to extend the area under cultivation and provide the crop with more or better quality inputs so that a higher yield can be obtained. Especially value-added products such as raisin can bring a better price to farmers. Thus **high price** is an important alternative for raisin farmers.

Correspondingly farmers want to sell their products immediately and easily because of characteristic of agricultural product. Sultana farmers also want to sell their sultana immediately. So storage facility is costly and risky especially for small farmers. Thus **marketing easily** is also an important alternative for raisin farmers.

Because payment mechanism is so different for farmers, sometimes farmers are not paid for their products or payment is not made immediately after selling. Even the price is low, guaranteed payment still can be preferred by farmers to reduce market uncertainty. It is stated in some studies that farmers prefer cash and immediate payment Blandon et al. (2009). According to Westlake (2005), farmers normally sell for cash because they do not trust traders to pay them at a later date. In the case of small-scale producers, traders know that farm households usually have an urgent need for cash and can be persuaded to accept a reduced price in return for immediate payment.

Farmers face payment problems in Turkey also. Some buyers do not pay the farmers for their products. Sometimes raisin producers also are not paid for their products or paid delayed. This problem is also stated in some studies: Sahin (2006), Sayılı and Civelek (2012), Aydin (2007). **Guaranteed payment** for our model is thought as an appropriate alternative.

Furthermore, in this study, scores calculated for farmers' preference were separately regressed using a censored Tobit model with farm and farmer-specific explanatory variables in order to identify the sources of preference. The reason for using the Tobit model is that the preference measures are

censored regression model Greene (2003) and Ramanathan (1997). AHP yields continuous scores between 0-1. In Tobit models it is possible to estimate with left and right censoring. We used Tobit model in which AHP scores for each criterion and option lying between 0 and 1 which are censoring values are depending variables.

Results

The demographic characteristics of the sultana farmers who participated in the study are summarized in Table 1. While the average age of the farmers surveyed is approximately 50; average education is seven years and also household member is four. Duration of the engagement to the agriculture of farmers is 30 years and grape growing experience is 26 years (Table 1). While average of farm size is 10.4 hectares, average farm sizes in conventional and organic vineyards are approximately 10.3 and 10.0 respectively. Average sizes of vineyard are also 4.9 hectare and 3.8 hectare in conventional and organic vineyards.

Table 1. Characteristics of farmers and farms surveyed

| | Mean | Minimum | Maximum | Std. Deviation |
|------------------------------------|-------|---------|---------|----------------|
| Age | 50.07 | 22.00 | 83.00 | 12.575 |
| Education (year) | 6.59 | 2.00 | 18.00 | 2.615 |
| Household member | 4.31 | 1.00 | 12.00 | 1.859 |
| Farming experience (year) | 30.09 | 2.00 | 61.00 | 13.332 |
| Experience in grape growing (year) | 26.22 | 2.00 | 61.00 | 13.263 |

Dealer and exporting firms have big shares in marketing channel of sultana for both conventional and organic. Raisins Agricultural Sales Cooperatives Union (Taris) follows these middlemen. Selling of commodity exchange set the selling of dealer and exporting firms. Raisin has traded in both domestic

and export markets. Some dealer is also dealing with export markets. Taris Sultana Raisins Union, which is one of the most long-established agricultural cooperatives of Turkey, is sultana buyers and exporters of Turkey. About half of all raisin producers are members of Taris production (USDA Foreign Agricultural Service, 2012). However, in general, Taris purchases around 15-20 percent of total. Raisin is traded in commodity exchange. Taris is required to buy raisins from its members but members are free to sell to other buyers and they often do.

The organic sultana producers work with contract farming. Kenanoglu (2003) stated that raisin producers market their products to the firms which they have signed a contract with. Moreover, within the scope of this contract the organic raisin producers are not obliged to give their products to the firm with which they have an agreement and the firm does not have to get all of the products. When the firm does not buy all or some of the products, the producer will have to market his product like a conventional product. As can be seen above expression, notwithstanding organic sultana producers work under contracted farming, they have same problems with the conventional producers in marketing. Therefore it is not so big difference between conventional and organic producers' preferences and the factors influencing these preferences.

The preferences of farmers with regards to factors such as high price, guaranteed payment and marketing easily affecting export and domestic market were determined. Table 2 shows the AHP results. Last column in Table 2 indicates the farmers' average preferences for each criterion. This notation of results is also used in a similar study by Thomas (2011).

According to the model results, there is no statistically significant difference between domestic and foreign markets preferences of conventional producers. However organic sultana producers prefer the domestic market (0.5141) by a small margin and there is a statistically significant difference between domestic and foreign markets. Results for alternatives are shown on the last row Table 2. When it is assessed in terms of domestic and foreign market alternatives, guaranteed payment is preferred as the best alternative. The average scores of guaranteed payment are 0.4940 in the

conventional sultana and 0.5293 in the organic sultana. High price and marketing easily were assigned preference scores very close for both conventional and organic producers. There is a statistically significant difference between these alternatives.

