Consumer Preferences for Olive Oil in Tirana, Albania

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Abstract

Increase in urban middle income consumers along with consolidation of the retail sector has created changes in olive oil consumption preferences in Albania. The objective of this study is to inform stakeholders in the olive oil industry about consumer preferences. A Conjoint Choice Experiment (CCE) was used to design the survey and latent class approach used to analyze the data. The results show a strong preference for domestic olive oil and small niche markets that cater to specific consumers. The study also shows a gap between preference and reality that needs to be addressed by the stakeholders in the olive oil industry.

Keywords: olive oil, Albania, Latent Class, Consumer preference, conjoint choice, experiment

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Introduction

In recent years, Albania has seen a rapid change in its citizens' consumptive behaviors and life styles due to economic growth, improvement in the standard of living, fast urbanization and trade liberalization in the country. One consequence of this has been the gradual segmentation of the food and beverage market, similar to what has been seen in other transitioning countries (Berisha and Mara 2005, World Bank 2007). The transition from a centrally planned socialist economy to a market oriented economy has also given rise to a larger urban middle-income class of consumers. The food demand from the emerging urban middle-income consumers, combined with the gradual consolidation of the retail sector and the recent establishment of the first supermarket chains, has strong implications for the agrifood industry, which in the past has been almost exclusively based on price (Leonetti et al. 2009).

The transitioning economy, the new class of consumers and the change in the food retail sector has added to the change in consumer behavior and consumption preferences. Particularly, the demand for olive oil, an important component of the Albanian diet, has also been changing in recent years. In fact, olive oil contribution to Albanian fat consumption has been increasing in the last two decades. In 2003, Albanians consumed approximately 4.21 kg of olive oil per capita per year, though this is still less than the popular olive oil consuming countries such as Greece (15.62kg), Italy (13.14kg) and Spain (11.72kg) (Grigg 2002, FAO 2003).

Accompanying the increase in olive oil consumption in Albanian, domestic production of olive and olive oil production has also increased. In the 1980s, Albania produced an average of 3,000 tons of olive oil per year. By the 1990s, the average annual production of olive oil rose to almost 4,000 tons per year. In recent years, olive tree stock has exhibited an approximately 5% increase per year, though annual olive oil production varied substantially, ranging from 3,454 to 8,979 tons of olive oil (see Table 1). The variations are due to changes in yield and importing olives from neighboring countries.

Table 1. Olive Trees, Olive Oil Production and Imports in Albania

Items	2004	2005	2006	2007	2008
Olive trees in production (000)	3,429	3,488	3,603	3,728	4,179
Olive output (tons)	58,700	30,160	40,195	28,120	56,200
Olive oil production from processing plants (tons)	4,036	3,454	4,985	8,979	5,634
Olive Oil Imports (tons)	1,110	906	842	930	1,075

Source: International Olive Oil Council 2009

Studies have shown that olive oil production is profitable in Albania but does not have a comparative advantage globally (Mane and Kapaj 2009, DSA 2008). However, even though Albanian olive trees in production have been increasing, on average, in recent years, Albania continues to import significant amounts of olive oil. These imports are mainly from neighboring countries such as Italy, which supplies about 90% of Albania's imported olive, the rest is from Greece and other European Union (EU) countries. Albania imports about 1,000 tons of olive oil per year (see Table 1). The import levels in recent years have been oscillating in response to the

domestic olive oil production as low production means more imports to meet demands with a lagged time of a year. Although domestic production has increased after the drop in levels, imported olive oil levels still show an increase. Recently the upswing in imports suggests higher consumption and/or preference for imported olive oil.

Based on the importance of the olive oil in the diet of Albanians and the historical role in supplying the domestic demand, the olive oil industry has been targeted as a top strategic sector for growth and development by the Albanian government. The rationale for prioritizing the olive oil industry for growth is as follows: (1) olive production is a traditionally produced crop, (2) there are many farmers growing olives (40,000 farms); and (3) potential for export (MAFCP 2007).

As the country continues to increase production, knowledge of consumer preferences for olive oil could greatly assist in the domestic olive oil marketing and import substitution. Recent studies on the Albanian olive oil industry have focused on the analysis of supply (DSA 2008; Skreli et al. 2009) with a paucity of studies on consumer preferences for olive oil. Understanding consumer preferences has become more important for olive and olive oil industry stakeholders as that knowledge could help in synchronizing production and marketing of these products. The olive oil industry and the Albanian government could benefit from a study on consumer preferences of olive oil attributes, as this information could assist in the development of possible strategies for market segmentation, suitable pricing, product development and standardization and adequate promotion and advertising.

Therefore, the purpose of this research is to determine consumer olive oil preferences. Specifically, the objectives are to determine the product characteristics or attributes that consumers prefer and to determine consumer types based on their preferences. To accomplish those objectives, this study will design and conduct a conjoint choice experiment survey and analyze the data using latent class analysis to determine olive oil attribute preferences and significant socio-demographics of olive oil consumers by class.

Methodology

Conjoint Choice Experiment (CCE)

The conjoint analysis derives from the theoretical basis established by Lancaster (1966) in which the utility of a product is based on the bundle of attributes it has. CCE was developed by Louviere and Woodworth (1983) and originally used in the market research and transport literature (Hensher 1994). Recently, it has been used as a method for conducting surveys for consumer preferences for environmental amenities such as woodland caribou habitat enhancement in Canada (Adamowicz et al., 1996), preferences for deer stalking trips in Scotland (Bullock et al., 1998), and remnant vegetation in Queensland (Blamey et. al. 1999).

The utility of any good is derived from the characteristics of the good rather than the good itself (Lancaster 1966). The CCE is based on the idea that a good can be described by its attributes or characteristics and by the levels of those attributes. There are several advantages to using CCE over traditional conjoint analysis. First, the design of sets of attributes can mimic a change in the product, allowing measurements of tradeoffs that respondents quantify by choosing one attribute

over another. In addition, the survey design allows for the estimation of monetary values when including price as one of the attributes. Furthermore, the method allows researchers to quantify the product attribute's utilities based on the choices the respondents made. Finally, CCE uses discrete choices for choosing among pairs of product profiles, rather than rating or ranking ten or 12 product profiles at one time, thereby reducing respondent's fatigue as is often seen with traditional conjoint analysis.

There are two disadvantages to using CCE. The first is that respondents repeat similar tasks of choosing a profile from a set of two profiles. The respondent may "catch on" and give biased answers. The recommended number of choice set is between 12 – 18 tasks or choice sets (Johnson and Orme 2003), but to minimize that possibility of bias, the number of choice sets was reduced to only 12 per respondent in this study. The second disadvantage to CCE is that there are no incentives to encourage people to participate in the study. However, olive oil is a staple part of the Albanian diet and respondents are more likely to participate if they are familiar with the product. Overall, the advantages of CCE far outweigh its disadvantages.

There are five stages for developing a conjoint choice experiment (Green and Wind 1975, Cattin and Wittink 1982, Halbrendt et al. 1991). The stages for this study are shown in Table 2.

Table 2. Stages for a Conjoint Choice Experiment and Analysis

Stage	Description
1. Selection of attributes	Attributes were selected based on a focus group input and an extensive literature review
2. Assignment of attribute levels	Attribute levels were determined by literature reviews and by focus group comprised of experts in the field
3. Construction of choice sets	The SSI Web program using the Random Method that incorporated orthogonal array was used to create the profiles in the survey.
4. Data Collection	Survey was conducted via face-to-face interviews over the course of 3 days
5. Data analysis	Data is analyzed with latent class approach using Latent Gold 4.0 software

The first and second stages of CCE are to determine the attributes and their levels, respectively. Different studies have used several techniques for determining the most relevant product attributes such as focus group interviews, in-depth interviews or means-end chain analysis (Krystallis and Ness, 2005). For this study we chose to determine the attributes through extensive literature review on choice criterion for observing consumer preferences (Siskos et al. 2001, Sandalidou et al, 2002, Goering 1985, Ga'zquez-Abadand Sa'nchez-Perez 2009) and a focus group of experts in the field. As a result, five attributes were chosen for olive oil: (1) type, (2) origin, (3) place of purchase, (4) taste, and (5) price. For each attribute, levels were chosen through a focus group comprised of experts in the field. The selected attributes and levels are shown in Table 3.

Table 3. Olive Oil Attributes and Their Levels

Attributes		Levels	
Type	Extra Virgin	Virgin	Normal
Origin	Import	Domestic	
Place of Purchase	Shop (Local)	Supermarket	
Taste	Bitter	Pungent	
Price/ ltr (Albanian Leks)	400	650	900

The third stage of designing the CCE involves construction of choice sets. Olive oil product profiles are constructed by selecting one level from each attribute and combining across all attributes. In this study, there are five attributes, of which three have two levels (origin, place of purchase and taste), while type and price have three levels each. Thus, the number of possible profiles totaled 2x2x2x3x3 or 72. A complete factorial design would use all the 72 profiles, which is impractical for respondents to evaluate at one time. The most commonly used method of constructing fractional factorial design in conjoint measurement is the orthogonal array. Orthogonal arrays build on Graeco-Latin squares by developing highly fractionated designs in which the scenario profiles are selected so that the independent contributions of all main effects are balanced, assuming negligible interactions (Green and Wind 1975). From all possible profiles, pairs of profiles were randomly developed and separated into 7 sets with 12 pairs each using software developed by Sawtooth, Inc. Having only 12 pairs to evaluate from ensures the duration of the surveying exercise does not adversely impact a respondent's responses through biased responses as mentioned above.

For each of the seven versions of the survey there are two parts. The first part consists of choosing the 12 choice sets and the second part is additional questions that include the socio-demographic details of each respondent. A sample choice set is given in Table 4.