As mentioned before, sultana producers are not paid for their product or paid delayed. Then model results strengthen this situation.

Table 2. Average priorities of AHP alternatives by criteria

| Conventional Sultana | | | | |
|-----------------------------|------------|--------------------|------------------|---------|
| | High Price | Guaranteed Payment | Marketing Easily | Average |
| Domestic Market | 0.2429 | 0.4801 | 0.2770 | 0.5085 |
| Foreign Market | 0.2189 | 0.5204 | 0.2607 | 0.4915 |
| Average | 0.2377 | 0.4940 | 0.2683 | |
| Organic Sultana | | | | |
| | High Price | Guaranteed Payment | Marketing Easily | Average |
| Domestic Market | 0.2529 | 0.5165 | 0.2306 | 0.5141 |
| Foreign Market | 0.2114 | 0.5460 | 0.2427 | 0.4859 |
| Average | 0.2346 | 0.5293 | 0.2360 | |

A Tobit model was used to reveal the factors influencing farmers' preferences regarding places to sell sultana. Table 3 and Table 4 show the results of the Tobit model for conventional and organic sultana respectively.

In conventional grape growers, total farm size has significant negative impact on marketing easily. Big farms can market their products anyways. Number of plots has significant negative impact on high price and significant positive impact on marketing easily. Number of vineyard plots has significant negative impact on marketing easily. These producers consider the high price and marketing easily as less important factors. While age has significant negative impact on foreign market and high price,

has also significant positive impact on domestic market and marketing easily. This result shows us that old conventional raisin producers prefer domestic market and marketing easily. They want to feel safe and do not want to take any risks in marketing. While farming experience has significant positive impact on foreign market and high price, has also significant negative impact on domestic market and marketing easily. Experienced producers prefer foreign market and high price.

Table 3. AHP Tobit estimates for conventional sultana

| Variable | Dependent variable | | | | |
|--------------------------|---------------------------|--------------------------|---------------------------|---------------------------|-----------------------------|
| | Domestic M. | Foreign M. | High Price | Guaranteed Payment | Marketing Easily |
| Const | 0.3366 (0.2268) | 0.6634** (0.2268) | 0.3446** (0.1163) | 0.4681** (0.1292) | 0.1873* (0.1095) |
| Pilot size | -0.0007481 (0.001040) | 0.0007481 (0.001040) | -0.0001906 (0.0005335) | -0.0004228 (0.0005924) | 0.0006134 (0.0005021) |
| Total farm size | -0.0002185 (0.0003986) | 0.0002185 (0.0003986) | 0.0002816 (0.0002045) | 0.0001820 (0.0002270) | -0.0004636** (0.0001924) |
| Number of plots | 0.003182 (0.01028) | -0.003182 (0.01028) | -0.009997* (0.005274) | -0.001781 (0.005856) | 0.01178** (0.004964) |
| Total vineyard area | 0.0008964 (0.001229) | -0.0008964 (0.001229) | -0.0002947 (0.0006307) | -7.749e-05 (0.0007003) | 0.0003721 (0.0005936) |
| Number of vineyard plots | -0.03110 (0.02072) | 0.03110 (0.02072) | 0.007624 (0.01063) | 0.01427 (0.01180) | -0.02190** (0.01000) |
| Age | 0.006546* (0.003716) | -0.006546* (0.003716) | -0.003159* (0.001906) | 8.339e-05 (0.002117) | 0.003076* (0.001794) |
| Education | -0.001916 (0.01197) | 0.001916 (0.01197) | 0.001444 (0.006143) | -0.008017 (0.006821) | 0.006574 (0.005782) |

| | | | | | |
|-----------------------------|--------------------------|-------------------------|--------------------------|-------------------------|---------------------------|
| Household member | 0.02145 (0.01810) | -0.02145 (0.01810) | -0.0002117 (0.009288) | 0.003092 (0.01031) | -0.002881 (0.008742) |
| Farming experience | -0.007863* (0.004285) | 0.007863* (0.004285) | 0.001593 (0.002198) | 0.002653 (0.002441) | -0.004246** (0.002069) |
| Experience in grape growing | 0.003979 (0.003441) | -0.003979 (0.003441) | 0.0006953 (0.001765) | -0.002322 (0.001960) | 0.001627 (0.001661) |
| N | 160 | 160 | 160 | 160 | 160 |
| lnL | -58.2 | -58.2 | 48.59 | 31.84 | 58.28 |

Standard errors in parentheses

* indicates significance at the 10 percent level

** indicates significance at the 5 percent level

In organic grape growers, plot size has significant negative impact on guaranteed payment and significant positive impact on marketing easily. These organic sultana producers consider the guaranteed payment and marketing easily as less important factors. While age has significant negative impact on foreign market and has significant positive impact on domestic market. Older organic raisin producers like conventional producers prefer domestic market for more familiar. Experience in grape growing has significant negative impact on guaranteed payment. It can be said that experienced producers in grape growing do not have such problems related paying.