Table 4. Example of a Pair of Olive Oil Profile Scenarios

Attributes	Product A	Product B
Type	Extra Virgin	Normal
Origin	Domestic	Import
Place of Purchase	Supermarket	Shop
Taste	Bitter	Pungent
Price/ltr (Albanian Leks)	900	400

The fourth stage is the data collection stage during which the surveys are conducted and data are collected from the respondents. The survey was conducted at the Tirana Municipality in June 2009. Tirana is the capital of Albania and the biggest urban market in the country, consisting of 30% of Albania's population. (INSTAT 2001). The capital's population is extremely diverse in terms of culture, religion and income.

The interviews were mainly conducted in the food retail market at "Pazari i Ri" in the central part of Tirana, which is visited by a wide variety of consumers. The market is divided into three areas according to three different levels of quality/price product combination. Both professional sellers and local farmers sell their products there. It also attracts people from the entire inner part of the city with different consuming behaviors (systematic and sporadic-weekend purchasing) and purchasing potentials (low, medium and high-income level). The focus group organized to determine the location of the study confirmed that this location is appropriate to obtain a representative sample for the Tirana Municipality as it was the only location that fits the criteria of surveying a wide variety of people within the context of monetary and time constraints for data collection. Figure 1 shows the location of the market "Pazari i Ri", as well as the distribution of poverty levels and population, in the Tirana Municipality.
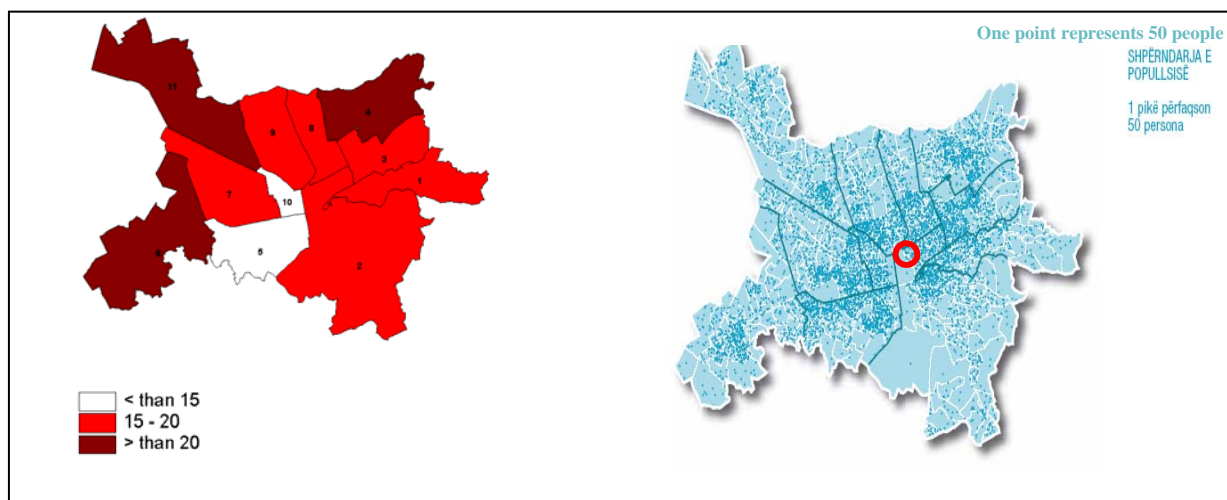
Figure 1. Distribution of population by mini-municipalities of Tirana and the poverty level
Source: 2001 Census and LSMS 2002; *Red color map represents % of people under the poverty line; *Red circle shows Pazari i Ri location

Table 5 shows the socio-demographic comparison of Tirana's population with the sample population. In terms of gender and age, the sample is comparable to that of Tirana's population although there are some differences in terms of education. Disadvantaged people, such as people with lower incomes or lower education levels, are less likely to participate in surveys (Turrell et al. 2002). Hence, the higher education levels are found for the respondents as compared to Albania's population. Income was not included in the socio-demographics table, although it was included in the analysis. There was no available comparison of respondents' income levels. According to the survey, the majority of the survey respondent's household income earned was between 30,000 leks to 80,000 leks per month ($300 to $800 USD).

Table 5. Socio-demographic Comparison of Survey Respondents with Tirana's Population

		Respondents	**Tirana Population**
		(%)	**(%)**
Gender	Female	48.04	50.14
	Male	51.96	49.86
Age	18-24	9.80	12.89
	25-30	13.24	7.66
	31-35	10.78	10.74
	36-40	14.22	11.40
	41-45	13.24	11.75
	46-50	10.78	10.48
	51-55	8.82	8.59
	56-60	7.84	6.67
	61-64	1.96	6.54
	65 and up	9.31	13.34
Education	Elementary	9.31	13.92
	High School	46.08	58.97
	College	44.12	24.62
	Other	0.49	

Source: Institution of statistics, Republic of Tirana. Available at: http://www.instat.gov.al/

According to Orme (2005), the sample size is determined using the following formula (nta / c ≥ 500) for the latent class analysis (Johnson and Orme 2003) where *n* is the number of respondents, *t* is number of tasks per respondent, *a* is the profiles per task , and *c* is the maximum number of attribute levels. After factoring in the study's time and budget constraints, a total of 204 face-to-face surveys were conducted, thereby meeting the sample size requirements according to the above formula.

Latent Class Analysis (LCA)

After the data are collected, the fifth and final stage of a CCE is the latent class analysis. LCA is used to evaluate respondent choice behavior by capturing both observable attributes of choice and unobservable factors found in the heterogeneity of individuals' behavior (Greene and Hensher 2003; Milon and Scrogin 2006). In other words, respondents are placed into distinct classes (groups) based on their choices when answering the conjoint choice experiment questions. In LCA studies, the probability of making a specific choice among a pair of product profiles is based on the perceived value of product attributes, and covariates of respondents (such as respondent's age and education) (McFadden 1974). The value respondents placed on product attributes and respondents' socio-demographic factors were major factors evaluated in this study. In a conditional logit model, the probability (P_{ni}) that individual n chooses profile i can be represented by the following equation (McFadden 1974):

$$(1) \qquad P_{ni} = \frac{\exp\left(\eta\, X_{ni}\right)}{\sum\limits_{h=1}^{I} \exp\left(\eta\, X_{nh}\right)}$$

Where η denotes a scale parameter, usually normalized as 1.0. X_{ni} is the deterministic component that is assumed to be a linear function of explanatory variables. Equation (1) can be represented as equation (2) for LCA:

$$(2) \qquad P_{ni} = \frac{\exp\left(\eta\beta Z_{ni}\right)}{\sum\limits_{h=1}^{I} \exp\left(\eta\beta Z_{nh}\right)}$$

Where Z_{ni} are explanatory variables of X_{ni}, including a profile-specific constant, product attribute of profile *i*, and socio-demographic factors of respondent *n*. β is a vector of estimated parameter coefficients.

In a latent class analysis, respondents are sorted into *M* classes (groups) in terms of individuals' choice of observable product attributes, and the unobservable heterogeneity among the respondents. The value of estimated parameter coefficient β is different from class to class because this parameter coefficient is expected to capture the unobservable heterogeneity among individuals (Greene and Hensher 2003). Then the choice probability of individual *n* belong to class *m* (m = 1, …, M) can be expressed as equation (3):

$$(3) \qquad P_{ni \mid m} = \frac{\exp\left(\eta_m \beta_m Z_{ni}\right)}{\sum\limits_{h=1}^{I} \exp\left(\eta_m \beta_m Z_{nk}\right)}$$

Where η_m is the class-specific scale parameter and β_m is the class-specific estimated utility parameter.

To begin the analysis, the number of classes needs to be determined using the Bayesian Information Criterion (BIC), the most commonly used criterion to assess model fit in LC analysis (Magidson and Vermunt 2003). The model with the lowest BIC value is the best in terms of number of classes when using the maximum likelihood estimation. The lowest BIC for this data was a 6-class model therefore the model with 6 classes were chosen for this study.

As mentioned above, the probability for individual *n* in class *m* choosing product profile *i*, P(*i*), is measured using two types of characteristics: (1) product attributes, including type (T), origin (O), place of purchase (P), taste (Tt), and price (C); and (2) individual socio-demographic factors, including gender (G), age (A), education (E), income (I), knowledge of different types of olive oil (K) and household size (H). The preference model is specified in equation (4).

$$(4) \qquad P\,(i) = f\,(T, O, P, Tt, C, G, A, E, I, K, H)$$

Qualitative attributes generally are presented by 'part-worth' or dummy variable specification in marketing studies (Halbrendt et al. 1995). In this case, where the attributes are qualitative, we used effects-coding specifications for the variables. These variables include: type, origin, place of purchase, taste, gender, education and knowledge of different types of olive oil. Price, age, income and household size attributes are treated as continuous variables.

Results

Results of the model's parameters estimated for each of the six classes using the Latent Gold software are reported in Table 6. LCA assumes that not all the same parameters in each class have the same signs or significance due to the heterogeneity of the respondents. Each of the six classes is described in detail below. In regards to type, extra virgin olive oil is perceived as better quality than the other olive oil types due to its processing method and perceived health benefits associated with the type. The other attributes are specifically based on consumer preference without other levels being "better" than the other.

Class 1 has significant attributes all at the 0.05 level. The significant parameters are extra virgin olive oil, not normal type, domestic (+) and price (+) olive oil. This group can be considered a domestic, high quality preference group who is willing to pay more for their preferred olive oil.

Class 2 is not significantly influenced by type of olive oil when purchasing, but by the origin, place of purchase, and its taste and price. This group significantly prefers domestic (+) and not imports (significant at 0.05 level). They prefer to purchase their products at supermarkets and prefer pungent to bitter olive oil taste, (significant at the 0.10 level). The price (+) of olive oil is also significant (0.05 level). Thus, this class strongly prefers locally produced olive oil and is willing to pay higher prices at supermarkets for olive oil that are pungently flavored.