Table 4. AHP Tobit estimates for organic sultana

| Variable | Dependent variable | | | | |
|-----------|------------------------|-------------------------|--------------------------|----------------------------|---------------------------|
| | Domestic M. | Foreign M. | High Price | Guaranteed Payment | Marketing Easily |
| const | 0.2166 (0.2196) | 0.7834** (0.2196) | 0.2467** (0.1207) | 0.6265** (0.1328) | 0.1268 (0.1025) |
| Plot size | 0.001452 (0.001195) | -0.001452 (0.001195) | 1.831e-05 (0.0006568) | -0.001652** (0.0007226) | 0.001633** (0.0005575) |

| | | | | | |
|-----------------------------|---------------------------|--------------------------|---------------------------|---------------------------|---------------------------|
| Total farm size | -0.0001580 (0.0003337) | 0.0001580 (0.0003337) | -0.0002392 (0.0001835) | -1.648e-07 (0.0002019) | 0.0002394 (0.0001557) |
| Number of plots | 0.003428 (0.009103) | -0.003428 (0.009103) | 0.008020 (0.005005) | -0.002342 (0.005507) | -0.005678 (0.004248) |
| Total vineyard area | -0.001755 (0.001681) | 0.001755 (0.001681) | -0.0006219 (0.0009244) | 0.0009771 (0.001017) | -0.0003552 (0.0007846) |
| Number of vineyard plots | 0.004333 (0.01954) | -0.004333 (0.01954) | 0.002171 (0.01074) | -0.0008336 (0.01182) | -0.001337 (0.009116) |
| Age | 0.006135* (0.003621) | -0.006135* (0.003621) | -0.0003807 (0.001991) | -0.002045 (0.002190) | 0.002426 (0.001690) |
| Education | 0.004019 (0.01388) | -0.004019 (0.01388) | 0.001658 (0.007631) | -0.006930 (0.008396) | 0.005273 (0.006477) |
| Household member | 0.009355 (0.01708) | -0.009355 (0.01708) | 0.004339 (0.009388) | -0.006382 (0.01033) | 0.002043 (0.007968) |
| Farming experience | -0.005489 (0.003417) | 0.005489 (0.003417) | 0.0007537 (0.001879) | -0.0004804 (0.002067) | -0.0002733 (0.001594) |
| Experience in grape growing | 0.003466 (0.003231) | -0.003466 (0.003231) | -0.002159 (0.001776) | 0.004183** (0.001954) | -0.002024 (0.001508) |
| N | 145 | 145 | 145 | 145 | 145 |
| lnL | -43.94 | -43.94 | 42.79 | 28.94 | 66.57 |

Standard errors in parentheses

* indicates significance at the 10 percent level

** indicates significance at the 5 percent level

Conclusions

Analysis of producer preferences and their priorities regarding any part of supply chain gives rise to an opportunity of having clues to diagnose the shortcomings and how to improve them. For this aim, sultana producers' preferences for domestic and foreign from the standpoint of some characteristics were probed. An AHP model was built and scores obtained from this model were analyzed by Tobit model. The analysis revealed that sultana producers have no specific preference between domestic and foreign market. They peculiarly pay much attention to selling their sultana with guaranteed payment due to bad experience with this in the past. Particularly older farmers would like to be confident of the money which should be paid. This implies that some deterrent regulations are needed for such kind frauds by the buyers. Sultana producers need to be informed of the market conditions such as domestic and export prices, competitors, dealer composition and level of domestic consumption so that they can increase their sultana production. In this manner old producers with bad experience may gain back their trust and young producers will be encouraged to produce more for foreign market.

As stated by Meer and Cornelis (2005), there are market failures that bear relatively heavily upon small-scale producers and that can put them in a disadvantageous position for participating in coordinated supply chains. Small-scale farmers are often poorly organized, and risks and transaction costs of involving them in coordinated supply chains are relatively high. Markets that provide small-scale farmers with information and technology are often incomplete and inefficient. Fairbairn also highlighted (2003) that the new farmer, like the new economy, will have to be more knowledgeable and information-savvy, more networked and interlinked than before, and certainly more vertically coordinated along the value chain.

Sultana raisins are generally grown on small farms. It is need to strengthen the role of producer organizations like Taris or independent producer' organizations for these small-scale sultana growers.

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