Table 6. Parameter Estimates

Attributes	Class1	Class2	Class3	Class4	Class5	Class6	Std. Dev
TYPE							
Extra Virgin	0.130**	-0.181	0.023	0.007	0.535	9.488**	2.071
Virgin	0.012	0.065	0.358	0.161	0.017	7.174**	1.556
Normal	-0.142**	0.116	-0.380	-0.168	-0.552	-16.662**	3.620
ORIGIN							
Import	-0.12**	-2.097**	1.703**	-0.300	-0.281	-0.271	1.075
Domestic	0.12**	2.0972**	-1.703**	0.300	0.281	0.271	1.075
Place of Purchase							
Shop	0.003	-0.223*	0.015	0.357	-0.202	-0.513	0.182
Supermarket	-0.003	0.223*	-0.015	-0.357	0.202	0.513	0.182
TASTE							
Pungent	-0.011	0.278*	0.021	-2.544**	2.276**	-0.182	0.875
Bitter	0.011	-0.278*	-0.021	2.544**	-2.276**	0.182	0.875
PRICE	1.138**	2.918**	2.971**	3.428**	2.113**	-1.886	1.237

**Significant at the 0.05 level
*Significant at the 0.10 level

Class 3 has two significant olive oil attributes: origin and price, both of which are significant at the 0.05 level. This group strongly prefers imported (+) and higher priced oil (+). Taste, type and place of purchase have no impact in their oil purchases. Class 3 is a group, which is willing to pay higher prices for imported olive oil.

Class 4 is significantly affected by the attributes taste and price. This group prefers bitter olive oil (+) over pungent and higher priced olive oil (+), both significant at the 0.05 level. This group is a bitter taste-preferring group, which is willing to pay higher prices for their preferred olive oil.

Similar to the previous class, taste and price are also the significant attributes for Class 5. However, they prefer pungently flavored olive oil (+) to bitter (-). They also prefer higher priced olive oils, with both attributes significant at the 0.05 level. This is a group with a preference for pungent olive oil and is willing to pay higher prices for their preferred olive oil.

Class 6 is statistically significant only for olive oil type. They have a strong preference for extra virgin olive oil, followed by virgin olive oil, but did not like normal olive oil (all significant at the 0.05 level). This group can be considered a quality only olive oil group, as none of the other attributes was considered significantly influential in their decision.

Over all, the positive (+) sign for price from most of the classes of respondents was unexpected as it is assumed that people should prefer lower price. However, consumers often associate higher prices with better quality (Volckner and Hofmann 2007). The perceived quality associated with price may spur people to choose higher priced olive oils. This is similar to conjoint choice surveys for wine and olive oil for Italian consumers, where price had high significance on the consumer choices (Scarpa et al. 2004; Cicia et al. 2002).

Spain, Italy and Greece are well-known exporters of olive oil to Albania. It was expected that the preference would be for these imported olive oils. However, Albania also has a long history of cultivation and production of olive oil, which may account for the high preference for domestic olive oil (Classes 1 and 2), although some (Class 3) prefer imports. This is similar with surveys of Greek consumer behaviors (Krystallis and Ness 2005, Matsatsinis et al. 2007). It was also expected that people would choose extra virgin olive oil as their preferred type and this was true for Classes 1 and 6, which were the only classes that showed significance for this type. There was no sign expectation for olive oil taste as it varies depending on consumer preferences, and this was shown with classes 2 and 5 versus class 3 preferring opposite tasting oils. Place of purchase was not significant for any of the classes except Class 2 (0.10 level) and no specific sign was expected for this attribute as it is also a matter of preference and convenience for the consumer.

Relative Importance (RI)

The results of the estimated parameters above showed the significant attributes for each of the classes. However, using RI analysis, we show which attribute among all the attributes is the most important for each of the classes (Table 7). The method of estimating the RI is detailed by Halbrendt et al. (1995). The relative importance of attribute i (RI_i) is measured by the ratio of the range of utility change estimates of different levels of the attribute i (UR_i) over the sum of such ranges for all attributes of the product $\sum UR_i$:

$$(5) \qquad RI_i = 100 \times \frac{UR_i}{\sum_{i=1}^{n} UR_i}$$

Table 7. Estimated Relative Importance of Attributes

Attribute	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
			(Percentages)			
Class Size	47.61	26.44	8.34	7.12	5.46	5.03
Type	16.19	3.53	10.27	3.24	12.47	**87.26**
Origin	14.32	**49.88**	**47.39**	5.90	6.45	1.81
Place of Purchase	0.34	5.29	0.42	7.02	4.64	3.43
Taste	1.26	6.60	0.59	**50.09**	**52.20**	1.21
Price	**67.88**	34.70	41.33	33.75	24.24	6.29

Classes 1 and 2 combined make up about 74% of the total number of respondents (Table 8). The rest of the 26% is split between the remaining four classes. Class 1 has the largest class size with about 48% of respondents, followed by Class 2 at 26%, Class 3 at about 8%, Class 4 at 7%, Class 5 at 6% and Class 6 at 5%.

Class 1 chose price (67%) as the most important attribute followed by type (16%) and origin (14%). The significance of high price is reflected in its relative importance for this group. Though this group prefers locally produced olive oil, they place more importance on price than on the other two significant attributes. This is contrary to Greek consumers (Matsatsinis et al, 2007) and similar to French and Italian consumers (Siskos et al. 2001, Scarpa and Del Giudice 2004, Cicia et al. 2002) who place price as the one of the most important factors in purchasing olive oil.

Class 2 is also a group that prefers higher prices for locally produced olive oil, but almost 50% of the class chose origin as the most important attribute, followed by price at about 34%. Minimal importance was given to taste (7%), where the product was purchased (5%) and the type of olive oil (4%). In other words, this group strongly prefers local olive oil, which is similar to an Albanian food preference survey in which more than 80% of consumers preferred domestic products (CRSSD 2005 on olive oil and Civici et al., 2004 on wine).

Like Class 2, the origin of the product (47%) and its price (41%) were the two most preferred attributes in Class 3, though in this class imported olive oil was preferred to instead of domestic. So this group prefers imports and willing to pay higher price for them.

In the Classes 2 and 3, origin and price were the most important attributes, but in Classes 4 and 5 taste is the most important attribute (50% and 52%, respectively), followed by price (34% and 24%, respectively). Class 4 likes bitter and Class 5 likes pungent taste.

In class 6 more than 87% of the respondents chose type of olive oil as the most important attribute. The remaining attributes constitute the remaining percent of importance (13%).

To sum up, each class showed distinctly their top importance attribute: Class one for price, class two for domestic olive oil, class three for imported olive oil, class four for bitter taste, class five for pungent taste and class six for extra virgin olive oil.

The above analysis showed the relative importance of each class' attributes, but to determine the types of consumers for each of the six classes for marketing purposes we analyzed the socio-demographics data. The socio-demographics used in most consumer studies are gender, age, education and income. For the socio-demographic analysis of this study, household size and knowledge of the different types of olive oil (Knowledge of Difference) were also included for the analysis (Table 8).

Socio-demographic analysis indicates that Class 1 comes from lower income households. Classes 2 and 5 showed no significant socio-demographics to indicate the types of people included in these groups. Class 3, which has the largest number of significant socio-demographics, is comprised of older females who are not likely high school graduates, but are from higher income households. They also do not have prior knowledge regarding the

differences between the types of olive oils. The characteristics of this class are very similar with the female consumers described in a survey conducted by Krystallis and Ness (2004). Class 4 is comprised of people who are knowledgeable about the different oil types and Class 6 is a male dominated group from small households.

Table 8. Socio-demographic Estimates by Class

Covariates	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
GENDER						
Male	0.082	0.006	-0.949**	0.263	-0.025	0.624*
Female	-0.082	-0.006	0.949**	-0.263	0.025	-0.624*
EDUCATION						
Elementary	0.394	0.789	1.349	1.940	-2.090	-2.381
High School	-0.330	-0.194	-1.330*	-0.896	1.319	1.430
University	-0.064	-0.595	-0.019	-1.043	0.771	0.951
INCOME	-0.253**	-0.125	0.342**	0.153	-0.120	0.003
AGE	-0.017	0.006	0.037*	0.006	-0.024	-0.008
KNOWLEDGE OF DIFFERENCE						
Yes	-0.191	0.041	-0.728**	0.751**	-0.003	0.130
No	0.191	-0.041	0.728**	-0.751**	0.003	-0.130
HOUSEHOLD SIZE	0.054	0.142	0.212	0.131	0.055	-0.594**

Discussion

To sum up the different results (utilities estimation, attribute importance and socio-demographic analysis), we can indicate that Class 1 respondents preferred extra virgin domestic olive oil and willing to pay higher prices, but were from lower income households, which was contrary to our expectations. Its members considered price as the most important attribute out of the five but, in general, low income people are not as willing to pay higher prices for food items. However, it may be that Albanians see olive oil as a healthier oil and as such, are willing to pay more for it. In addition, the average consumer in Tirana is not familiar with quality criterion of olive oils. Currently, Albania has weak food quality and safety assurance enforcement such that consumers have to rely on their uneducated judgments and experience to gauge quality. As a result, Albanian consumers behave just as any other consumers in the presence of asymmetric or vague information on the product, and use price as an indicator of quality (Sandalidou et al. 2002, Anania and Nistico 2004, Cicia et al. 2002).

Class 2 respondents consider origin to be the most important attribute. This class combined with Class 1 together account for almost 75% of the respondents who preferred domestic olive oil.

Even with preferences for higher priced domestic olive oil, the reality with over 1,000 tons of imports, some of the consumers of this group might still be purchasing imported olive oils. Albania's olive oil prices range from USD$ 3-5 dollars per liter, while prices from Spain, Italy and Greece are higher. Spanish olive oil has the lowest prices at $6.25 per liter, with import taxes driving the prices Albanians pay even higher. As mentioned above, without prior knowledge of or familiarity with these products, price is often used as an indicator of quality. As olive oil is a staple part of the Albanian diet, people will tend to purchase good quality items to consume. As a result Albanians might choose to purchase imported olive oil as they interpret the higher prices as indicating a good quality olive oil. Often quality can be standardized and labeled that indicates its quality. However if the label is not recognized by the consumers, they would most likely choose other olive oils that are more well-known or default to using price as a quality indicator.

In Class 3, which is comprised of older females who generally prefer imported olive oil and higher prices, the imported products were likely seen as being higher quality. Imports are perceived being produced in a more secure and controlled environment with more available information regarding safety issues (Civici et al, 2004). Since the females and retired males who usually take care of everyday food purchases tend to be more risk averse, they focus on food safety when selecting their everyday food purchases. In this survey, their orientation towards imported products appears to be a result of their perception of the affiliation between imports and safety. It is not surprising that this group exhibits no significant preferences based on type, as its members do not have knowledge of the different olive oil types. This lack of product knowledge can lead to a reliance on price as a marketing cue for product quality (Volckner and Hofmann 2007, Verdu-Jover et al. 2004, Zeithaml 1988 quoted at Veale and Quester 2009, Gabor and Granger 1966, Kupiec and Revell 2001), which results in a preference for higher priced olive oils. Other studies show that origin is also taken as a proxy for quality (Cicia et al., 2002, Scarpa and Del Giudice 2004)). High income families, such as those found in Class 3, are more likely to be able to afford and be willing to pay the higher price demanded for olive oils imported from well-known producers such as Spain, Italy and Greece.

Classes 4 and 5 showed statistically significant preference only for taste and price, with taste ranked as the most important attribute. Together these two classes make up about 13% of the total number of respondents. Although Class 5 did not show any significant socio-demographics, Class 4 showed significant knowledge in the difference between the types of olive oil, which allowed them to form a specific olive oil preference. This is useful for producers in marketing to label their products as it can be exploited to enhance product recognition. Some classes had a specific taste preference for bitter (Class 4) and pungent (Class 5) and both are willing to pay higher prices for their preference. Though this population segment is small, it creates the potential for small niche markets that cater to specific consumers. As these consumers are willing to pay higher prices for their preferred product, these niche markets can produce high quality olive oil directed towards such consumers.

Class 6 had significant preference for types of olive oil and considered this attribute to be the most important. This class was also the only class that showed a negative, though not statistically significant price preference. Type of olive oil seemed to entirely determine their purchasing decisions. It would be of interest to learn how much this class would be willing to pay more for

their desired olive oil product. To do so, willingness-to-pay could be determined for Class 6 in terms of purchasing extra virgin olive oil or virgin olive oil as opposed to normal olive oil.

Willingness to Pay (WTP)

Willingness to pay as defined in equation 6 shows the maximum amount of money that consumers are willing to pay for changes in product attributes. Willingness to pay can be determined using the ratio of the difference of the attribute coefficients to the negative of the coefficient of the monetary attribute (Colombo et al. 2008). In this study, the WTP equation is as follows:

$$(6) \qquad WTP = -\frac{1}{\beta_m}(V^1 - V^0)$$

Where, β_m is the parameter estimate of price, and V^0 and V^1 are the initial utility and after change utility of an attribute, respectively. This willingness to pay for Class 6 respondents is an additional 12.2 leks to upgrade from virgin to extra virgin olive oil and 13.8 leks from normal to extra virgin.

Conclusion

Changes in the Albanian economy have led to changes in consumer behavior and preferences for the olive oil. Understanding consumer preferences is important for stakeholders and government policy makers in marketing their products as well as producing the products preferred by their consumers. These preferences can be determined through the attributes and/or characteristics of the olive oil product, and consumer types can be inferred from the choices that they make amongst those attributes.

Results of latent class show 6 different classes of people with different olive oil preferences. A majority of respondents preferred a specific type or taste of higher priced, domestic olive oil, though a small percentage preferred imported oil. Overall, a majority of the respondents chose price to be among the most important attributes.

The overall picture shows a strong demand for quality. Origin is a key choice factor for three out of six consumers' segments, altogether representing 82% of respondents. Also, there is not a direct correspondence between low income and preference for low prices, as high prices are considered one of the few reliable proxies for quality.

Most of the consumers show a preference for Albanian olive oil, even though trade statistics show that imports are growing. This can be explained by the fact that imported olive oil is generally considered higher quality. From the study, Albanian olive oil would be preferred, but consumers have little confidence in the quality and food safety standards of the domestic commercial processor since commercial fraud is common due to underfunded regulating authorities to carry out their duties (World Bank 2007). Many consumers still choose to buy olive oil directly from farmers they know, as they trust the quality of their products more than

commercial processors. All these factors create ideal conditions for branding, for promotion of quality for niche markets.

A key issue for improving customer's confidence is to set transparent standards and regulate compliance. Albanian standards on paper for olive oil are comparable to the standards provisions included in 1995 European Union regulation (i.e. EC Regulation 656/95). Since 1995, however, some changes have been introduced in the EU rules. This will require modification of the Albanian legislation to keep up with European Union system of rules (the *acquis communautaire*).

In addition, the Albanian institutions in charge of controlling and promoting the olive oil industry have to seriously begin to focus on strengthening the standards of food safety and quality certification to gain Albanian consumers' confidence on domestic labeling and standards. Only if consumers eventually gain confidence in the correlation between quality declared in the label and actual quality of product, then high price will be no more be considered the best proxy for quality.

This study showed that there is a high demand for Albanian olive oil. Furthermore, the majority of respondents indicate they are willing to pay a higher price for the product. However, in reality, there is a substantial amount of imported olive oil, which indicates there exist a demand for imports. Again, this could be due to the perceived higher quality of imported olive oil. Albania needs to have standardized regulations for quality and branding/labeling of domestic products, which will be recognized nationally and internationally in order for people to trust the quality of their products. In addition, the olive oil industry needs to educate and market to both current and potential consumers regarding the quality of domestic olive oil.

The Albanian olive oil industry's future outlook is positive. Incorporating consumer preferences into a product development and marketing strategy could benefit the industry in improving domestic sales. Knowing the olive oil attributes preferred by the consumers can help suppliers improve and define their market segments and niches, which are clearly characterized in this study. This market segmentation information can be used by olive oil producers and by food distribution operators to adapt their offerings.

As found in this study, a majority of the respondents are willing to pay higher prices for domestic olive oil but imports are still a large share of their consumption. This result is in line with different olive oil and food product studies, which showed that with vague knowledge of and information on quality differences, consumers use price as a quality indicator. Such findings have many implications for companies and institutions. Albanian companies of quality products can use a price leader strategy to set themselves apart from other companies that produce lower quality products. In addition, the institutions in charge of controlling and promoting the olive oil industry have to focus on issues such as food safety and quality certification.

There are also small niche markets for specific characteristics of olive oil such as taste and type, indicating an opportunity for a variety of olive oil products. Specifically, Albanian producers can offer different olive oils in terms of acidity, aroma, taste and color by diversifying the genotypes and regions of culture of the raw olives. A further study of the various types and tastes of olive oils is needed to better understand the specialized preferences of consumers. Table 9

(see Appendix) summarizes the results of the study by classes and the respective recommendations to the industry and government bodies.

Educating consumers about all aspects of olive oil production is much needed and could also help in promoting olive oil consumption, particularly in regions such as northern Albania which are not familiar with the product types. Promoting the substitution of domestic olive oil for fats from other oils may also encourage import substitution of olive oil and even facilitate exports.

The olive oil industry in Albania is growing and the future outlook for the industry is positive. Incorporating consumer preferences into product development and marketing will benefit the industry and help in selling the product to the consumers. With the increase in olive oil production, knowledge of consumer preferences will help satisfy consumer demand and assist local producers in competing with imported products, producing a more diversified domestic market.

Acknowledgement

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Appendix

Table 9. Result Summary and Marketing Recommendation

Class	Class Size (%)	Significant Preference Attributes	Significant Socio-Demographics	Marketing Recommendation	For Whom
1	47.6		Low Income	Price Leader Strategy to set them apart from lower quality company	Industry
		Type - Extra Virgin		National and international quality certification	Government
		Origin - Domestic		Market Segment Strategy by enlarging the price gap between olive oils	Industry
		Price - Higher			
2	26.4			National and international quality certification	Government
		Origin - Domestic			
		Place of Purchase - Supermarket		Food safety - build trust with industrial producers	Industry and Government
		Taste - Pungent		Research on different cultivars and climate	Government
		Cost - Higher		Price Leader Strategy to set them apart from lower quality company	Industry
3	8.3		Female	National and international quality certification	Government
		Origin - Import			
			Older	Price Leader Strategy to set them apart from lower quality company	Industry
		Cost - Higher			
			Unlikely to have High School Education		
			Higher Income		
			No Knowledge of Difference in Olive Oil type	National and international quality certification and education	Government
4	7.1		Knowledge of Different Olive Oil types	Market segmentation for small niche markets and research on cultivars	Producers and Government
		Taste - Bitter			
		Cost - Higher			
5	5.5			Market segmentation for small niche markets and research on cultivars	Producers and Government
		Taste - Pungent			
		Cost - Higher			
6	5.1		Male, Small Household	Price Leader Strategy to set them apart from lower quality company, adopt new processing technology	Industry
		Type - Extra Virgin, Virgin			